

Chesapeake BAY CROSSING STUDY
TIER 2 NEPA

DRAFT EIS AGENCY COMMENTS AND RESPONSES

FINAL ENVIRONMENTAL IMPACT STATEMENT

APPENDIX H

OCTOBER 2026

MDTA Maryland Transportation Authority

U.S. Department of Transportation Federal Highway Administration

Chesapeake BAY CROSSING STUDY
TIER 2 NEPA

Appendix H - Draft EIS Agency Comments and Responses



October 2026

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ANNE ARUNDEL COUNTY COMMENT

ANNE ARUNDEL COUNTY MARYLAND

Office of the County Executive
STEUART PITTMAN

February 19, 2026

The Honorable Katie Thomson
Acting Secretary of the Maryland Department of Transportation
7201 Corporate Center Drive
Hanover, MD 21076 - 0548

Dear Secretary Thomson:

As you and the other Board members of the Maryland Transportation Authority (MDTA) prepare to approve funding for the construction of the Chesapeake Bay Bridge, I wish to express our sincere support for protected shared use bike/pedestrian path and multimodal transit funding. I realize the monumental challenge of funding such an integral component but also want to emphasize the generational impact of the project. With supportive infrastructure for multimodal transportation on both the Western and Eastern Shore of the bridge there would be ample connectivity for non-motorists to commute as well as for recreational use. This linkage as well as an investment in bus transit infrastructure would also alleviate barriers which presently result in inequitable access for those who presently do not own a vehicle as there is limited transit available.

The Chesapeake Bay Bridge is vital to the economy of the State of Maryland, and having protected bike/pedestrian access is a goal of members of the Anne Arundel County Bicycle/Pedestrian Advisory Commission. By including a protected bike/pedestrian path into the design of the bridge, the MDTA would be supporting the removal of barriers for alternative modes of transportation as well as additional recreational tourism in the Central Maryland region for generations.

I encourage you and the MDTA Board to include a protected bicycle and pedestrian lane in the design of the future Chesapeake Bay Bridge facility.

Sincerely,

Steuart Pittman
County Executive

The Best Place - For All
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ANNE ARUNDEL COUNTY RESPONSE

The MDTA appreciates the input provided by Anne Arundel County on the Tier 2 Study Draft EIS. In response to specific comments contained in Anne Arundel County's comment letter, the MDTA offers the following response:

Thank you for the comment regarding the inclusion of a protected bicycle and pedestrian facility (shared-use path or SUP) with a new Bay Bridge. The MDTA has considered all public comments provided during the Draft EIS comment period, including those specifically related to the SUP.

After approval of the Final EIS/ROD, the MDTA will perform financial analysis and determine whether an SUP will be implemented. If the SUP is included, additional coordination would occur among local, state, and Federal agencies regarding connections, parking, maintenance, and other features, as well as consistency with local pedestrian and bicycle plans, the 2025 Maryland State Transportation Trails Strategic Plan, and MDOT's Complete Streets Policy (See Final EIS **Section 3.3.1**).

DEPARTMENT OF THE INTERIOR – NATIONAL PARK SERVICE COMMENT

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
1234 Market Street. 20th Floor
Philadelphia, Pennsylvania 19107

March 9, 2026

4111
ER26/0047

Alexander Bienko

RE: DEIS, Chesapeake Bay Crossing Study Tier 2, Anne Arundel and Queen Anne's Counties, MD, DOT-FHWA

The U.S. Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement (DEIS) for the Chesapeake Bay Crossing Study Tier 2 in Anne Arundel and Queen Anne's Counties, Maryland.

The DEIS evaluates current and future transportation issues for the Chesapeake Bay Bridge. The proposed project covers a two-mile-wide and 22-mile-long area that includes the bridge and approaches along U.S. 50/301. As Maryland's only crossing of the Chesapeake Bay, the Bay Bridge plays a vital role in facilitating transportation, commerce, and tourism in the region. A no-action alternative and six build alternatives are evaluated in the DEIS. Each build alternative would replace the two existing bridge spans with two new, higher-clearance spans. The National Park Service served as a cooperating agency on this project.

The NPS supports the selection of Alternative C (6-8-6 South) as Maryland Transportation Authority's (MDTA) recommended preferred alternative, and the reduced environmental footprint of that alternative over the larger lane alternatives.

Upon reviewing the DEIS, the Department offers the following comments and recommendations:

Natural Resources

As displayed in Table 4-47, the preferred alternative is expected to impact approximately 27. 4 acres of forested land; however, the mitigation discussion on these impacts on page 4-120 only references mitigation for this loss in generalized terms such as: "For unavoidable impacts, mitigation strategies would focus on controlling the spread of invasive species and restoring the affected areas. These include removing invasive species mechanically or chemically prior to the start of construction activities and replanting with native vegetation. The native vegetation would help to restore biodiversity." Additional details on specifics of replanting plans and the type of native vegetation being replanted should be included in the Final Environmental Impact Statement (FEIS). As the designs for the bridge become further developed, we recommend that tree clearing be avoided to the extent practicable, and any trees impacted be quantified, and replanting sites be identified.

Noise

The Federal Highway Administration's (FHWA) Noise Abatement Criteria (NAC) [Hourly A-Weighted Sound Level in Decibels dB(A)] for Category A, and its narrow interpretation of lands that should be included in that criteria is very limited and the NPS finds that by lumping parks, trails, open space areas, and campgrounds with active sport areas, amphitheaters, daycare centers, hospitals, playgrounds, schools, and other uses, this does not properly evaluate noise impacts in the human environment. By using this criteria level, NPS believes the project's potential noise impacts are underestimated by at least a factor of two since the impact threshold level criteria will be set at 67 dBA (Category C) instead of 57 dBA (Category A).

a. Holly Beach Farm was preserved by a grant from the NPS in 2001 with the intent to be "maintained in the public trust for preservation/recreational use in perpetuity." In addition, the most important aspect of the property is the concept of increasing its quiet park-like accessibility to others while avoiding adverse impacts of crowding, traffic, or neighborhood disruption. This further supports the rationale that Holly Beach Farm would be a better fit in Category A.
b. As applicable to NPS lands, the Department prefers that the project use the relevant standard ASA/ANSI SC1.100-2014, "Methods to Define and Measure the Residual Sound in Protected Natural and Quiet Residential Areas". As stated in the standard, "the main purpose... is to develop procedures to estimate the residual sound levels in an area where these levels are used to evaluate the effects of a noise source, with two examples being wind turbine noise in quiet rural areas and transportation noise in U.S. National Parks". Use of the standard would offer the credibility of scientific consensus from a broadly representative group of stakeholders, including the U.S. Department of Transportation.
c. The Department recommends that Holly Beach Farm be included in the noise study for this project. As discussed at previous meetings coordination meetings with NPS, the 500'-1000' noise analysis limits for the area of potential effect are not large enough for a project of this scale to adequately capture noise impacts. The preferred alternative with the southern alignment and increase in bridge height will have further reaching noise impacts to areas to the south than that of the original bridge. The Department recommends that the noise analysis consider all resources within 1.5 miles of the bridge since this distance would allow for the inclusion of Holly Beach Farm in the project area.
d. Since Holly Beach Farm and other important resources are located across the water from the preferred bridge alternative (Alternative C), we recommend that the noise analysis discuss how sound will travel across wetlands and water, as well as across land. This new south alignment will be closer to Holly Beach Farm and have an increased level of noise impact on that property. There is no discussion of these types of impacts in the DEIS, and we recommend that analysis be added to the FEIS.

e. Noise impacts on wildlife are very well documented in published research; however, there is no specific discussion in the DEIS of noise impacts to wildlife that is found in the open space areas found in the project area. We recommend that analysis also be added to the FEIS.
f. Page 4-149, Sandy Point State Park, - Impact Determination is that noise abatement is not reasonable. The justification for not using noise abatement here is based on residential use: "based on highway noise guidelines, the linear frontage of the usage area and the applied use-time percentage adjustment, the equivalent residences that are impacted at this location (2.8) is fewer than three; therefore, noise abatement is not reasonable, and further analysis is not required." With this analysis and comparison to residential areas, open space areas are being prematurely dismissed, and not appropriately assessed and mitigated for noise impacts. Open spaces such as Sandy Point State Park should also receive appropriate noise abatement for recreational users of the park and fauna that use the park. Recommend contacting Sandy Point State Park Officials to determine appropriate noise abatement here.
g. Page 4-151, Terrapin Nature Park. - Impact Determination is that noise abatement is not reasonable. The justification for not using noise abatement discussed in the DEIS is based on residential use: "based on highway noise guidelines, the linear frontage of the usage area and the applied use-time percentage adjustment. the equivalent residences that are impacted at this location (2.8) is fewer than three; therefore, noise abatement is not reasonable, and further analysis is not required." With this analysis and comparison to residential areas, open space areas are being prematurely dismissed, and not appropriately assessed and mitigated for noise impacts. Open spaces such as Terrapin Nature Park should also receive appropriate noise abatement for recreational users of the Park and fauna that use the Park. Recommend contacting Terrapin Nature Park Managers to determine appropriate noise abatement here.
h. Section 4.8.2 – the noise impact analysis focuses only on the approach roads, and does not discuss impacts from vehicles traveling across the main span of the bridges. We recommend adding a discussion on that type of noise impact and potential associated mitigation (i.e., quiet pavement, expansion joint, noise barriers) for those; or, further explain how those issues may be addressed during the design phase of the bridges.

Lighting

a. On page 4-31, the MDTA commits to developing a lighting plan for a new bridge during final design. Final elements related to the lighting plan would depend on structure type of the new bridge and whether the optional SUP is included in the project.
b. The Department recommends that the bridge and its approaches use shielded, Dark Sky-compliant lighting fixtures that incorporate LED

fixtures with a color warmth of no more than 2200 Kelvin (a "warm" color that may be less intrusive than bright white lighting).

c. The NPS maintains a Night Skies website with night sky lighting best practices to mitigate impacts to the night sky and demonstrate the benefits of sustainable outdoor lighting. It is recommended that the Bay Crossing study team use these resources to address potential indirect impacts to the night skies to the surrounding communities and adjacent Section 4(f) resources. Please see the links: Sustainable Outdoor Lighting Principles - Night Skies (U.S.National Park Service) (nps.gov) for more information.
d. We also recommend that FHWA use the ANSI/IES RP-43-25 standard guide (https://webstore.ansi.org/standards/iesna/ANSIIESRP4723) when designing lighting associated with any SUP. There are numerous recommendations in the guide on the best ways to light pedestrian areas for safety and to also minimize unnecessary light trespass on night skies.
e. We also recommend considering the height of the light pole and using only the highest pole needed to accommodate large vehicles. Standard light poles are approximately 30 feet, and the MDTA regulates vehicle height to ensure safety on the roads. The height limits are as follows:
    i. General Height Limit: 13 feet 6 inches for most vehicles.
    ii. Extended Height Limit: 16 feet for vehicle combinations transporting farm equipment.
        1. Consider having light poles on the bridge that are lower in height (i.e., 25 ft) to provide proper safety clearance and ensuring that the spill of light from the fixtures more directly falls onto the surface below.

Signage

If a Shared Use Path (SUP) is included in any new bridge, the NPS would like to work closely with MDTA/Federal Highway Administration (FHWA) to discuss the option of installing interpretive signage for visitors who will have a wide view of the Chesapeake Bay from the vantage point afforded by the SUP. This view would include a Captain John Smith voyage stop, and the location of multiple 17th century Native American town sites.

Groundwell Water

The U.S. Geological Survey (USGS) operates groundwater wells throughout the U.S. to collect water quantity and quality data for a variety of purposes. These wells are permanent infrastructure and are vulnerable to disruption from nearby construction activities and/or surface/subsurface contamination. In addition, the data they provide may be affected. The USGS maintains the following active wells within the area affected by the proposed project.

Station Number	Station Name	Site Type	Data Collected
385852076195202	QA Eb 157	well	water level, water quality

385852076195201	QA Eb 156	well	water level, water quality
385756076105301	QA Ec 1	well	water level
390121076253301	AA Cf 152	well	water level

The Maryland-Delaware-DC Water Science Center operates these USGS stations and should be contacted and given sufficient advance notice before construction occurs near them. Efforts should be made to both preserve these stations and minimize impacts to data collected at them.

Section 4(f) and Section 6(f) Properties - Page 5-4, Table 5-1

a. We recommend that MDTA and FHWA continue to coordinate with the NPS as the bridge design moves forward on potential impacts to Section 4(f) and 6(f) properties.
b. Impacts to Sandy Beach State Park and Holly Beach Farm could result in a conversion under Section 6(f), and, if they do, as a reminder Section 6(f) of the Land and Water Conservation Fund (LWCF) Act (now codified at 54 U.S.C. §200305(f)(3)) provides, in part, that:
... no property acquired or developed with assistance under this section shall, without the approval of the Secretary, be converted to other than public outdoor recreation uses. The Secretary shall approve such conversion only if he finds it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions as they deem necessary to assure the substitution of other recreation properties of at least equal fair market value and reasonable equivalent usefulness and location.
c. The Section 6(f) review process is in the preliminary stages, and we recommend that the Bay Crossing Study team continue coordination with the Maryland Department of Natural Resources, Land Acquisition and Planning Unit, and NPS on this issue.
d. We recommend a baseline study of current noise levels at Holly Beach Farm, Sandy Point State Park, and Terrapin Nature Park be completed, and then compared to expected noise levels after project completion. This will also assist FHWA to determine the difference between the existing and as-built conditions, and determine if, and what noise mitigation efforts may be needed for the project. Table 4-2, of the Appendix E – Section 4(f) Evaluation summarizes potential uses to Section 4(f) properties. As per 23 CFR 774.17, a *de minimis* impact determination subsumes the requirement for all possible planning to minimize harm because impacts have already been reduced to a *de minimis* level. In the case of noise impacts for Holly Beach Farm, Sandy Point State Park, and Terrapin Nature Park, the Department encourages additional planning to be undertaken to minimize harm to these properties.
e. When evaluating and mitigating noise impacts on Section 4(f) and 6(f) properties, keep in mind that noise impacts, if not properly mitigated,

could result in a constructive use of a resource. The types of impacts that may qualify as constructive use, such as increased noise levels that would substantially interfere with the use of a noise sensitive feature are addressed in 23 CFR 774.15: *The Administration has reviewed the following situations and determined that a constructive use occurs when:*

f. (1) The projected noise level increase attributable to the project substantially interferes with the use and enjoyment of a noise-sensitive facility of a property protected by Section 4(f), such as:

(i) Hearing the performances at an outdoor amphitheater;
(ii) Sleeping in the sleeping area of a campground;
(iii) Enjoyment of a historic site where a quiet setting is a generally recognized feature or attribute of the site's significance;
(iv) Enjoyment of an urban park where serenity and quiet are significant attributes; or
(v) Viewing wildlife in an area of a wildlife and waterfowl refuge intended for such viewing.

2. Mitigation
   a. If mitigation is needed to offset impacts to Section 4(f) or 6(f) resources, the NPS recommends that FHWA consider Weedon Farm (1741 Holly Beach Farm Rd) as a potential property acquisition. It is an important historic property that is privately owned at the north end of Holly Beach Farm directly on the Bay with a protected cove and dock. It was for sale earlier in early 2026, and is a critical missing piece to open the site to appropriate public access.

Thank you for the opportunity to review and comment on this proposed project. If you have any questions concerning our comments on groundwell water, please contact Alison Gordon (agordon@usgs.gov) and Frederick Spitz (fspitz@usgs.gov); for questions on lighting, noise, signage, and 4(f) and 6(f) resources, please contact Mark Eberle (Mark_Eberle@nps.gov).

Sincerely,

JOHN NELSON

Digitally signed by JOHN NELSON
Date: 2026.03.09 19:09:37 -04'00'

John Nelson
Regional Environmental Officer

DEPARTMENT OF THE INTERIOR – NATIONAL PARK SERVICE RESPONSE

The MDTA appreciates the input provided by the Department of the Interior (DOI) – National Park Service (NPS) on the Tier 2 Study Draft EIS. In response to specific comments contained in NPS's comment letter, the MDTA offers the following response:

Natural Resources

The MDTA has avoided and minimized impacts to forest where possible, and potential forest impacts from the Preferred Alternative have been updated in the Final EIS. The MDTA will continue to assess opportunities to avoid and minimize impacts to trees during final design. The Final EIS presents mitigation commitments and conceptual mitigation opportunities, including potential mitigation for forest impacts. The mitigation opportunities identified in the Final EIS will be used to develop a Compensatory Mitigation Plan during permitting. Details on vegetation restoration within the limits of disturbance as well as planting locations and planting design for any off-site mitigation will be developed during final design and coordinated with the appropriate regulatory agencies.

Noise

A Notice of Proposed Rulemaking on FHWA noise regulations (23 CFR 772) was published in the Federal Register in Fall 2024 and the comment period ended on December 17, 2024. The noise criteria used for the Bay Crossing Tier 2 Study follows and is in alignment with FHWA's Noise Abatement Criteria (NAC) outlined in 23 CFR 772.

a. The noise criteria used for the Bay Crossing Tier 2 Study follows and is in alignment with FHWA's Noise Abatement Criteria (NAC) outlined in 23 CFR 772.

b. A Notice of Proposed Rulemaking on FHWA noise regulations (23 CFR 772) was published in the Federal Register in Fall 2024 and the comment period ended on December 17, 2024. The noise criteria used for the Bay Crossing Tier 2 Study follows and is in alignment with FHWA's Noise Abatement Criteria (NAC) outlined in 23 CFR 772.

c. 500'-1000' is a general guideline for where traffic noise impacts are typically found for roadway projects, however the noise analysis is not bound by that area. The extent of the impact analysis and modeling begins at the edge of the roadway shoulder and continues until impacts are no longer found. Holly Beach Farm is beyond the limits where the noise model identified impacts.

d. FHWA's Traffic Noise Model considers various ground zones, including water surfaces. Water is hard reflective surface and water ground zones have been input into the Tier 2 Study model. The results presented in the EIS and Noise Technical Report incorporate these inputs.

e. Noise impacts to wildlife are outside the scope of FHWA's noise regulations (23 CFR 772) and the Traffic Noise Model. Any impacts to wildlife are being coordinated with U.S. Fish & Wildlife Service and National Marine Fisheries Service . If noise is raised as a concern by the Services, it will be addressed accordingly.

f. The MDTA followed MDOT State Highway Administration's (SHA) Highway Noise Policy, which states in **Section 4.3.3** that for Activity Category C, impact weighting may be applied based on an assessment of use-time of the land use. The weighting procedures for equivalent residences (ER) for outdoor noise sensitive uses are presented in Appendix D of the Noise Policy, and involve determining the initial number of ER based on capacity and/or linear frontage, which is then reduced according to the relevant use-time percentage. For NSA 2-08-C (Sandy Point State Park), the final ER was calculated to be 2.8, based upon 700 feet of linear frontage for the fishing jetty and beach adjacent to the highway, and adjusting by a usage factor of 0.5 due to the park being open every day of the year for an average of 12 hours per day (7AM to sunset), ER = (700/125) * (12/12) * (7/7) * (12/24) = 2.8, as shown in **Table 5-61** in the FEIS. In accordance with SHA's Highway Noise Policy, since this value is below 3 it does not require investigation of mitigation measures. No comments were received from DNR regarding noise impacts at Sandy Point State Park.

g. The MDTA followed MDOT State Highway Administration's (SHA) Highway Noise Policy, which states in **Section 4.3.3** that for Activity Category C, impact weighting may be applied based on an assessment of use-time of the land use. The policy notes that if it is determined that the only outdoor noise sensitive use present within an NSA is not of sufficient frequency, duration, or permanence, then no further consideration is required, beyond identifying its use. This was the determination made for NSA 3-70-C (Terrapin Nature Park), as the trail has no permanent gathering areas and use is considered transitory in nature. No comments were received from Queen Anne's County regarding noise impacts at Terrapin Nature Park.

h. There are no noise impacts on the main span because there are no noise-sensitive receptors next to it as it is over water. The landside impacts do include noise from the bridge. They do not include noise from bridge joints or open decking, per FHWA policy. There was no attachment included related to the Tacoma Narrows Bridge. However, every project is different and constrained by State policies and financial considerations.

Lighting

a. Thank you for your comment. This is noted in **Section 5.3.3** of the Final EIS.

b. Thank you for your comment. These elements will be considered in the lighting plan during final design.

c. Thank you for your comment. These elements will be considered in the lighting plan during final design.

d. Thank you for your comment. These elements will be considered in the lighting plan during final design, should a shared-use path be implemented.

e. Thank you for your comment. These elements will be considered in the lighting plan during final design.

Signage

If the shared-use path (SUP) is advanced after the Final EIS/Record of Decision, the MDTA would consider the inclusion of interpretive signage along the SUP and would coordinate with stakeholders such as the NPS on the content of such signage.

Groundwell Water

The MDTA has coordinated with USGS to obtain additional well data and more accurate well location information to assess potential impacts to groundwater wells. This information has been added to Final EIS **Section 5.5.2.1**. The Maryland-Delaware-DC Water Science Center will be contacted and given sufficient advance notice before construction occurs near the USGS groundwater wells. Additionally, the MDTA will coordinate with USGS and the MDE Water Supply Program during final design and construction to determine potential impacts to active and inactive groundwater wells; determine if any groundwater wells require abandonment and if so, coordinate the abandonment procedures; and determine if mitigation is required for these impacts. These commitments are included in Final EIS **Section 5.5.2.3**.

Section 4(f) and Section 6(f) Properties

a. The MDTA and FHWA will continue to coordinate with NPS as the project progresses.

b. The MDTA refined Alternative C (the Preferred Alternative) eliminated impacts from roadway improvements to Sandy Point State Park and eliminated all impacts to Holly Beach Farm. The optional shared-use path (SUP) would impact the edge of Sandy Point State Park. Impacts to Sandy Point State Park associated with the optional SUP would enhance and benefit the outdoor recreation use of the park; therefore, a Section 6(f) conversion is not anticipated. If the optional SUP is advanced, the MDTA will coordinate with MDNR and NPS regarding its development and construction, and any associated Section 6(f) requirements, after FHWA issuance of a NEPA decision.

c. The MDTA refined the Preferred Alternative and eliminated impacts to Section 6(f) properties from roadway improvements. The optional shared-use path (SUP) would impact the edge of Sandy Point State Park. Impacts to Sandy Point State Park associated with the optional SUP would enhance and benefit the outdoor recreation use of the park; therefore, a Section 6(f) conversion is not anticipated. If the optional SUP is advanced, the MDTA will coordinate with MDNR and NPS regarding its development and construction, and any associated Section 6(f) requirements, after FHWA issuance of a NEPA decision.

d. Noise measurements of existing conditions were taken at or adjacent to Holly Beach Farm, Sandy Point State Park, and Terrapin Nature Park to validate the baseline noise model. While existing and Preferred Alternative noise levels exceed the Noise Abatement Criteria threshold at Sandy Point State Park and Terrapin Nature Park, no reasonable or feasible noise mitigation was identified, as described below. Both the existing and Preferred Alternative noise levels along Skidmore Drive adjacent to Holly Beach Farm do not indicate a noise impact to this resource.

   MDOT SHA Noise Policy **Section 4.3.3** states for Activity Category C, impact weighting may be applied based on an assessment of use-time of the land use. The weighting procedures for equivalent residences (ER) for outdoor noise sensitive uses are presented

in Appendix E of the Noise Policy, and involve determining the initial number of ER based on capacity and/or linear frontage, which is then reduced according to the relevant use-time percentage. If it is determined the use is sufficient, a use-time percentage adjustment is applied to the initial ER to determine the final ER. For Sandy Point State Park, the final ER was calculated to be 2.8. The policy notes that if it is determined that the only outdoor noise sensitive use present within an NSA is not of sufficient frequency, duration, or permanence, then no further consideration is required, beyond identifying its use. This was the determination made for Terrapin Nature Park. Thus, noise abatement is not reasonable at either property and further analysis is not required.

Regarding Section 4(f), all possible planning to minimize harm has been completed for Sandy Point State Park and Holly Beach Farm, as engineering refinements to the Preferred Alternative eliminated all physical impacts to these properties. All possible planning to minimize harm has also been completed for Terrapin Nature Park which has resulted in de minimis impacts to the property. See **Section 4.1.2**, **4.1.3**, and **4.1.5** of the Final Section 4(f) Evaluation.

In addition, the Preferred Alternative will not result in any constructive use of Section 4(f) properties. The study area already includes moderate-density urban residential and commercial development, high traffic volumes along U.S. 50/301, and the existing U.S. 50/301 alignment already in operation. Potential noise, visual, access, or vibration effects from the Preferred Alternative are not anticipated to substantially impair the protected activities, features, or attributes of the Section 4(f) properties. See **Section 4.1** of the Final Section 4(f) Evaluation.

e. Thank you for your comment. Please refer to constructive use regulations in 23 CFR 774.15. As documented in the Final Section 4(f) Evaluation (See **Section 4.0**), the Preferred Alternative was evaluated for proximity impacts, including noise, to all Section 4(f) properties. The analysis determined that there would be no constructive use as a result of the Preferred Alternative.

Mitigation

The MDTA refined the Preferred Alternative and eliminated impacts to Sandy Point State Park and Holly Beach Farm from roadway improvements; therefore, there are no Section 6(f) conversion requirements associated with these improvements. The optional shared-use path (SUP) would impact the edge of Sandy Point State Park. Impacts to Sandy Point State Park associated with the optional SUP would enhance and benefit the outdoor recreation use of the park; therefore, a Section 6(f) conversion is not anticipated. If the optional SUP is advanced, the MDTA will coordinate with MDNR and NPS regarding its development and construction, and any associated Section 6(f) requirements, after FHWA issuance of a NEPA decision.

MARYLAND DEPARTMENT OF THE ENVIRONMENT COMMENT

Maryland Department of the Environment

Wes Moore, Governor
Aruna Miller, Lt. Governor

Serena McIlwain, Secretary
Suzanne E. Dorsey, Deputy Secretary
Adam Ortiz, Deputy Secretary

March 9, 2026

Maryland Transportation Authority
Division of Planning and Program Development
Attention: Heather Lowe
2310 Broening Highway
Baltimore, MD 21224
Via email: hlowe@mdta.state.md.us

Re: Comments on Draft Environmental Impact Statement for Chesapeake Bay Crossing Tier 2 NEPA Study

Dear Heather Lowe,

The Maryland Department of the Environment (MDE) has reviewed the *Draft Environmental Impact Statement* (DEIS) published by the Maryland Transportation Authority (MDTA) on January 23, 2026. MDE previously reviewed and provided comments on the Administrative Draft of the DEIS on September 8, 2025, and appreciates that most of these comments were incorporated into the published DEIS.

A comprehensive impact avoidance and minimization analysis will be required for the preferred alignment at the time of permit application submission. In the DEIS, MDTA identified Alternative C as the Recommended Preferred Alternative. This alternative would replace the existing bridge spans with two new spans within the existing corridor, south of the existing bridge. The DEIS indicates that Alternative C would result in fewer impacts to natural resources, community resources, and historic resources as compared to all other build alternatives evaluated. MDE supports the recommendation of Alternative C as the selection which would result in the lowest overall impacts to wetlands and other regulated resources based on the study information to date. This commitment to avoidance and minimization should continue throughout the remainder of project planning as well as project design and construction, with the incorporation of appropriate design modifications, construction methods, and best management practices intended to further reduce all regulated impacts where possible.

Compensatory mitigation will be required for all permanent impacts to nontidal and tidal wetlands. The applicant will be required to develop and submit a mitigation plan that adequately compensates

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for permanent wetland losses in accordance with applicable regulatory requirements and established mitigation standards; MDE notes that a Preferred Alternative Compensatory Mitigation submission is forthcoming and will provide detailed mitigation comments after review.

Thank you for the opportunity to review and comment on the Chesapeake Bay Crossing Study DEIS. If you have any questions or if we can assist you in any way, please do not hesitate to contact me by telephone at 410-537-4023 or by email at danielle.spendiff1@maryland.gov.

Sincerely,



Danielle Spendiff, Chief
Regulatory and Customer Service Division
Wetlands and Waterways Protection Program

Cc: Sarah Williamson, Bay Crossing Team

MARYLAND DEPARTMENT OF THE ENVIRONMENT RESPONSE

The MDTA appreciates the input provided by the Maryland Department of the Environment (MDE) on the Tier 2 Study Draft EIS. In response to specific comments contained in MDE's comment letter, the MDTA offers the following response:

The MDTA acknowledges the requirement for a comprehensive avoidance and minimization analysis during design and permitting.

The MDTA acknowledges your support of the Preferred Alternative. The MDTA will continue avoidance and minimization efforts through project planning, design, and construction and will coordinate these efforts with MDE and other resource and regulatory agencies as appropriate.

Conceptual mitigation has been presented to the agencies in the Preferred Alternative and Compensatory Mitigation (PACM) Concurrence Package. Proposed conceptual mitigation is also included in **Section 5** of the Final EIS in the Minimization and Mitigation section for each resource where mitigation is required. The conceptual mitigation will be further developed into a Final Compensatory Mitigation Plan (CMP) during design and permitting. The Final CMP will be fully coordinated with MDE and other regulatory agencies.

MARYLAND DEPARTMENT OF NATURAL RESOURCES COMMENT

MARYLAND DEPARTMENT OF NATURAL RESOURCES

Wes Moore, Governor
Aruna Miller, Lt. Governor
Josh Kurtz, Secretary
David Goshorn, Deputy Secretary

March 09, 2026

Heather Lowe
Planning & Community Relations Manager
Maryland Transportation Authority
Division of Planning and Program Development
2310 Broening Highway
Baltimore, MD 21224

RE: Maryland Department of Natural Resources Comments to the Chesapeake Bay Crossing Study, Tier 2 NEPA, Draft Environmental Impact Statement Comments

Dear Ms. Lowe:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement for the Chesapeake Bay Crossing Study Tier 2 NEPA. Please find Maryland Department of Natural Resources comments to the DEIS and supporting technical reports attached.

Please contact me if you have questions or comments related to this review at MelissaC.Day1@maryland.gov.

Sincerely,

Roland Limpert
Acting Director,
Environmental Review Program
Maryland Department of Natural Resources
580 Taylor Avenue, B-3
Annapolis, MD 21401

Cc: Richard Ortt, Director, Resource Assessment Service
Bob Sadzinski, Director, Power Plant Research Program

Attachments

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410-260-8DNR or toll free in Maryland 877-620-8DNR – *dnr.maryland.gov* – TTY Users Call via the Maryland Relay

Attachment 1: Maryland Department of Natural Resources comments to Chesapeake Bay Crossing Study Tier 2 NEPA Draft Environmental Impact Statement, January 2026

	Page	Page # in .pdf	Section	Section Header	Comment
1-	0	0		General comment	General comment for the whole DEIS: This document should reference the associated documents more and add more summaries in DEIS for the referenced sections. This would help incorporate more information to items that are priorities for DNR- such as blue crabs and non-federal fish species.
2-	0	0		General	The Wildlife and Heritage Service Natural Heritage Program has reviewed the DEIS for the Bay Crossing Study and it appears that our previous comments have been incorporated. These included concerns for a great blue heron colony near Sandy Point, a habitat protection area at Sandy Point for breeding marsh birds including the Black Rail, mixed heron colonies on the man made islands under the bridge towers, peregrine falcon nest sites under the catwalk of the bridge, waterfowl concentration and staging areas along shorelines to the east and west of the bridge, and Delmarva fox squirrel and potential FIDS habitat in the forested areas of the study area. For further technical assistance regarding all avian concerns except waterfowl, Dave Brinker of our staff would be the contact at dave.brinker@maryland.gov. For waterfowl concerns, Kayla Harvey would be our contact at Kaylam.harvey@maryland.gov.
3-	0	0		General comment	DNR MPS requests a communications plan during construction regarding how operations may affect Sandy Point State Park and its users. A primary concern is how a fifteen year construction window will affect day to day management of the Sandy Point State Park and Mezick Pond. With construction anticipated to begin around 2032 and major components such as dredging to nine feet and possible pier blasting, DNR needs to better understand how access will be maintained. During peak season the Park is moving a very high volume of boaters and beach goers, and DNR cannot have extended periods where access is effectively cut off. Construction staging appears to be primarily off site, but that remains a concern given Park visitation levels and the potential for conflicts.
4-	0	0		General comment	DNR appreciates that the preferred western shore connection has shifted to Oceanic Drive. Our earlier concern was that terminating the path inside the park would create parking pressure and congestion from users who are not utilizing the beach or marina. Keeping that connection parallel to the westbound lanes is a much more workable approach for us and positions park use as an option rather than a requirement for those using the path.
5-	0	0		General comment	Please make it clear that the recommended southern alignment avoids new permanent structures or height limitations over Mezick Pond and its inlet, which would create significant operational issues for one of the busiest marinas in the region. Earlier drafts showed limits of disturbance at the pond entrance, so please confirm any construction at Mezick Pond and its inlet are only temporary measures such as sediment control rather than a change in bridge footprint.
6-	0	0		General Comment	Forest Mitigation that adds trees to gaps identified in the Habitat Connectivity Network is preferred.
7-	2-9	9	2.2.5.3	Future Shipping Traffic	It would be helpful to understand the approximate depth required by the Panamax III Max vessels to understand how it relates to the navigation channel depth and how it may influence future federal dredging needs.
8-	2-9	9	2.2.5.3	Future Shipping Traffic	The final paragraph on page 2-9 discusses the pier protection project. However, a little more discussion of the project would be applicable here. Could pier placement impact the Shipping Operations discussion in Section 2.2.5.1 because the placement of the pier protection structures are along the sides of the channel?
9-	3-11, 3-22	50/61	3.2.1/3.3.1.2	Design Considerations	The entry into Mezick Pond was not addressed in the main study document. The Natural Environment Technical Report does a better job looking at potential impacts (especially natural), it is still believed that any preferred path may have direct impacts on larger sailboats' ability to utilize this boat launch. As one of the most popular launches in this region, the Maryland Park Service would like to minimize impacts, or preferably, have no impact or changes to the sizes/heights of boats utilizing this boat ramp. DNR would like the text to clarify that there will be no height restrictions to Mezick Pond with the new bridge design. Please state this in the text.
10-	3-24/ 4-62/ 4-92	63/165 / 195	3.3.5.1, 4.5.4.2/ 4.5.7.1	Methodology and Assumptions/ Water Quality/ Environmental Consequences	Would there be any potential for stormwater discharge treatment off the new bridge before it goes into the Bay?
11-	3-25	64	3.3.5.1	Methodology and Assumptions	The text at the top of the page references the 2000 Maryland Stormwater Design Manual, but the 2009 version is referenced on pdf page 165 (page 4-62) in section 4.5.4.2 under heading Minimization and Mitigation update. Update first stormwater manual reference to be consistent instead of sometimes referring to out-of-date manual.
12-	4-18	121	4.2.1.5	Environmental Consequences	It was reported in a recent meeting that there would be no DNR land impacted by Alternative C. Will the discussion in this section and the impact numbers in Table 4-10 be updated for Alt C and the other alternatives?
13-	4-68	171	4.5.5.1	Regulated Wetlands and Waterways	The project should be designed to maintain or enhance fish passage through the project area, particularly during low flow periods.
14-	4-69	172	4.5.5.2	Chesapeake Bay	The bottom paragraph on page 4-69 and text on 4-73 discusses hydrodynamics modelling.
15-	4-73	176	4.5.5.2	Chesapeake Bay	The last paragraph on page 4-73 lists some temporary impacts that will be of longer duration. Will demolition activities potentially have a long enough duration to be part of this list?
16-	4-74 to 4-75	177	4.5.5.2	Chesapeake Bay	The statement that the final design will have similar flow characteristics to the existing structures based on the hydrodynamic modeling is not supported by the Hydrodynamic Modeling Report (Appendix F) which estimates an increase in tidal velocities in the area of the shipping channel for the final design. The Hydrodynamic Model also did not model the to-be-built bridge protection measures which, if they remain in place, would be expected to further constrict tidal flow increasing tidal velocities. Will modelling be performed with consideration to the pier protection structures that will be installed? Additional information on how these structures will influence post-construction conditions seems to be needed.

17-	4-75	178	4.5.5.2	Chesapeake Bay	Please note that there are resources available to locate beneficial use opportunities for dredged material in local restoration projects. Please reference Beneficial Use of Dredged Material resources BUILD tool at: https://dgr.maryland.gov/ccs/Pages/beneficial-use.aspx or contact Maggie Cavey at maggie.cavey1@maryland.gov
18-	4-76	179	4.5.5.3	Maintained Navigational Channels and Civil Works Projects, Affected Environment	There are also channels that are not Federally maintained, and serve local communities, marinas, parks, and provide water access for small recreation and commercial vessels, including channels on Mill Creek, Whitehall Creek, Hackson Creek, at the Chesapeake Bay Bridge Marina, Mezick Pond access channel, and the Sandy Point Channel.
19-	4-78	181	4.5.5.3	Table 4-40	This table shows that Alternative C will cross the Mezick Pond waterway. Is this a temporary impact for construction or permanent? If so, please indicate the difference in the table. This is related to the previous Mezick pond comment.
20-	4-92	195	4.5.7.1	Table 4-44	The conversion of shallow water habitat to deep water habitat should be included in this table. It may lead to a change in species composition in those areas as noted in bulleted list on page 4-96, and the concept of converting the shallow to deep habitat should be addressed in the other parts of the section where appropriate.
21-	4-92/4-107	196/210	4.5.7.1/4.5.7.2	Environmental Consequences/ Blue Crabs and Horseshoe Crabs	Retention of as many sand beaches at the bases of the bridges as is practical would be beneficial to the Horseshoe crabs for spawning purposes.
22-	4-96	199	4.5.7.1	Aquatic Habitat	The top paragraph on this page notes that the dredged areas will be restored to their benthic contours. Will similar substrate be used for the restoration?
23-	4-96	199	4.5.7.1	Aquatic Habitat	DNR feels the report does not adequately describe impacts to commercial and recreational fishing and loss of income as it does for land-based businesses. We can expect significant impacts to both as the area of behavior disturbance associated with the construction encompasses a significant portion of the middle bay. Commercial impacts include blue crab pot fishery, commercial hook and line fishery for striped bass, oysters, winter drift net gill fishery (striped bass), charter fishing for striped bass. There may be others. We can use much more information on the blue crab fishery in Section 4- pages 4-97 through 4-99. The NETR Section 13.7 does a better job of describing this, and this text needs to be referenced.
24-	4-99 to 4-107	208-210	4.5.7.2	Aquatic Biota, Blue Crab sections	Similar to the comment above, the blue crab and associated fishery is not emphasized enough in this section. The NETR provides applicable information in Section 13.7 that should be summarized and referenced. Additionally the text on pages 4-99 and 4-107 that describe the blue crab habitat does not clearly state that they can be found in most shallow waters during the warm months. The wording used makes it seem like they would mostly be found in SAV areas, but they are common on shallow edges that don't have SAV as well. This section should also include overwintering habitat for crabs. The area around the bridge is important for commercial crabbing and this area will be impacted by dredging (page 4-74) and bridge construction.
25-	4-103 to 4-105	207-208	4.5.7.2	Aquatic Biota, Fish	Although the text on the bottom of page 4-103 does mention that noise impacts would affect all fish and not just Federally managed species, this section should be written in a manner that correlates noise effects to all the fish species in the area, not just EFH. The EFH designation doesn't cover other important species that heavily utilize the area, such as striped bass. It would also help if the figure noted what size piles each isopleth was designated for.
26-	4-113	216	4.5.7.3	Minimization and Mitigation	The second paragraph on the page states "The MDTA will determine in coordination with NOAA Fisheries whether is practicable to implement of ZSFP within the Chesapeake Bay during construction..." Please note that MDNR expects to be involved in this coordination.
27-	4-113-4-114	216-217	4.5.7.3	Minimization and Mitigation	Reword the sentence beginning with "The MDTA will commit.." on page 4-113 and the text on the bottom of page 4-114 to include a reference to all aquatic species so that its understood that the avoidance and minimization measures on these pages apply more broadly. The "Reduced water Quality" list should include managing temperatures and velocity of intake/ and discharge waters to maintain ambient water temperature and not to entrain fish.
28-	3-22	61	3.3.1.2	Adjacent to a Northern/Westbound Span	Western Shore, Connection #1 (not preferred) describes a short bridge over to the inlet to Mezick Pond prior to the switchback and Path users using Sandy Point SP to access the trail connections. It would be nice if a draft schematic of the permanent LOD were referenced to visualize the resources impacted. DNR is focusing here on Sandy Point SP and Mezick Pond impacts, and as previously stated DNR is strongly opposed to an SUP design that would impact SPSP or Mezick Pond in any way.
29-	3-22	61	3.3.1.3	Preferred SUP Location	In the final paragraph, the sentence "The connection into Sandy Point State Park was not preferred because it would bring all path users through the heart of the park and near the beach." Consider rephrasing this to include more facts, the suggest language would be something like, "The possible connection into Sandy Point State Park was not preferred because it would bring all path users through the heart of the park which requires the state park staff to manage those extra visitors outside of park hours, and it would impact the very popular beach and picnic areas, as well as restrict use of Mezick Pond including emergency boats and ice breaker boats if the new SUP not preferred design is built". Also, Sandy Point periodically reaches capacity and has periods of closure to new guests during peak summer weekends. Therefore using the Park to access a SUP would likely not be the best solution.
30-	4-38	141	4.5.1.1/ 4.5.7.2/ 4.5.7.3	Affected Environment	Injury and mortality associated with pile driving activities is the most concerning environmental impact to fisheries. The document states that intermittent pile driving is expected to occur for a total of 9 years with a 3 year gap between the east and westbound bridges. As with the most recent MDTA proposal to install Pier Protections around the current Bay Bridge span, DNR Fisheries will likely want a TOY restriction to allow migratory fish to pass by the Bay Bridge to reach spawning areas in the Upper Bay since anticipated behavioral impacts reach beyond the entire width of the bay at this location. Zone(s) of safe passage may also be warranted during non-migratory times of year. Further coordination regarding the appropriate time of year restriction for this work would be ongoing as the project design progresses.
31-	4-66	169	4.5.5.1	Environmental Consequences	Text states "For a more in-depth discussion of impacts to waterways, including impacts to culverted waterways and waterway crossings, see the Natural Environment Technical Report." Please provide a citation of the location in the in-depth discussion in the NETR.

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32-	4-89	102	4.5.7.2	Aquatic Biota	The report specifically identifies a number of different fish species, including alewife and blueback herring - but fails to list hickory shad or American shad. These should be added, as both species follow similar migratory patterns as herring as they migrate past the bay bridge to reach upstream spawning areas.
33-	4-101	204		Figure 4-27	DNR's Horseshoe crab habitat data (referenced in multiple locations) is incomplete and is being revised. Observations of horseshoe crab spawning are available on the Horseshoe Crab Sightings web map which can be found on the DNR Fishing and Boating Services Volunteer Angler Survey page, https://maryland.maps.arcgis.com/apps/webappviewer/index.html?id=391606d4a962405db2429779ff47e5d8 (index main page: https://dnr.maryland.gov/fisheries/Pages/survey/index.aspx)
34-	4-112	215	4.5.7.3	Minimization and Mitigation	Fish most likely to need a TOY restriction include American shad, hickory shad, alewife herring, blueback herring, striped bass, white perch, yellow perch, Atlantic sturgeon and shortnosed sturgeon. Further coordination regarding the appropriate time of year restriction for this work would be ongoing as the project design progresses.
35-	4-112	215	4.5.7.3	Minimization and Mitigation	Telemetry tagging of affected fish prior to construction could help bolster the population of detectable fish. Acoustic receivers could then be used to understand when these fish are in the construction area and determine when these populations are most vulnerable. Collecting this data could help guide time of year restrictions assigned to this long-term project.
36-	4-112		4.5.7.3	Minimization and Mitigation	Page 4-112 incorrectly lists the TOY restriction for anadromous fish. It's listed as February 15 through July 15, it should read June 15. However, data collected for the current Bay Bridge Pier Protection application shows high numbers of spawning aged striped bass in the vicinity of the Bay Bridge as early in the migration period as December. This is collaborated by the commercial winter gill-net fisher which spans December through February and accounts for roughly half of the commercial striped bass harvest by weight. The deep channel habitats south of the Bay Bridge are popular for this fishery. As a result, it may be necessary to modify the TOY restriction from January to May. The "standard" TOY restriction is better suited to protect fish while spawning in tidal rivers, but these fish often stage in deep water habitats in the bay much earlier. Further coordination regarding the appropriate time of year restriction for this work would be ongoing as the project design progresses.
37-	4-112	215	4.5.7.3	Minimization and Mitigation	There is also a concern for young of year fish staging and migrating out of the bay from summer through fall. These juvenile fish may be more susceptible to noise impacts, injury, and mortality than adult fish. Please contact DNR to obtain this data.
38-	4-112	215	4.5.7.3	Minimization and Mitigation	Shallow water dredging should not be performed during the period from 15 April through 15 October to minimize impacts to submerged aquatic vegetation, horseshoe crabs and oysters.
39-	4-119	222	4.5.8.1	Environmental Consequences	"Review of imagery reveals that much of this area would not meet the regulatory definition of forest; however, it would still function as terrestrial habitat". Please Provide the definition of forest being used.
40-	4-13	115	4.2.1.3	Protected Lands	The proposal mentions impacts to current Forest Conservation Act easements. The final alignment for the new bridge should provide a map for these areas. The proposal indicated that all alternatives will impact 0.1 acres of conserved easements. These easements can be moved, but need approval from the Maryland BPW. Alternative FCA easements should be identified and redesignated as needed. DNR must have a copy of the final FCA easement location. The project must verify the plan to move easements with the DNR Forestry's Urban and Community Forestry Section.
41-	4-129	232	4.5.9.1	Federally Listed Species	Northern Long-eared Bat (NLEB) refers to *Myotis septentrionalis*, state and federally listed as Endangered; Indiana Bat (IBAT) is *Myotis sodalis*, state and federally listed as Endangered; Tricolored Bat (TCB) is *Perimyotis subflavus*, federal proposed as Endangered, Maryland status S1 critically imperiled; Eastern Small-footed Bat (ESFB) is *Myotis leibii*, state listed as Endangered; and Little Brown Bat (LBB) is *Myotis lucifugus*, Maryland status S1 critically imperiled. These species have all been documented within their ranges to use bridges, culverts, trees, or buildings as roosts.
42-	4-129	232	4.5.9.1	Federally Listed Species	DNR WHS supports the survey work for bats that has been done so far, although the timing of the surveys was not the best for assessing presence. As stated in the DEIS, these surveys have a two-year shelf life, so this still allows for a second round of surveys to be completed before the project begins during more suitable time periods (see further information below under Natural Heritage Program recommendations). Note that page 4-129 of the DEIS states, "Due to a lack of evidence of bat roosting in both the Bay Bridge and Cox Creek bridge, it is probable that bats are not actively roosting in these bridges." Given the time of year that bat surveys were conducted, it is premature to draw this conclusion.
43-	4-129	232	4.5.9.1	Federally Listed Species	Please reference and see attached the Acceptable Management Practices for Bat Species Inhabiting Transportation Infrastructure (Attachment 3). For further questions regarding bat concerns, please contact Dana Limpert of our program at danal.limpert@maryland.gov.
44-	4-136	239	4.5.10	Unique and Sensitive Areas	The section 4.5.10 Unique and Sensitive Areas it isn't clear if the design proposals have considered the updated 2024 Habitat Connectivity Network (HCN) update. The HCN replaced the Green Infrastructure Assessment. The 2024 update leverages the Chesapeake Bay Program's cutting-edge, high-resolution 2017/2018 land use/land cover mapping and provides several additional enhancements, including differentiation of hub and corridor types (forest, wetland, or aquatic), a breakdown of land cover types within corridors, and identification of potentially restorable gaps within corridors. The updated Habitat Connectivity Network map layer can be viewed on the Maryland Green Print web map (https://mdgeodata.md.gov/greenprint/). The data layer can be downloaded from the Maryland iMap Data Catalog.

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45-	4-136	239	4.5.9.2	Minimization and Mitigation	Recent Information to Guide Future Survey Work for Bats • States in the Eastern US have found populations of NLEB (federally and state listed as Endangered) to be active year-round in the Coastal Plain bordering the Gulf of Mexico and along the Atlantic seaboard, including NC, VA, and NJ. • NLEB in these areas do not exhibit hibernation but torpor during the winter and will awaken to feed on insects and drink water when temperature and weather conditions are conducive for insect activity. • Coastal populations of NLEB select non-traditional roosts that include bridges, culverts, buildings, and trees. NLEBs and tBATs have been found using bridges and/or culverts throughout their ranges, as well as other species of conservation concern, such as TCB, LBB, and ESFB. • DNR WHS and Blackwater NWR staff are currently monitoring NLEB recorded on the Blackwater Wildlife Refuge year-round to document activity. The Coastal Plain of Maryland has not been well-surveyed for bats, and there is currently no data on active coastal populations outside of Blackwater. Future surveys for the Bay Crossing project should take this new information under consideration since this project occurs in the Coastal Plain and to avoid misconceptions of where bats could be during vulnerable periods.
46-	4-136	239	4.5.9.2	Minimization and Mitigation	Survey Site Selection Guidance A very useful document written by the White-nose Syndrome Conservation and Recovery Working Group is entitled Acceptable Management Practices for Bat Species Inhabiting Transportation Infrastructure. The document is a product of the White-nose Syndrome National Plan (www.whitenose.org). Section 2 of the document addresses misconceptions about bat use of transportation structures. • Misconception 1 | Bats require at least 3 m of vertical measurement to take flight. Therefore, the structure must be equal to or exceed 3 m to be suitable for bats. • Misconception 2 | Culverts are unsuitable due to the absence of crevices or perching substrate. • Misconception 3 | Culverts must be between 1.5 and 3 meters in height and ≥ 100 m in length. • Misconception 4 | Bats exhibit obvious signs of occupancy (e.g., bat vocalizations, guano and/or urine stains). • Misconception 5 | Bats require vertical crevices 12.7 to 31.75 mm wide and ≥ 304.8 mm in depth. • Misconception 6 | Bats only roost within bridges over water. • Misconception 7 | DOTs can safely conduct operations after October 1, when bats are absent. This interval coincides with autumnal migration and movements to local hibernacula. • Misconception 8 | Roosts must receive full sun exposure. • Misconception 9 | Bats will not roost over busy roadways (Erickson et al. 2002) • Misconception 10 | Bats do not occupy transportation structures within northern states because "few are warm enough to meet bat needs". Please contact DNR for this document and full citations.
47-	4-136	239	4.5.9.2	Minimization and Mitigation	The DNR WHS recommends the following: • Please consult USFWS and WHS in preparing survey plans and submit survey plans to both agencies in advance of survey work. • Please submit the results of all surveys, including surveys with negative results, to DNR WHS as well as USFWS. • WHS recommends that the next round of surveys be conducted when bats are the most vulnerable as presence would indicate the appropriate TOY to avoid take. The periods when bats are most vulnerable to disturbance that could result in take include during winter torpor, December 15-February 15, when winter mean temperatures fall below 40 degrees F, and during the maternity pup season, May 15 to July 31, when flightless young would be present. Surveys should include all structures with potential bat roosts. The Draft Biological Assessment (Appendix Q page 7-1) states that tree clearing will not occur during the active period, April 1 – September 30; therefore, acoustic surveys of forest habitat will not be necessary. • If signs of roosting bats are found, then a time of year restriction (TOY) would be applied to these vulnerable time periods. Excluding bats from using the structure while work is conducted in a particular section may be necessary under certain circumstances outside of the sensitive TOY periods. Further coordination regarding the appropriate time of year restriction for this work would be ongoing as the project design progresses.
48-	4-136	239	4.5.9.2	Minimization and Mitigation	After project completion, placing bat roosting structures under the bridge is optional as bats roosting in bridges and culverts indicate the lack of natural roosts. Endangered gray bats returned after bridge construction conducted outside of maternity pup season to roost under the bridge https://www.fws.gov/story/2022-06/roosting-structures-endangered-bats-installed-french-broad-river-bridges . Bridges can also be designed to create roosting crevices; that has been done in several states.
49-	8-1	282	8.1	Alternative C: Recommended Preferred Alternative	East College Parkway backs up during the summer months, although recent procedural adjustments by SHA and MDOT have helped keep drivers on Route 50. DNR MPS wants to be sure that the transition to eight lanes near Oceanic Drive actually improves that condition and does not shift additional congestion toward the entrance of Sandy Point State Park.
50-	8-5	286	8.1.2	Environmental Impacts	Based on updates about the project impacts presented in recent meetings and even more up to date design communicated by email, does the *de minimus* impact discussion in the second paragraph on this page need to be updated?
51-	9-36, 9-37/ 4-77	130, 131/ 161	9.3.3.2/4.5.5.3	Table 9-19/ Table 4-40	Same comment for NETR/DEIS: An X is marked denoting the waterway will be crossed for Mezick Pond Channel. DNR has communicated that no limits to Mezick Pond will be accepted. In the text below the table, the Local Channels subheading states the entrance of Mezick Pond would be directly impacted by the northern alignment build alternatives but there is an X in the table denoting all build alternatives would affect the navigation channels.

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Attachment 2: Maryland DNR comments to Technical Reports, as attached to Chesapeake Bay Crossing Study Tier 2 NEPA Draft Environmental Impact Statement, January 2026

	Technical report	Page #	Page # in .pdf	Section	Section Header	Comment
	ARDS Concurrence Package	4-1	8, 9	4.1	Structure Location	DNR has concerns that the new Bay Bridge pier protection design won't be coordinated with the new bridge design. Please make sure the 2 project teams work together.
	Hydrodynamic Report (Appendix F)					The response regarding the Hydrodynamic Report (Appendix F) was " The hydrodynamics report models the alternatives relative to the existing conditions. The hydrodynamics modeling focuses on long-term effects of the alternatives." Since the existing conditions will now include some form of Pier Protection measures at the current bridges, the effect of the protection structures to be built must be modeled because there will be a change to the "existing conditions" and conditions during construction. The hydrodynamic modeling showed a approximate doubling of tidal velocities from current conditions. It could be assumed that during construction of the new eastbound bridge the new bridge piers, the existing bridge piers and the bridge protection measures to be constructed will all combine to further restrict water movement through the bridge area which is also the narrowest part of the Bay. The presence of all these structures, at least until unneeded structures and old bridge piers are demolished, would be expected to increase tidal velocities above the values presented in the hydrodynamic modeling report. The final EIS should address the Pier Protection measures that will be constructed and their potential fate when the replacement bridges are constructed.
	Navigation Impact Report	2& 24	9& 30		2. & Conclusion	As per other comment for NETR/DEIS: An X is marked denoting the waterway will be crossed for Mezick Pond Channel. DNR has communicated that no limits to Mezick Pond will be accepted. Please revise if this impact was revised.
1-	NETR	8-4	72	8.1.2	Table 8-1	Many of the impervious surface estimates provided in Table 8-1 on page 8-4 of the Natural Environment Technical Report are low based on the calculation methodology used by the Fishing and Boating Service's Fisheries Ecosystem Assessment Division. Our estimates for the year 2024 in order of Table 8-1 are 30%, 31%, -, -, -, 13%,11%, 7%, 5%, 8%. Impervious surface estimates are available on the interactive Nontidal Anadromous Fish Spawning Sitemap: https://experience.arcgis.com/template/8b13df5918be4e288fb3439a2afc3153/ [Methodology is available in Uphoff, J. H., Jr., A. Park, C. Hoover, T. Fowler, S. Moorhead, M. Ponte, J.Horne, and M. Topolski. 2024. Marine and estuarine finfish ecological and habitat investigations. Performance Report for Federal Aid Grant F-63-R, Segment 14, 2023 Activities. Maryland Department of Natural Resources, Fishing and Boating Services, Annapolis, Maryland.]
2-	NETR	8-8	76			Page 8-8 paragraph one of the Natural Environment Technical Report states that MDTA will "ensure that all SWM and ESC requirements are met or exceeded to limit the potential for additional contaminants to be introduced to waterways." Requirements under COMAR 26.17.02 should be scrutinized to identify and incorporate the most effective techniques and scenarios where they should be exceeded.
3-	NETR	8-23	91	8.2.3.2	Environmental Consequences, Build Alternatives	Paragraph starting with "Winter maintenance materials,.." and ending with "Because of inherently higher salinity, conductivity, and chloride levels of the tidal waterways in the resource review area, additional impacts from de-icing chemicals would be less severe." Suggest finishing that final sentence with, "than if building in a freshwater zone." BUT this area is of low salinity and there are biota adapted to lower salinity and life cycles in lower salinity that would die in higher salinity. Salinity regimes can literally determine which species are present. SAV species and oyster spat come to mind, and mentioned in NETR page 13-33 is male blue crabs prefer fresher waters and female crabs prefer saltier waters. Higher salinity can also change the chances of viruses that kill off oysters. Adding salt, a conservative element, will cause it to stay in the system unless physically removed.
4-	NETR	8-23	91	8.2.3.3	Environmental Consequences, Build Alternatives	Higher salinity and higher temperature waters caused by expanding roadway lowers the ability of oxygen to dissolve in water, even when excepting eutrophication, this can cause larger volume of dead zone and less habitable ecosystems.
5-	NETR	8-25	93	8.3.3.2	Wild and Scenic Rivers, Environmental Consequences, Build Alternatives	Mention the term "viewshed" in the introduction section 8.3.1.

6-	NETR	9-16	110	9.1.3.2	Build Alternatives	Alternatives B and C seem to only impact three main waterways, Meredith Creek, Thompson Creek, and Cox Creek, and the Mezick Pond connection to the Chesapeake Bay. This seems like 4 waterways, because of the Mezick Pond's connection to the Chesapeake Bay. DNR has previously communicated that the Mezick Pond and inlet to the C. Bay cannot be impacted by the bridges or SUP.
7-	NETR	9-16	110	9.1.3.2	Build Alternatives	The text states that "The addition of a SUP option with any of the build alternatives would result in less than 0.1 acres of nontidal and tidal waterway impacts across all build alternatives". This is confusing to say <0.1 acres of impact when the report seems to state as different impact in other places.
8-	NETR	9-17	111		Table 9-13	The table shows that Alt C crosses or overlaps Mezick Pond 1 time. DNR has previously communicated that the Mezick Pond and inlet to the C. Bay cannot be impacted by the bridges or SUP.
9-	NETR	9-36	130	9.2.1	Local Channels	To state that Mezick Pond "currently provides local boating and access for recreation," seems like an understatement. The importance of this channel to public boating access should be stated.
10-	NETR	13-7	158		Figure 13-7	The preferred Alternative C reduces the land impacts within the watersheds and would likely have limited impact on areas of anadromous spawning due to road expansion. Among the greatest impacts overall will be subsurface noise during the installation of pilings, piers, supports, etc. on anadromous fish during their migratory run which passes through the project site and disturbance envelopes (Figure 13-7 in Natural Environment Technical Report).
11-	NETR	13-32	183			The impact of impervious surface on tidal and nontidal fishes, page 13-32 second paragraph of Natural Environment Technical Report, requires further analysis. Impervious surface, which encompasses many types of impact, is negatively related to successful reproduction of anadromous fishes and reduced species diversity. For example, increased road surfaces result in additional cold weather salt application and elevated conductivity in fresh water streams as well as an increase in automobile derived contaminants such as tire crumb and associated 6PPD-quinone; while this contaminant has not been studied in anadromous species that spawn in Chesapeake Bay, it does cause acute toxicity and mortality in some salmonid species. Spawning distribution of anadromous fishes can be viewed on the interactive Nontidal Anadromous Fish Spawning Site Map: https://experience.arcgis.com/template/8b13df5918be4e288fb3439a2afc3153/
12-	NETR & DEIS	9-36, 9-37/ 4-77	130-131/181	9.3.3.2/4.5.5.3	Table 9-19/ Table 4-40	Same comment for NETR/DEIS: An X is marked denoting the waterway will be crossed for Mezick Pond Channel. DNR has communicated that no restrictions or encroachment to Mezick Pond will be accepted. In the text below the table, the Local Channels subheading states the entrance of Mezick Pond would be directly impacted by the northern alignment build alternatives but there is an X in the table denoting all build alternatives would affect the navigation channels.
13-	NETR	9-37, 9-38	131, 132	9.3.3.2	Local Channels	Where is the Sandy Point Channel compared to the Mezick Pond Channel? I see Table 9-18 has a latitude & longitude mentioned for Sandy Point Channel, but please reference that in this text at a minimum because even we thought they were the same thing. The entrance of Mezick Pond is discussed as being temporarily impacted during construction and directly impacted by northern alignment build alternatives, which is confusing because Table 9-19 marks that each Build Alternative will be crossing Mezick Pond. Please clarify these 2 points and be consistent with wording. When someone cross-references with the Navigation Impact Report it also mentions Northern alignment Build Alternatives may impact vessel access (but not mentioning Southern alignment Build Alternatives). The Navigation Impact Report does not mention Sandy Point Channel.
	Socioeconomic and Land Use Technical Report & Cultural Resources Technical Report					Impact of bridge replacement on the commercial and recreational fishing sectors is not addressed in the Socioeconomic and Land Use Technical Report and should be emphasized in the NETR. These resources are a primary concern for DNR as it relates to the proposed project.

WHITE-NOSE SYNDROME RESPONSE TEAM

Acceptable Management Practices for Bat Species Inhabiting Transportation Infrastructure

April 2018

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Images by Justin Stevenson, RD Wildlife Management unless otherwise noted

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This document is a product of the multiagency White-nose Syndrome Conservation and Recovery Working Group, established by the White-nose Syndrome National Response Plan (A National Plan for Assisting States, Federal Agencies, and Tribes in Managing White-Nose Syndrome in Bats). Specifically, the White-nose Syndrome Conservation and Recovery Working Group identified the need for acceptable management practices to minimize negative impacts to local bat communities during operational activities at transportation infrastructure (e.g., bridges, culverts).

Although applicable to every bat species, these measures were developed specifically to protect those whose populations have declined significantly due to white-nose syndrome. As such, this document addresses concerns relative to bat occupancy, and outlines methods to minimize colony disturbance and the further expansion of this disease. Background information on the significance of, threats to, and biology and behavior of bats illustrate the context and justification for these standards.

For more information on WNS please visit http://whitenosesyndrome.org.

1 Introduction

Globally, bats are intrinsic to healthy ecosystems, community integrity and vital ecological processes. They provide valuable ecosystem services (e.g., insect suppression, pollination, seed dispersal), products and provisions (e.g., tequila, durian, sisal, cactus fruits), cultural benefits (e.g., educational, recreational, spiritual) and contribute considerably to mammalian diversity. Notwithstanding, bats confront multiple threats. Habitat destruction and modification, climate change, pesticides and pollution, disease and human development (e.g., wind turbine facilities, urbanization) cumulatively contribute to population level impacts. Additionally, roost availability and abundance are critical elements limiting chiropteran populations. As the availability and abundance of natural roosts decline, manmade infrastructure (e.g., mines, buildings, bridges, culverts) become incalculable substitutes. Highway structures function as comparatively permanent, alternative roosts (e.g., diurnal roosts, nocturnal roosts, maternity roosts) and stepping-stone refugia (i.e., transitory roosts) for migratory populations. These anthropogenic structures proffer physical and thermal characteristics reminiscent of natural cavities (e.g., stable microclimatic conditions, predator protection) and proximity to elemental resources (i.e., water, optimal foraging sites).

State Departments of Transportation (DOTs) are increasingly incorporating environmental compliance, sustainability and stewardship within transportation planning, project development, construction, maintenance and operations. Furthermore, the exigency for environmental stewardship practices, procedures and policies echoes public concern for environmental integrity, habitat connectivity and biological conservation. Today, transportation authorities' mission espouses the larger societal objective of environmental excellence and sustainable transportation (American Society of State Highway and Transportation Officials 2016). As such, consideration to wildlife movements (e.g., mammal collision mitigation measures), ecosystem impacts (e.g., establishment of replacement wetlands and habitat enhancement) and phenological timetables (e.g., stream crossings and fish spawning, bird incubation periods) are increasingly at the forefront of transportation planning. Moreover, numerous states have become environmental champions, actively engineering and retrofitting highway structures to accommodate bat colonies (http://environment.transportation.org).

Forty-seven microchiropteran species of 20 genera and three families populate the United States (Loeb et al. 2015). Of those species, 61.7 percent (29) and potentially 87.2 percent (41) exploit manmade transportation infrastructure (See Table 1); however, 100% may be vulnerable to activities that encompass a larger footprint. North America's transportation system encompasses ca. 13 million structures (i.e., > 6 m bridges, box culverts, drainage structures) that equate to approximately one construction per quarter mile (400 m). With potentially millions of linear "bat-friendly" footage, DOTs inadvertently provide thousands of artificial roosts per state, supporting an inestimable number of bats. Given the magnitude of present-day threats (e.g., white-nose syndrome, turbine collisions) and concomitant population declines, it has become increasingly important to minimize ancillary sources of mortality.

Operational activities that adversely affect bats primarily include roost destruction, modification of habitats and direct disturbance during critical life phases (i.e., maternity and weaning periods, hibernation). Even those projects with uncomplicated scopes (e.g., pavement rehabilitation and reconstruction, bridge deck replacement, guardrail and fencing installation, timber treatment) and

minimal environmental impacts may cause disturbance to resident colonies (Bat Conservation Trust 2007, Hinde 2008).

The interdisciplinary relationship between transportation ecology and bat ecology is an emerging and continually evolving field of study. Definitively identifying and addressing potential interactions necessitates a landscape-level, holistic strategy that contemplates the 'zone of influence' (ZoI, the areas/resources that may be affected by the biophysical changes caused by activities associated with a project; Bat Conservation Trust 2007). This document addresses one elemental component of the ZoI – individuals at the 'epicenter of impact.' Through structure-focused AMPs, we endeavor to provide informative, achievable guiding principles and concepts to identify bat presence/absence and thereby minimize potential impacts.

> Please become familiar with your state's endemic bat species and their respective maternity seasons, which vary by species and region. Contact your state wildlife agency to identify specific details about time-of-year restrictions, regulations, sensitive species (i.e., T&E species, state species of concern) statutes and/or requisite permits. Please note, the standards within this document may not be sufficient to eliminate, minimize, or mitigate impacts to bat species.

2.Structure Specific Misconceptions

The publication 'Bats in American Bridges' (Keeley and Tuttle 1999) remains the authoritative work for bats and transportation structures. Although this document provides an incredible wealth of information, people inaccurately consider their "ideal" characteristics as categorical requirements. This can precipitate misconceptions and erroneously influence surveyors or consultants and therefore, cause oversights with respect to bat occupancy. Bats exhibit considerable plasticity, both within and between species. Therefore, implementing a "one size fits all" approach to 29, and potentially 41, different bat species may effect devastating consequences.

"While there are clear similarities among the different bat species, it is important not to generalize about them. What is possible for one bat species is impossible for another. In taking protective measures and undertaking construction planning it is generally advisable to take into account the most discriminating bat species" (Limpens et al. 2005).

Misconception 1 | Bats require at least 3 m of vertical measurement to take flight. Therefore, the structure must be equal to or exceed 3 m to be suitable for bats.

Although structures < 3 m may not be preferable, to dismiss these roosts would be imprudent and irresponsible. Bats commonly occupy the warmest 'end chambers' – terminal spans that typically occur over land, proximate to abutments. Sloping riverbanks and/or the application of fill to stabilize bridge supports often cause end chambers to be closer to the ground than center chambers, and occupied chambers occasionally are < 2 m above ground. Suitable roosts within crevices and drainage pipes may be 2.28 m, with pipe entrances 1.20 – 2.59 m above ground (Smith and Stevenson 2013b). Furthermore, high occupancy rates may force bats to roost at substandard heights (e.g., .45 m from ground to roost entrance; personal communication, September 10, 2011).

Misconception 2 | Culverts are unsuitable due to the absence of crevices or perching substrate.

Boulay and Noggins (1999) state that, "we excluded culverts because we considered them unsuitable for roosting due to a lack of crevices or perching substrate." However, culverts indisputably provide habitat for diurnal roosting species (*Corynorhinus rafinesquii*, Lance et al. 2001, Bennett et al. 2008;

Table 1. American bat species and their likelihood of occupancy with respect to transportation structures (i.e., bridges, culverts), summarized from Phillips and Jones 1971, Keeley and Tuttle 1999, MacGregor and Kiser 1999, Kunz and Reynolds 2003 and Hendricks et al. 2004.

Species	Chance of occupancy	Susceptible to WNS
Antrozous pallidus, pallid bat	yes	
Artibeus jamaicensis, Jamaican fruit-eating bat	yes	
Choeronycteris mexicana, Mexican long-tongued bat	yes	
Corynorhinus rafinesquii, Rafinesque's big-eared bat	yes	
Corynorhinus townsendii, Townsend's big-eared bat	yes	
Eptesicus fuscus, big brown bat	yes	yes
Euderma maculatum, spotted bat	probable	
Eumops floridanus, Florida bonneted bat	proba	
Eumops underwoodii, Underwood's bonneted bat	probable	
Idionycteris phyllotis, Allen's big-eared bat	probable	
Lasionycteris noctivagans, silver-haired bat	yes	
Lasiurus blossevillii, western red bat		
Lasiurus borealis, eastern red bat		
Lasiurus cinereus, hoary bat	yes	
Lasiurus ega, southern yellow bat		
Lasiurus intermedius, northern yellow bat		
Lasiurus seminolus, seminole bat		
Lasiurus xanthinus, western yellow bat		
Leptonycteris nivalis, Mexican long-nosed bat	probable	
Leptonycteris yerbabuenae, lesser long-nosed bat	yes	
Macrotus californicus, California leaf-nosed bat	yes	
Molossus molossus, Pallas' mastiff bat	probable	
Mormoops megalophylla, Peter's ghost-faced bat	probable	
Myotis auriculus, southwestern myotis	probable	
Myotis austroriparius, southeastern myotis	yes	
Myotis californicus, California myotis	yes	
Myotis ciliolabrum, western small-footed myotis	yes	
Myotis evotis, long-eared myotis	yes	
Myotis grisescens, gray myotis	yes	yes
Myotis keenii, Keen's myotis	proba	
Myotis lucifugus, little brown myotis	yes	yes
Myotis melanorhinus, dark-nosed small-footed myotis	probable	
Myotis occultus, Arizona myotis	yes	
Myotis septentrionalis, northern myotis	yes	yes
Myotis sodalis, Indiana myotis	yes	yes
Myotis thysanodes, fringed myotis	yes	
Myotis velifer, cave myotis	yes	
Myotis volans, long-legged myotis	yes	
Myotis yumanensis, Yuma myotis	yes	
Nycticeius humeralis, evening bat	yes	
Nyctinomops femorosaccus, pocketed free-tailed bat	probable	
Nyctinomops macrotis, big free-tailed bat	yes	
Parastrellus hesperus, canyon bat, western pipistrelle	yes	
Perimyotis subflavus, tri-colored bat	yes	yes
Tadarida brasiliensis, Mexican free-tailed bat	yes	

Myotis austroriparius, *M. grisescens*, *M. leibii*, *M. septentrionalis* and *M. sodalis*, Ellison et al. 2003; *Perimyotis subflavus*, Sandel et al. 2001). An opportunistic examination of culverts within Socorro County, New Mexico suggests high occupancy rates (71.4-100%), comparable to similar preliminary studies, which document occupancy rates of 53.3% to 85% (Smith and Stevenson 2016; Walker et al. 1996, Boonman 2011). *Corynorhinus townsendii*, a State of New Mexico Species of Greatest Conservation Need (SGCN) was commonly present, exhibiting occupancy rates of 77.7%. Multiple species, including *C. townsendii*, were present October-January and across the United States, several publications document culvert use November - March (Benson 1947; Cel'uch and Ševčík 2008; Martin et al. 2005, 2011; Sandel et al. 2001; Smith and Stevenson 2013a, 2016; Walker et al. 1996).

Misconception 3 | Culverts must be between 1.5 and 3 meters in height and ≥ 100 m in length.

Documentations of suitable culverts include lengths of 10 – 19 m, widths of 1.0 – 1.5 m and heights of 1 – 4 m above ground or water. An evaluation of 44 culverts by Boonman (2011) determines lowest height and cross-sectional area amenable to bats are 0.4 m and 1.2 m^2, respectively. An opportunistic examination of four culverts by Bender et al. (2010) reports occupied culverts less than one-third the length of previously documented culvert roosts. They conclude that "researchers conducting structure surveys based on previously published data would overlook these smaller culverts or characterize them as unsuitable roosting habitat based on their less than 'ideal' characteristics." A preliminary survey of 15 box culverts along Interstate Highway 45, southeast Texas documents *Myotis austroriparius*, *Perimyotis subflavus* and *Eptesicus fuscus* (Walker et al. 1996). Culverts vary from 60-120 m length, 1.2 – 2.2 m height and 1.2-1.8 m width, commonly with standing water and entranceway vegetation. The IUCN near threatened species, *Choeronycteris mexicana*, has been found roosting within 45 – 61 cm wide corrugated metal culverts (Keeley and Tuttle 1999). In New Mexico, Smith and Stevenson (2016) document minimum culvert heights of 0.6 m and .93 m for *Myotis* and *Corynorhinus townsendii*, respectively.

Misconception 4 | Bats exhibit obvious signs of occupancy (e.g., bat vocalizations, guano and/or urine stains).

Bats commonly roost between narrow spaces above bridge beams, above or behind intact expansion or insulation boards, within concrete spalls, pipe collars and similar crevices whose openings are not oriented towards the ground, where guano accumulation is evident.
Bats possess a complex, diverse repertoire of social vocalizations. However, roosting bats may display minimal movements and vocalizations.

Misconception 5 | Bats require vertical crevices 12.7 to 31.75 mm wide and ≥ 304.8 mm in depth.

Bats exhibit incredible plasticity with respect to amenable roost types and will exploit uncommon structures including concrete spalls; space above insulation boards; between guardrail posts and beams; between concrete piers and corrugated metal; within insulated pipes, swallow nests, wasps' nests, drainage pipes, recessed lighting housings and road signage.

Misconception 6 | Bats only roost within bridges over water.

For most species, a dramatic correlation exists between colony location and distance to water; riparian areas are often highly profitable foraging territories for insectivorous bats. Proximity to water may constitute minimum habitat characteristics for some species; however, flight enables bats to access widely distributed resources. For example, *Tadarida brasiliensis* may travel 40-50 km between day roost and foraging habitat. While proximity to water certainly increases habitat suitability, its presence or lack thereof does not determine occupancy.

Misconception 7 | DOTs can safely conduct operations after October 1, when bats are absent. This interval coincides with autumnal migration and movements to local hibernacula.

In temperate North America, colder months signify lower ambient temperatures and the concomitant

reduction of insect prey. To circumvent this 'energetic bottleneck', migratory species relocate to warmer environments, whereas other species hibernate and remain relatively inactive. Some species exhibit intraspecific plasticity relative to winter activity patterns, which vary from sustained hibernation to intermittent dormancy. In the southern United States, many non-migratory species are active year-round, even at low ambient temperatures (-8 – 22 C). The potential for overwintering or hibernating bats necessitates a survey to determine presence between October – March.

Misconception 8 | Roosts must receive full sun exposure.

A recent study (Smith and Stevenson 2013b) supports the contention that small heterothermic (i.e., employ daily torpor) bats occupy relatively wide temperature ranges, and are opportunistic relative to roost structures and conditions. Additionally, their results illustrate that, for reproductive females; thermal stability, rather than high temperatures, determine roost selection. As such, wildland bats choose natural tree cavities that exhibit minimal variation compared to ambient conditions. However, when temperatures are low (March-April), bats may roost within cavities exposed to direct sunlight, which imparts the opportunity to maintain body temperature passively.

Misconception 9 | Bats will not roost over busy roadways (Erickson et al. 2002)

One of New Mexico's most significant bridge populations spans the exit-ramp off Interstate Highway 25 (personal communication, n.d.). Although busy roadways may not be preferable, to dismiss these roosts would be imprudent and irresponsible.

Misconception 10 | Bats do not occupy transportation structures within northern states because "few are warm enough to meet bat needs.

Since the publication of 'Bats in American Bridges' (Keeley and Tuttle 1999), more than 47.8 percent of 23 northern states and three Canadian provinces have documented bridge specific bat colonies. At least two earlier publications, Bailey (1926) and Mumford and Cope (1958), provide occupancy reports from the northern states of Montana and Indiana, respectively. Furthermore, an inspection of 130 south-central Montana highway structures determined 60 percent occupancy rates – a frequency "as high or higher than in many surveyed regions farther south (Kurtz and Hendricks 2006).

3. Health and Safety Recommendation

3.1 Occupational Safety and Health

Bat surveys can be arduous, involve challenging locations, severe time schedules, extensive travel and many potential hazards. These risks must be adequately considered and accounted for during survey planning. High risk sites include construction sites, enclosed spaces, remote locations, sites with criminal activities and/or hostile residents. Transportation structures may traverse or parallel watercourses, roads or railway lines, which increase hazard potential. Surveyors should be trained in safe working practices including tackling steep ground, climbing on ladders, and water safety (assessing water flow, depth and currents) and in the use of equipment such as waders, lifejackets/ buoyancy aids, ladders and fiberscopes/borescopes.

Please employ appropriate caution and equipment to minimize safety risk. Guidance on safety and risk management-related issues can be found @ https://www.osha.gov/index.html.

3.1.1 Speciality Training

The following locations require advanced knowledge and use of specialist equipment. Specialist training courses or permits may be applicable.

Confined Spaces

Confined spaces have limited or restricted means for entry or exit and are not designed

for continuous occupancy. Please consult the OSHA Standard for Confined Spaces.

At Height

Work at height means work in any place where, if there were no precautions in place, a person could fall a distance liable to cause personal injury. Take a sensible approach when considering precautions for work at height. Before working at height, consider these simple steps; avoid work at height where it is reasonably practicable to do so; where work at height cannot be avoided, prevent falls using the right type of equipment; and minimize the distance and consequences of a fall by using the right type of equipment where the risk cannot be eliminated. Please review OSHA Fall Protection Standards and Resources.

3.2 Zoonoses

3.2.1 Rabies

Individuals without experience and applicable permits should *not* capture or handle bats. This will eliminate the potential exposure and opportunity for rabies transmission.

3.2.2 Histoplasmosis

Bird and bat guano are classic reservoirs for *Histoplasma capsulatum*, the fungus that causes histoplasmosis, a systemic infection primarily of the respiratory tract. Outbreaks have been associated with demolition and earth-moving activities that aerosolize topsoil and dust (e.g., bridge reconstruction and demolition, jack- and air- hammering, waste disposal). Employees should wear personal protective equipment and employ dust-suppression techniques when working in areas potentially contaminated with bird and/or bat droppings (Huhn et al. 2005).

4. Decontamination Measures for White-nose Syndrome

WNS affects cave hibernating bats throughout eastern North America and adjacent Canada. This fatal disease continues to cause mass mortality and precipitous population declines. Previously common species throughout the northeastern United States are presently at risk of regional extirpation or extinction due to white-nose syndrome. "WNS has led to unprecedented mortality in several species of bats and may threaten more than 15 additional hibernating bat species if it continues across the continent" (Flory et al. 2012).

Pseudogymnoascus destructans, the causative agent of WNS, thrives at temperatures of 3-15 °C and > 90% relative humidity, conditions equivalent to bat hibernacula and bodies of hibernating bats. *P. destructans* affects bats by increasing the frequency and duration of arousals from hibernation.

Throughout the hibernation period, brief arousals to warm (euthermic) body temperatures are normal, but deplete fat stores. Typical arousal episodes span minutes or hours, with more frequent or lengthier arousal periods incurring significant energetic costs. Therefore, atypical arousal patterns due to white-nose syndrome prematurely deplete fat reserves crucial to overwinter survival. Additional WNS information available at http://www.whitenosesyndrome.org.

4.1 Decontamination Protocol

When activities involve close or direct contact with bats, their environments, and/or accompanying equipment and materials, please comply with decontamination protocols. Acceptable treatment options and supplemental information are available from http://www.whitenosesyndrome.org.

5. Evaluative Surveys

> "Perhaps more so than for any other wildlife issue, the potential effect on bats is independent of the scale of the operation concerned. Very small structures can be important to large populations of bats or to species of critical conservation importance. **All highway projects should take account of the potential presence of bats**" (Hinde 2008).

Any construction, improvement or maintenance project can directly and/or indirectly impact bats via habitat destruction and fragmentation (i.e., loss or severance of traditional travel routes), landscape modification (i.e., influencing the suitability of roosting, commuting and foraging habitat), disturbance, and alteration of environmental conditions. Thus, transportation authorities should consider bats as part of the environmental assessment of any construction, improvement or maintenance project, regardless of scale (Hinde 2008).

Landscape features (e.g., trees, vegetation, caves; commuting and foraging habitat) outside the existing structure are beyond the scope of this document. Please visit http://bati.institute for more information.

Surveys permits individuals to garner site-specific information by which to assess potential impacts and develop recommendations. Surveys are typically time-bound, once-only projects, although surveys may involve multiple visits or observations. These surveys are distinguishable from monitoring, which involves repeated sampling, either year-on-year or periodically, to evaluate whether a particular objective or standard has been attained (Bat Conservation Trust 2007).

Bat surveys should be undertaken at the appropriate time of year to collate the information required (e.g., summer surveys to detect maternity roosts, winter surveys to detect hibernating bats).

To ensure reliability, several visits across biological seasons should occur (i.e., minimum of 2-3 times per year). While bats are active throughout the night, peak activity occurs at dusk and before dawn; and surveyors should address bat activity during these time frames to provide comprehensive information of site utilization. The most effective detector survey period is June – August, which will provide information on maternity roosts. Earlier studies (April and May) and later studies (September) will yield information on alternative roosts (National Roads Authority 2006). Mist netting to capture and identify local bat species that may or may not be identifiable with bat detectors may be appropriate in certain circumstances (i.e., where detailed information on specific species is required, or where species of concern or high conservation value may occur). In enclosed areas (e.g., bridges), harp-trapping may be employed to confirm the presence of species. (Please review Section 5.3 Survey Methodologies).

5.1 Surveyor Qualifications and Considerations

In the United States, there are no coincident standards nor specific qualifications to perform bat surveys. However, the assessment of bat presence requires expertise, experience and objectivity. "It is comparatively easy to determine use of a site by bats, but absence is more difficult to prove. It requires greater effort to demonstrate beyond reasonable doubt that bats are not present or likely to be present (Bat Conservation Trust 2007)."

Surveyors must be mindful and respectful, to prevent roost abandonment and accidental injury to or mortality of bats. Additionally, the surveyor must be competent in identifying bats (may require capture and handling to determine/confirm species) and their respective habitat.

To independently and competently conduct professional bat surveys, an individual should possess the following (Bat Conservation Trust 2012):

Expertise

- species status, distribution, and conservation threats

7

- annual biological cycle and life history characteristics
- species-specific and seasonal requirements of roosts and the various natural features and anthropogenic structures available as roosts
- variety of available survey techniques, their appropriate application and limitations
- seasonality and conditions and their influence on surveys
- health and safety issues (e.g., unsafe structures, working at night)
- techniques to avoid and minimize negative impacts

Experience

- ability to identify sign(s), locate roosts and indicate probable species and roost type (e.g., maternity roost, night roost)
- ability to quantify potential impact(s) and deliver site- and species-specific recommendations for mitigation
- ability to capture, handle and/or transport individual bat(s) humanely and proficiently
- identify individual species and confidently age, sex and assess reproductive status
- communicate information and recommendations clearly and concisely

5.2 Basic Survey

An exploratory survey to establish presence/absence, assess probability or severity of impact(s), and acquire information to recommend mitigation and/or compensation measures may include;

General information

- date,
- surveyor name(s),
- site description (i.e., descriptive information and coordinates),
- proposed activity (e.g., construction, demolition, repair, maintenance),
- direct evidence of current or prior occupancy (e.g., guano, carcasses, cobweb-free entrances to voids, scratches, urine stains),
- species present,
- roost information including type (e.g., diurnal, nocturnal, maternity, hibernaculum), location, characteristics (e.g., crevice, swallow nest, drainpipe),
- intensity (e.g., number of bats, time and duration of use),
- roost substrate and dimensions,
- surrounding habitat (e.g., residential, agricultural, woodland), and
- conditions beneath roost (e.g., bare ground, railroad, watercourse, 4-lane highway).

Photographs are invaluable to conveying both structure-specific details and evidence of occupancy. It is recommended that photographs are taken to support written documentation. Please be mindful and responsible when photographing bats.

Built structure information

- structure design (e.g., type, number of spans, height),
- structure material (e.g., concrete, metal, timber), and
- location and description of current, prior or potential roost sites.

Advanced surveys are beyond the scope of this document. Additional information and resources including progressive techniques and methodologies are available at http://www.bati.institute/best-management-practices/.

5.3 Survey Methodologies

Methods may typically involve one or more of the following:

5.3.1 Non-invasive

5.3.1.1 Visual

Bats may use transportation structures at any time of the year and timing of work must take into account bat activity at each site. It is not unusual for several bat species to use different parts of the same structure.

Structures often conceal bats within features not visible from the ground.

Bridges

Systematically search for direct evidence of occupancy. Inspect key features and locations likely to support bats.

Roost locations may include:

- open beams,
- structural fissures (e.g., cracked or spalled concrete, damaged or split beams, split or damaged timber railings),
- crevices (e.g., expansion joints, space between parallel beams, spaces above supports piers, space between adjacent concrete parapets/guardrails),
- alternative structures (e.g., drainage pipes, bolt cavities, open sections between support beams), and
- nests. When abandoned or unoccupied, nests provide ancillary roost habitat for bats worldwide. Occupancy rates can approach 39 percent (Jackson et al 1982). Bats that exploit *Hirundo rustica* (barn swallow) nests lay nearly prostrate within the nest cup and those within *Petrochelidon pyrrhonota* (cliff swallow) nests (gourd-shaped enclosed structures) are typically concealed and undetectable without a borescope or fiberscope.

Culverts

In opposition to bridges, which frequently have structurally-integral locations amenable to bats (e.g., drainage pipes, expansion joints), roosting locations within culverts predominantly overlay structural defects. Conducting routine maintenance (e.g., concrete patches, epoxy joint patch seals), without an appropriate, preliminary survey, can easily entomb or kill bats.

Roost locations may include;

- walls,
- structural fissures,
- transition points between culvert sections (e.g., where a concrete culvert transitions to a metal culvert, where a box culvert transitions to a circular culvert),
- alternative structures (e.g., drainage pipes), and
- nests, particularly *Hirundo rustica* and *Petrochelidon pyrrhonota* nests.

5.3.1.2 Emergence and Re-entry Surveys

Where potential presence is high, but cannot be confirmed, surveyors can perform dusk emergence and/or dawn re-entry surveys. Emergence and re-entry surveys can provide additional information (e.g., number of bats, species, flight paths to and from roost) to help determine the importance of an identified roost and potential significance of any impacts. Emergence surveys should commence > 15 minutes before sunset and continue for two hours after sunset

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(Bat Conservation Trust 2007).
Dawn re-entry surveys can help detect summer roosts, particularly those of species who form small colonies, emerge late or are difficult to identify with bat detectors. Emergence and re-entry surveys should occur when bats are most active (April – September).
Dawn re-entry surveys of maternity roosts are oftentimes most successful July – August when re-entry attempts by newly volant juveniles are both obvious and of extended duration. These surveys should commence > 90 minutes before sunrise, as *Myotis* spp. typically return to roost sites earlier than other species.

5.3.1.3 Acoustic Surveys (active and passive)

Passive acoustic monitoring can identify periods and locations of peak activity levels. Automated activity surveys are non-intrusive and can help determine bat activity over lengthy time intervals; particularly winter (November – February), when bat activity is irregular. For winter activity, a minimum of two, two-week surveys sessions are recommended, one of which should occur between December and February (Bat Conservation Trust 2007). Various exogenous and endogenous factors influence activity patterns, which can further vary by habitat, season, species and locality (e.g., cool temperatures and precipitation typically suppress bat activity).

In more exceptional cases it may also be appropriate to use the more invasive survey techniques described below. Surveyors should employ non-invasive survey methodologies first and foremost. **The decision to employ invasive techniques may occur only where essential information cannot be acquired with less intrusive methods and must consider bat welfare and time-of-year vulnerability.**

5.3.2 Invasive

- capture (i.e., hand nets, mist nets and harp traps)

Capturing bats via netting and harp traps can provide valuable information relative to species identification, sex determination and breeding status.

Nonetheless, these techniques are invasive and warrant careful consideration. The minimum number of visits necessary to obtain the appropriate information will be situation and objective-dependent. **Please prioritize animal welfare. If any method of capture causes, or appears to cause, distress or harm, please cease activities immediately and solicit further advice.**

Time surveys to minimize the potential capture of parturient or lactating females; heavily pregnant bats may give birth or abort their fetus while captive (Finnemore and Richardson 2004). Please become familiar with your state's endemic bat species and their respective maternity seasons, which vary by species and region. Conservatively, refrain from conducting capture surveys from late May to mid-July, unless exceptional, and justifiable, circumstances exist.

These aforementioned methods should only be undertaken by specialist surveyors with prior demonstrable experience.

5.4 Appropriate Time Schedules

Chiropteran ecology and ethology influence both timings of surveys and therefore, operational activities (See Figure 1 for an overview of the bats' annual cycle). Bats exhibit considerable diversity and plasticity – both within and between species. Consequently, the annual cycle

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Figure 1. Overview of bats' annual life cycle. Yellow represents 'Caution,' bats may be vulnerable depending on species and geographical location; red indicates 'Stop,' bats are exceptionally vulnerable to disturbance.

may vary. These biological milestones can further vary geographically; thus, optimal timings must develop from practical experience and familiarity with local species. All bat surveys should be undertaken at the appropriate time of year to collate the information required (e.g., summer surveys to detect maternity roosts and winter surveys to detect hibernating bats).

5.5 Assessment

An evaluation of survey results and supplemental information are necessary to assess the importance of existing habitats/features and the magnitude of foreseeable impacts (e.g., disturbance, mortality). Assessments should include relative impact(s), their influence on the integrity and conservation status of relevant bat communities and recommendations for mitigation measures.

5.5.1 Disturbance

Installation of temporary or permanent lighting can introduce barriers to movement, sever foraging areas, discourage emergence or precipitate roost abandonment. Roost adjacent lighting may modify microclimatic conditions (i.e., humidity or temperature) or cause disturbance, which may precipitate roost abandonment. Similarly, maintenance projects can potentially disturb roosting bats via employment of inappropriate methodologies or materials, or modification of roost parameters.

5.5.2 Mortality

Mortality may occur from reactive behavior, traffic differences, or accidental roost destruction. Some species may continue to follow severed commuting routes, endangering those individuals that traverse roadways. Anecdotal observations (Bickmore et al. 2003 as cited in \\\

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Hinde 2008) indicate that "air turbulence caused by fast and large road traffic can suck nearby bats into the path of oncoming vehicles." Traffic inflation, resulting from improvements or new construction, may cause significant mortality, particularly when adjacent to nursery roost(s), with inexperienced juveniles most vulnerable. Mortality rates increase during July and August, coincident with the occurrence of volant young; and late September – early October, which may correlate to mating and autumnal migration (Gaisler et al. 2009, Lesiński et al. 2011, Medinas et al. 2012).

5.6 Documentation

An assessment report should include,

- information from collective survey(s) including existing roosts, species present, et cetera and their relative importance;
- the potential effects of the relevant operational activity;
- recommendations for mitigation and an explanation and/or justification for selecting these recommendations;
- recommendations to prevent, reduce and as fully as possible offset any significant adverse effects; and
- monitoring methods and protocols, if applicable.

6 Mitigation Measures

This section provides mitigation measures by which to avoid, minimize and if possible, remedy adverse effects. Where elimination of adverse effects is not possible, measures can be implemented to alleviate the severity of impacts. Species differ relative to sensitivity and exploitation (e.g., roost choice, travel corridors, flight heights, foraging strategy) of the landscape. Therefore, any mitigation measures should endeavor to accommodate the species with the most sensitive requirements or conservation status. Mitigation measures must be project-specific, and proportionate to the importance of population(s) and scale of potential impacts.

6.1 Avoidance

Avoid disturbing sites while bats are present whenever possible. Avoid permanently destroying/altering bat roosts whenever possible. Avoidance of an area, structure, or site with bat presence remains the best mitigation measure for the protection of bats. Many roosts are seasonal and therefore, operational activities may occur within the period when bats are absent.

Optimum season for operational activities for different roost types are as follows:

- for maternity and nursery roosts, conduct activities 1 October to 1 May
- for summer roosts, conduct activities 1 September to 1 May
- for hibernacula, conduct activities 1 May to 1 October
- for swarming / mating sites, conduct activities 1 November to 1 August

Please become familiar with your state's endemic bat species and their specific biological seasons, which vary geographically.

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6.2 Minimization

6.2.1 Appropriate Time Schedules

Bennett et al. (2008) recommend an inspection interval of 3-5 times annually to determine use. Lengthy time intervals between biological investigations and operational activities increase the probability of occupancy; and therefore, the unreliability of those evaluations.
Maternity colonies form from April onwards and remain relatively cohesive through mid- to late August. Young, born May-July, are non-volant (i.e., not capable of flight or evasive action, wholly dependent on mothers) for several weeks and thus, are extremely vulnerable to disturbance by human activities (e.g., restoration, reinforcement or demolition of structures).
Please become familiar with your state's endemic bat species and their respective maternity seasons, which vary by species and region. Contact your state wildlife agency to learn specific details about time-of-year restrictions, regulations, sensitive species (T & E species, state species of concern) statutes and/or requisite permits. Please note, the minimum standards provided here may not be sufficient to avoid, minimize, or mitigate impacts to listed bat species.

6.2.1.1 Wildlife Exclusion

Specific mitigation measures to exclude must be in situ prior to demolition or maintenance activities.

If applicable, exclusion may occur September - March. Exclusion should not occur April – August when bats are exceptionally vulnerable to disturbance. If hibernating bats are present, exclusion can not occur late November – early March.

Any exclusion product can cause disturbance, harm or fatality if improperly installed. It is the responsibility of the hiring agency to ensure anyone performing these activities can conduct exclusion activities, including eviction, appropriately and humanely.

Please respect wildlife. Do not poison, pressure wash, trap, relocate, or in any other manner harm, harass or kill bats. These are ineffective, unnecessary techniques, potentially illegal, and do not comply with acceptable standards.

6.2.1.2 Maintenance

Maintenance activities include, but are not limited to, cleaning, preventative maintenance to preserve and lengthen service life, technical and specialized repairs and stream channel maintenance. These activities may involve the operation of support vehicles and equipment, pavement repair, welding and grinding operations, and associated pollutants, which may impact nearby bat colonies.

Minor maintenance activities typically have minor or no impact on bats. However, more substantial maintenance operations, including replacement or strengthening of structures above water level, should entail a bat assessment (Bat Conservation Ireland 2010). If bats are present, exclusion procedures should be implemented prior to maintenance activities.

Some maintenance activities (e.g., surface treatments including chip sealing, crack filling, crack sealing, patching) can kill, entomb bats or cause the abandonment of non-volant young. Additionally, these activities can create

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excessive noise, vibrations, and modify thermal conditions of roosts; and consequently, may promote roost abandonment. If bats are present, exclusion procedures should be implemented prior to maintenance activities.

Night-time maintenance activities can affect bats. Light, odors and noise can delay or discourage bats from emergence, or potentially, cause site abandonment. Activities adjacent to roosts should be avoided, especially when bats are most vulnerable (mid- March – end of July). If operations are inevitable, we recommend the installation of very localized lighting in the worksite zone, avoiding surrounding areas to reduce the barrier effect. The temporary erection of noise barriers and/or light screens may also be considered. Temporary infrastructure (e.g., stockpile areas, roads for construction traffic) should be constructed at a distance from roosts (Sètra et al. 2009).

Maintenance activities which involve the replacement of bridge components with contrastive products may modify roost microclimate, dimensions, illumination, et cetera; and consequently, may promote roost abandonment.

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Appendix 1 Scientific and common names of the 47 bat species that inhabit the United States

Scientific Name	Common Name
Antrozous pallidus	pallid bat
Artibeus jamaicensis	Jamaican fruit-eating bat
Choeronycteris mexicana	Mexican long-tongued bat
Corynorhinus rafinesquii	Rafinesque's big-eared bat
Corynorhinus townsendii	Townsend's big-eared bat
Eptesicus fuscus	big brown bat
Euderma maculatum	spotted bat
Eumops floridanus	Florida bonneted bat
Eumops perotis	greater bonneted bat
Eumops underwoodii	Underwood's bonneted bat
Idionycteris phyllotis	Allen's big-eared bat
Lasionycteris noctivagans	silver-haired bat
Lasiurus blossevillii	western red bat
Lasiurus borealis	eastern red bat
Lasiurus cinereus	hoary bat
Lasiurus ega	southern yellow bat
Lasiurus intermedius	northern yellow bat
Lasiurus seminolus	seminole bat
Lasiurus xanthinus	western yellow bat
Leptonycteris nivalis	Mexican long-nosed bat
Leptonycteris yerbabuenae	lesser long-nosed bat
Macrotus californicus	California leaf-nosed bat
Molossus molossus	Pallas' mastiff bat
Mormoops megalophylla	Peter's ghost-faced bat
Myotis auriculus	southwestern myotis
Myotis austroriparius	southeastern myotis
Myotis californicus	California myotis
Myotis ciliolabrum	western small-footed myotis
Myotis evotis	long-eared myotis
Myotis grisescens	gray myotis
Myotis keenii	Keen's myotis
Myotis leibii	eastern small-footed myotis
Myotis lucifugus	little brown myotis

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Myotis melanorhinus	dark-nosed small-footed myotis
Myotis occultus	Arizona myotis
Myotis septentrionalis	northern myotis
Myotis sodalis	Indiana myotis
Myotis thysanodes	fringed myotis
Myotis velifer	cave myotis
Myotis volans	long-legged myotis
Myotis yumanensis	Yuma myotis
Nycticeius humeralis	evening bat
Nyctinomops femorosaccus	pocketed free-tailed bat
Nyctinomops macrotis	big free-tailed bat
Parastrellus hesperus	canyon bat, western pipistrelle
Perimyotis subflavus	tri-colored bat
Tadarida brasiliensis	Mexican free-tailed bat

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Appendix 2

Image Gallery | Typical indicators of bat presence
Visit http://www.bati.institute/gallery/ for more images



guano accumulation below roosts (between box beams)



guano accumulation below roosts (midline expansion



urine crystallization on edge of roost

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Image Gallery | Photographs of common roosts



Myotis spp. day roosting on open beam



Myotis spp. day roosting in clogged drainage pipe

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Tadarida brasiliensis maternity colony with pups in expansion joint



Myotis spp. colony roosting in timber bridge between double beams



Myotis yumanensis exploiting concrete spall



Myotis spp. maternity colony with pups in expansion joint

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Migrating *Tadarida brasiliensis* colony using bridge as transient roost site

Image Gallery | Photographs of uncommon and potentially overlooked roost sites



Drainage pipe roost



Bats roosting within 'bolt cavity' in insulated pipe



Roosting in void created by concrete spall



Myotis spp. roosting in void created by concrete spall

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6.35 mm diameter roost opening



bat prostrate in wasps' nest



bats roosting inside intact swallow nests



bats roosting in pipe collar

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bats roosting behind blue insulation board



although urine staining is noticeable, a cursory view of a metal-clad concrete bridge would be deemed unusable with no further inspection



bats roosting between beams and deck



individual bat behind timber guardrail

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bats roosting between pier and deck



Foam sealant was used to exclude bats from obvious roost locations (between parallel beams). However, incomplete exclusion attempts allow the potential for occupancy (please see images below).



Foam did not completely fill the crevice between parallel beams, which still provides amenable roosting space for individual bats (particularly important for T&E species, whereby single bats are of high conservation concern).



Although exclusion was "completed," (left and above) this roosting location (maternity colony roosting in space between road deck and timber beams) was overlooked.

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Image Gallery | Potential risks of conducting bridge works without determining presence/absence

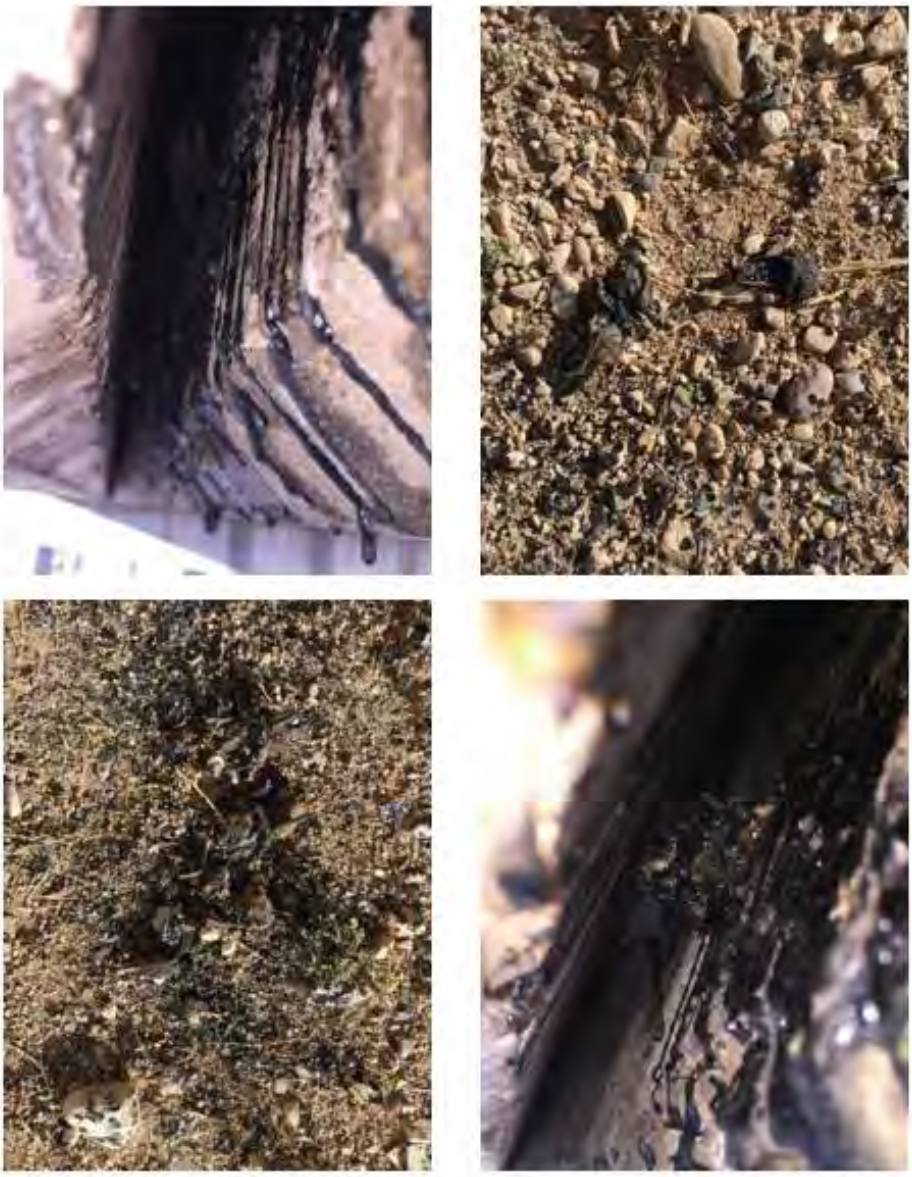


Liquid asphalt seeping through parallel beams while bats were present



Above and below; consequences of applying hot liquid asphalt during hibernation season (*T. brasiliensis* colony)

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Bridge workers replacing elastomeric seal directly above bat roosts. Such maintenance activities should occur when bats are absent to prevent abandonment of roost and/or young.

MARYLAND DEPARTMENT OF NATURAL RESOURCES RESPONSE

The MDTA appreciates the input provided by the Maryland Department of Natural Resources (MDNR) on the Tier 2 Study Draft EIS. In response to specific comments contained in MDNR's comment letter, the MDTA offers the following response:

1. The information in the Draft and Final EIS is limited by federally mandated page limits (23 U.S.C. 139(n)(3)). Given that limitation, significant impacts and impacts with specific regulatory requirements that are critical to NEPA decision-making were prioritized for the Draft and Final EIS. Additional information and analysis are provided in the Natural Environment Technical Report (NETR), Biological Assessment, and Essential Fish Habitat Assessment which are referenced throughout the Draft and Final EIS to allow readers to access the information while still meeting page limit requirements. A reference to the availability of additional information in these documents has been added to the introduction to the Final EIS **Section 5.5** Natural Resources for clarity.

2. Thank you for your assistance in identifying these resources early in the EIS development. The MDTA will continue to coordinate with MDNR on measures to reduce potential adverse effects on these resources during design and construction.

3. A Maintenance of Traffic (MOT) Plan will be prepared during final design to maintain traffic flow and access to residences, businesses and community facilities such as Sandy Point State Park during approach roadway construction. The public will be notified during construction and specific channels of communication with various property owners will be determined at that time. The MDTA has continued to coordinate with MDNR during development of the Final EIS/ROD on potential temporary construction impacts to Mezick Pond access. The MDTA will continue to coordinate with MDNR, including the Park Manager, through design and construction. In addition to the Local Notice to Mariners coordination through the USCG, MDTA will develop and coordinate a Maintenance of Access Plan with MDNR during design that includes: a schedule of anticipated activities that could result in temporary closures of Mezick Pond, procedures for communication of closures, and processes for coordinating modifications to the plan.

4. Thank you for the comment. No revisions needed.

5. Text added to **Section 3.3.1** in the Final EIS to clarify that a connection into SPSP was not preferred because it would "result in the placement of a short bridge with height limitations over Mezick Pond."

6. The MDTA will consider filling gaps in the Habitat Connectivity Network as part of the criteria for selecting forest mitigation opportunities during design and permitting as practicable. The statement "All mitigation will be completed using native species and gaps identified in the Habitat Connectivity Network database will be targeted for both on-site and off-site restoration." has been added to Final EIS **Section 5.5.8.1**, Terrestrial Habitat, Minimization and Mitigation.

7. Panamax Generation III vessels have a maximum draft or 39.5 feet (12 meters). The latest class of Panama Canal traversing vessels, the Neopanamax ships, adjust their draft to range from 39.5 feet to 50 feet depending on the depth of the available water. The

Chesapeake Bay Bridge Channel is part of the USACE "50 foot Project" and is maintained at 50 feet deep along with the other Baltimore Harbor approach channels. From 2012 to 2021, the USACE surveys show that the Chesapeake Bay Bridge Channel is consistently several feet deeper than 50 feet. The anticipated future shipping is constrained by the Panama and Suez canals. The USACE has no current plans to dredge or deepen the Chesapeake Bay Bridge Channel.

8. Text in the final paragraph on Page 2-9 references the separate pier protection project; however, additional discussion is not warranted in the Purpose and Need Chapter for the Tier 2 Study as it is a separate project. The pier protection will not affect the channel. The text in the final paragraph on Page 2-9 was updated to clarify that a Request for Proposals (RFP) was issued for the separate pier protection project.

9. Potential impacts from the build alternatives on the entrance to Mezick Pond are discussed in **Section 5.5.5.3**, Maintained Navigational Channels, of the Final EIS. The text states "All build alternatives, including the Preferred Alternative, would temporarily impact the entrance of Mezick Pond due to temporary closings during in-river construction directly adjacent to the western shoreline of the Chesapeake Bay. The MDTA will coordinate temporary closures of the Bay Bridge Marina channel and Mezick Pond access with the USCG, MDNR, marina operators, and emergency services."

   Clarifying text was also added to this section stating, "The southern alternatives (Alternatives C, E, and G) would avoid the need for a new structure across the Mezick Pond entrance channel for the new Bay Bridge span, thus avoiding any new height restrictions to the channel".

   Text was also added to the Mitigation discussion in **Section 5.5.5.3** of the Final EIS regarding the Maintenance of Access Plan discussed in a previous response.

   Additionally, in **Section 4.1.3** of the Final Section 4(f) Evaluation, impacts to the entrance of Mezick Pond are addressed. The Preferred Alternative would require "...temporary restrictions to the navigational entrance channel of Mezick Pond...for boaters accessing the Chesapeake Bay during construction...During early stages [of temporary dredging], shield barges and other navigational controls would be used, and there would be flexibility to maintain safe passage to Mezick Pond...During certain construction periods, access may be limited to commercial or government vessels only, while recreational boating access would be temporarily prohibited for safety reasons. The duration and timing of these restrictions would [range] from short-term closure lasting a few hours to longer, seasonal restrictions...[and would include] further coordination with MDNR...during final design to refine the timing, duration, and extent of any access restrictions and to ensure impacts to boaters are minimized to the greatest extent practicable."

10. Installation of stormwater management facilities on the bridge structure was not explored due to concerns about additional structural loading and the limited ability to access and maintain potential facilities.

11. The published title of the manual is "2000 Maryland Stormwater Design Manual". There were select revisions made in May 2009; however, the manual title was not updated. The proper reference for the manual is "2000 Maryland Stormwater Design Manual (Rev. May 2009)". "Rev." was added to the reference in the Final EIS **Section 5.5.4.2** Mitigation

discussion and also revised to be consistent in Final EIS **Section 3.3.5.1**. All references in the Final EIS are now consistent.

12. The Final EIS and Final Section 4(f) Evaluation presents Section 4(f) impacts from the Preferred Alternative. The anticipated Section 4(f) use determinations from Alternatives B through G presented in the Draft EIS and Draft Section 4(f) Evaluation will not be updated; however, any new impact determinations from the Preferred Alternative as a result of engineering refinements are included in the Final EIS and Final Section 4(f) Evaluation. These refinements have avoided all impacts from the mainline improvements of Alternative C.

13. Commitments to maintaining and/or improving aquatic organism passage where practicable are included in Final EIS **Sections 5.5.5.1** and **5.5.7.3**. In **5.5.5.1**, the Final EIS states: "Where new culverts are warranted, bottomless or natural channel bottom designs will be included to the extent practicable, and all new culverts will be constructed so that the placement of riprap does not impede movement of aquatic species. If existing culverts do not meet current aquatic life passage standards and are being extended rather than replaced, then opportunities for improving aquatic life passage are limited; however, the MDTA will work to maintain or improve aquatic life passage where practicable. Tidal bridge and culvert extensions or replacements will take tidal flows into account to ensure maintenance of existing and estimated future tidal regimes to avoid impacts to aquatic organism passage and tidal flushing."

14. Updated text regarding the hydrodynamic analysis is included in the Final EIS, **Section 5.5.5.2**.

15. "Demolition activities" has been added to the referenced list of temporary impacts in Final EIS **Section 5.5.5.2**, Environmental Consequences. The demolition activities will last a few years for each existing span. Bottom impacts related to demolition will be temporary and will occur at various locations within the limits of disturbance at various times depending on demolition sequencing. The text provides an example of construction activities that are likely to be considered permanent or temporary based on their duration for the purposes of permitting, but those examples are not meant to be an exhaustive list. Permanent and temporary impact details will be developed during final design and coordinated closely with regulatory agencies at that time.

16. The reference to similar flow characteristics was intended to describe the overall impact to tidal circulation patterns and flow directions/influence in the Chesapeake Bay, rather than an assertion that peak velocities would remain unchanged at all locations. The hydrodynamic modeling results show that while localized increases in tidal velocity occur within the navigation channel near bridge piers, these changes are confined to the immediate bridge vicinity and do not alter broader circulation patterns in the Chesapeake Bay. Outside of the bridge corridor, modeled flow behavior under the proposed configuration remains consistent with existing conditions.

    The referenced statement has been revised in **Section 5.5.5.2**, Environmental Consequences of the Final EIS to say "The MDTA anticipates that the final design will have similar overall flow characteristics to the existing structures within the resource review area, despite localized differences in velocity, turbulence, and shear stress immediately around the new bridge."

Text was also added to Final EIS **Section 5.5.5.2**, Minimization and Mitigation : "In addition, more detailed hydraulic modeling will be conducted in final design when pier locations and size, and pier protection designs, are available to determine flow dynamics and the need for any additional scour protection for the new bridge structures. If future modeling results in substantially different flow dynamics, those effects will be coordinated with regulatory agencies as necessary."

17. Thank you for providing this resource. The potential for beneficial use of dredged material will be considered during final design.

18. Agree. Additional non-federal channels are discussed in Final EIS **Section 5.5.5.3**. A statement was added to **Section 5.5.5.3**, Environmental Consequences, to explicitly state "The local channels accessing Whitehall Creek, Mill Creek, and Jackson Creek would not be affected."

19. The X in this Table, now Final EIS **Table 5-43**, denotes affected channels (both permanent and temporary impacts). The requested change was not made because all Final EIS impact tables include both temporary and permanent impacts. Clarification for **Table 5-43** has been provided in the notes to make it clear that both temporary and permanent impacts are indicated by an X: "'X' denotes that the waterway is crossed by the alternative structures or temporarily impeded by areas of dredging, active construction, or demolition activity."

    Where possible, permanent versus temporary impacts are qualitatively described in the text. The text describing permanent versus temporary impacts to the Mezick Pond channel from the southern alternatives has been clarified with the following statement "The southern alternatives (Alternatives C, E, and G), including the Preferred Alternative, would avoid the need for a new structure across the Mezick Pond entrance channel for the new Bay Bridge span, thus avoiding permanent impacts and any new height restrictions to the channel. Impacts to the entrance of Mezick Pond for all of the build alternatives would include temporary closings during in-river construction directly adjacent to the western shoreline of the Chesapeake Bay. The MDTA is committed to coordinating temporary closures of the Bay Bridge Marina channel and Mezick Pond access with the U.S. Coast Guard, MDNR, marina operators, and emergency services."

    Temporary impacts to Mezick Pond access are also discussed in **Section 4.1.3** of the Final Section 4(f) Evaluation.

20. **Table 5-49** of the Final EIS has been updated in the Final EIS to include "Changes in depth characteristics" as a type of impact. The table is meant to provide a summary of habitat impacts that applies throughout the section, thus, for consistency with other impacts, the change to depth was only specifically noted again in relation to indirect SAV impacts.

21. The Preferred Alternative minimizes impacts to beach habitats by avoiding the Sandy Point State Park and Terrapin Nature Park beaches north of the existing bridges. The majority of the shoreline south of the existing bridges where a new bridge would be built does not contain beach areas; most is fortified with riprap, and would likely continue to be fortified for pier and shoreline protection.

22. This has not yet been determined. The MDTA will coordinate with resource agencies during permitting regarding what type of substrate would be used to restore dredged areas.

23. The MDTA has added additional text to Final EIS **Sections 5.1.3** and **5.5.7.2** to specifically note the commercial and recreational importance of various fisheries, including oysters and blue crabs, and to note additional environmental consequences (e.g., the removal of the existing bridge spans and associated underwater structure/habitat and associated temporary revenue losses). Specific references to NETR sections for oysters and blue crabs were added to the Final EIS as the information in the EIS is limited by federally mandated page limits.

24. The following text has been added to Final EIS **Section 5.5.7.2** for Aquatic Biota, Affected Environment under Blue Crabs and Horseshoe Crabs: "[crabs] tend to be abundant in shallow-water areas during warm weather. As the water temperature drops each year, they burrow into sediment in the deeper parts of the Chesapeake Bay for the winter. See **Section 13.7.2** of Natural Environment Technical Report for additional information regarding blue crabs." Text acknowledging impacts to commercial fisheries, including commercial crabbing, has also been added to **Section 5.1.3** of the Final EIS.

25. Text has been added to Final EIS **Section 5.5.7.2**, Environmental Consequences indicating that the methodology used to determine pile driving impacts on Federally-managed fish species included in the document was developed by NOAA Fisheries for ESA-listed species. While the results of this methodology could likely be extrapolated to include other fish species within this habitat, the data used to determine the NOAA Fisheries Multi-Species Pile Driving Calculator calculations and proxies is specific to ESA-listed species specifically in the Greater Atlantic region and therefore the impact distances determined may not apply to all fish species within this habitat. We received direction from NOAA Fisheries to apply this tool to Federally-managed fish species within the project area. We included that the vibration impacts would impact all fish species, but we do not have a specific and generally accepted methodology to determine noise impacts for species other than the Federally-managed fish species covered by the NOAA Fisheries Multi-Species Pile Driving Calculator.

    Pile sizes have been added to the isopleth figure (**Figure 5-29** of the Final EIS).

26. Updated text regarding the Zone of Safe Fish Passage (ZSFP) has been added throughout Final EIS **Section 5** to indicate that a practicable ZSFP has been determined in coordination with NOAA Fisheries and MDNR. The MDTA coordinated directly with NOAA Fisheries, who coordinated with MDNR to discuss the ZSFP commitment included in the Essential Fish Habitat Assessment and Final EIS. The Final EIS has been updated to indicate that there will be ongoing coordination with MDNR and NOAA Fisheries to refine and approve ZSFP locations and the migratory focal period during final design and permitting. The MDTA will coordinate with MDNR and NOAA Fisheries to determine the appropriate time of year restriction for pile driving activities as design progresses.

27. In Final EIS **Section 5.5.7.3**, revised to state "The MDTA will implement the following avoidance and minimization methods related to aquatic species and habitats, such as marine mammals, Federally listed aquatic species, EFH, and HAPC:"

In Final EIS **Section 5.5.7.3**, revised to state "A number of additional avoidance and minimization methods related to aquatic species and habitats, such as marine mammals, Federally listed aquatic species (sturgeon and sea turtles), EFH, and HAPC will be considered by MDTA in coordination with the resource agencies as design progresses. "

Additional measures that will be considered and further coordinated with the resource agencies as design progresses, including measures to monitor water quality and address entrainment, are included in the Atlantic Sturgeon, Shortnose Sturgeon, and Sea Turtles Biological Assessment and the Essential Fish Habitat Assessment, included as supporting documents to the Final EIS.

The list of aquatic species commitments in Final EIS **Section 5.5.7.3** was updated to include the latest versions from the Essential Fish Habitat Assessment and the Atlantic Sturgeon, Shortnose Sturgeon, and Sea Turtles Biological Assessment.

28. Thank you for the request to provide a graphic of the limits of disturbance for the Western Shore Connection #1; however, this connection was not preferred and is not being carried forward, primarily based on comments from MDNR. In order to maintain a concise EIS document as required by FHWA, a graphic was not included for the connections that were not preferred.

29. Thank you for the request to expand the explanation of why the shared-use path connection directly into Sandy Point State Park was not preferred. Because this option was not preferred, or carried forward, the following text was added "The MDTA coordinated with MDNR (See Appendix C), who stated that the connection into Sandy Point State Park was not preferred because it would bring all path users through the heart of the park, near the beach, and would result in the placement of a short bridge with height limitations over Mezick Pond."

30. Understood. Text regarding Zone of Safe Fish Passage (ZSFP) was updated throughout Final EIS **Section 5** to indicate that a practicable ZSFP has been determined in coordination with NOAA Fisheries and MDNR. The MDTA coordinated directly with NOAA Fisheries, who coordinated with MDNR to discuss the ZSFP commitment included in the Essential Fish Habitat Assessment and Final EIS. The Final EIS has been updated to indicate that there will be ongoing coordination with MDNR and NOAA Fisheries to refine and approve ZSFP locations and the migratory focal period during final design and permitting. The MDTA will coordinate with MDNR and NOAA Fisheries to determine the appropriate time of year restriction for pile driving activities as design progresses.

31. The text in the Final EIS **Section 5.5.5.1** for Waters of the U.S., including Wetlands, Environmental Consequences has been updated to include the Natural Environment Technical Report section: "For a more in-depth discussion of impacts to waterways, including impacts to culverted waterways and waterway crossings, see **Section 9.1.3** of the Natural Environment Technical Report."

32. This comment refers to page 5-98 of the Draft EIS. We have added the following statement to **Section 5.5.7.2** Aquatic Biota, Affected Environment of the Final EIS: "The Chesapeake Fish Passage Prioritization database and MDNR's diadromous fish GIS data indicate there are various diadromous fish species within the resource review area, including American shad (Alosa sapidissima) and hickory shad (Alosa mediocris), in addition to many of the species listed above."

33. Thank you for providing this information. The MDTA reviewed the provided web map, and the information is consistent with what is provided in the Draft EIS and Final EIS.

34. As noted in the Draft EIS and Final EIS, the MDTA will coordinate with MDNR and other resource agencies regarding appropriate time-of-year restrictions as the project progresses.

35. The following text has been added to Final EIS **Section 5.5.7.3**: "The MDTA will also consider the use of telemetry tagging of certain fish species to understand when species may be more vulnerable to project impacts and inform time-of-year restrictions."

36. The MDTA revised the TOYR to February 15 through June 15 for anadromous fish in Final EIS **Section 5.5.7.3** and added, "Further coordination regarding the appropriate time of year restriction for this work would be ongoing as the project progresses."

37. After further coordination with DNR, specific data is not available. The following text has been added to Final EIS **Section 5.5.7.3** Aquatic Habitat and Biota, Minimization and Mitigation: "There is also concern for young of year fish staging and migrating out of the project area from summer through fall. These juvenile fish may be more susceptible to noise impacts, injury, and mortality than adult fish. The MDTA will work with resource and regulatory agencies to identify appropriate time-of-year restrictions and implement BMPs to minimize impacts to young of year fish, to the extent practicable."

38. Dredging time-of-year restrictions (TOYRs) from COMAR 26.24.02.06 are already included in Final EIS **Section 5.5.7.3**, including those related to SAV and shellfish (including oysters). The MDTA confirmed with DNR that there is no TOYR in COMAR for horseshoe crabs. If a TOYR for horseshoe crabs or other species is added to COMAR prior to construction, it will be coordinated with DNR at that time.

39. Revised text in Final EIS **Section 5.5.8.1** Terrestrial Habitat, Environmental Consequences to specify the regulatory definition referenced is the MD Forest Conservation Act definition, and to include the definition in the text (trees and other woody plants covering a land area of 10,000 square feet or greater, containing at least 100 trees per acre with at least 50% of those trees having a 2 inch or greater diameter at 4.5 feet above the ground).

40. The MDTA will coordinate with MDNR regarding Forest Conservation Easements during final design. Additional detail has been incorporated into Final EIS **Section 5.2.1.5**, Land Use Planning, Environmental Consequences: "The protected lands data includes MDNR-owned and local parks as well as Forest Conservation Act easement areas. For park lands impacted, the MDTA will coordinate with the official with jurisdiction as detailed in **Section 7**. Forest Conservation Act easement areas can be moved, but require approval from the Maryland Board of Public Works. The MDTA will continue to coordinate with MDNR through final design regarding impacts to Maryland Forest Conservation Act easement areas."

41. The MDTA appreciates the additional information for listed bat species. We have coordinated extensively with USFWS and DNR Wildlife and Heritage Service (WHS) throughout preparation of the EIS and information about the state-listed species was not previously shared. The MDTA added the two state-listed bat species (eastern small-footed bat and little brown bat) to the Final EIS **Section 5.5.9.1** as potentially occurring in

the resource review area. Upon further coordination with DNR, it was noted that the bat species referenced in this comment occur in similar habitats in nearby states, and could presumably be in the area. However, the MDTA did not add Indiana bat to the Final EIS because coordination with USFWS has indicated the project is outside the range of this Federally-listed species. As noted in the EIS, bat surveys will continue to be conducted, likely several times, prior to construction and MDTA will continue to coordinate with USFWS and DNR WHS to ensure that impacts to all listed bat species that could occur within the project area are assessed.

42. Thank you for providing this information. The Final EIS **Section 5.5.9.2**, Minimization and Mitigation, was updated to state that bridge and culvert surveys "would be completed every two years and prior to construction activities at these structures to ensure probable absence of NLEB and TCB, as well as state-listed bat species. As outlined in USFWS guidance and refined in consultation with MDNR, surveys would be conducted in two seasons: Summer maternity pup season (May 15 to July 31) and Winter torpor season (December 15 to February 15)." Since the species listed by MDNR use similar habitats to the Federal species being coordinated with USFWS, the surveys would be aimed at documenting any of the Federal or state species noted. During design, the MDTA will continue to coordinate with USFWS regarding Federal bat species and will include MDNR WHS in this coordination.

43. Thank you for providing this reference. We added this reference to Final EIS **Section 5.5.9.1**, Environmental Consequences along with the reference to the USFWS 2024 survey guidelines as both documents include survey protocols for bridges and culverts.

44. Thank you for providing this clarification and GIS data source. All of **Section 5.5.10** of the Final EIS has been updated to present the 2024 Habitat Connectivity Network information rather than Green Infrastructure with the following text explaining the change: In 2024, MDNR updated their Green Infrastructure (GI) data layers and renamed GI to Maryland's Habitat Connectivity Network (HCN). The HCN provides additional breakdown of habitat types and includes identification of restorable and non-restorable gaps within the hubs and corridors. The HCN also includes additional corridors that cross U.S. 50/301 not previously identified in Maryland's GI Assessment or Draft EIS. The discussion of GI in the Draft EIS has been updated to reflect the HCN for this Final EIS."

45. Thank you for providing this information. The MDTA has added the two state-listed bat species to the Final EIS and will continue to coordinate with USFWS and MDNR Wildlife and Heritage Service (WHS) as the project progresses, including regarding future bat surveys.

46. Thank you for providing this information. The document in which these misconceptions are listed has been referenced in Final EIS **Section 5.5.9.1**, Environmental Consequences.

47. Thank you for providing this information. The MDTA will continue to coordinate with USFWS and DNR Wildlife and Heritage Service (WHS) for Federal and state-listed bats as the project progresses regarding survey methods.

48. Thank you for providing this information.

49. Alternative C would not shift additional congestion toward the entrance of Sandy Point State Park. It would eliminate queues on eastbound U.S. 50/301 approaching the Bay Bridge, and thus would remove the reason for drivers to divert from that roadway. Management of the ramps approaching the Bay Bridge has been performed by SHA for the past four summers (2022-2025). Additional information about that effort may be found at: https://mdot-sha-us50-301-broadneck-peninsula-service-roads-maryland.hub.arcgis.com/.

50. The Final EIS and Final Section 4(f) Evaluation presents Section 4(f) impacts from the Preferred Alternative. Any new impact determinations from the Preferred Alternative as a result of engineering refinements are included in the Final EIS and Final Section 4(f) Evaluation.

51. As noted in the response to Comment #20 from MDNR, the notes for Final EIS **Table 5-43** have been revised to clarify the X denotes permanent or temporary impacts that could occur. The Final EIS text below the table was revised to more clearly state that the southern alignment alternatives do not require a structure over Mezick Pond. Temporary construction impacts (e.g., closures/access restrictions) would occur for all build alternatives, including the Preferred Alternative.

    Temporary impacts to Mezick Pond access are also discussed in **Section 4.1.3** of the Final Section 4(f) Evaluation.

ARDS Concurrence Package

The Bay Bridge Protection Project (BBPP) for the existing Bay Bridge is separate from the pier protection measures that would be associated with new bridge spans for the Tier 2 Study. The protection system proposed as part of the BBPP is intended to remain in place and be incorporated as part of the protection system for a new crossing and was coordinated with the Tier 2 Study Preferred Alternative to avoid conflicts in foundation construction of a new crossing.

Hydrodynamic Report (Appendix F)

Modeling that includes details for the actual bridge to be built, including existing pier protection structures (from the separate Bay Bridge Protection Project) and all proposed structures will occur in final design. Text was added to Final EIS **Section 5.5.5.2**, Minimization and Mitigation to clarify this: "In addition, more detailed hydraulic modeling would be conducted in final design when specifics on pier locations and size and pier protection designs are available to determine flow dynamics and the need for any additional scour protection for the new bridge structures. If future modeling results in substantially different flow dynamics, those effects will be coordinated with regulatory agencies as necessary at that time."

Navigation Impact Report

Table 5-43 has been revised in the Final EIS to note that Mezick Pond would be affected by Alternative C rather than crossed by it. The text following the table in **Section 5.5.5.3**, Environmental Consequences, discussing impacts has also been revised to better clarify that the Preferred Alternatives does not include structures across Mezick Pond, but will include temporary construction impacts. The MDTA has continued to coordinate with MDNR during development of the Final EIS/Record of Decision on potential temporary construction impacts to Mezick Pond access. The MDTA will continue coordinating with MDNR, including the Park Manager, through

design and construction. In addition to the Local Notice to Mariners coordination through the USCG, the MDTA will develop and coordinate a Maintenance of Access Plan with MDNR during design that includes: a schedule of anticipated activities that could result in temporary closures of Mezick Pond, procedures for communication of closures, and processes for coordinating modifications to the plan.

Natural Environment Technical Report

1. Thank you for providing this information. The technical reports published with the Draft EIS will not be updated; however, the MDTA has updated the existing impervious surface percentage values in **Table 5-26** of the Final EIS to reflect the 2024 values in the provided resource.

2. Requirements under COMAR 26.17.02 will be considered during future project phases, including areas where requirements could potentially be exceeded.

3. This specific sentence is not in the Final EIS, therefore, no edits were made.

4. This information has been added to Final EIS **Section 5.5.4.2** Water Quality Environmental Consequences: "Increased salinity and temperature can lower the ability of oxygen to dissolve in water, with the potential to affect aquatic biota."

5. Final EIS **Section 5.5.4.3** Wild and Scenic Rivers, Environmental Consequences has been revised to state: "Alternative A, the No-Build Alternative, would have no impacts to the Severn River or its viewshed, defined as the geographic area visible from the Severn River."

6. As stated in the Final EIS and NETR, Alternatives B and C would impact three tributaries (Meredith Creek, Thompson Creek, and Cox Creek), as well as the Mezick Pond connection to the Chesapeake Bay. The Preferred Alternative and optional SUP design included in the Draft EIS and Final EIS do not include a structure across the entrance to Mezick Pond. Potential temporary impacts during construction (dredging and demolition) will be coordinated with MDNR during final design and construction.

7. This is correct and consistent in the NETR and Draft EIS and Final EIS for nontidal and tidal waterways, not including the Chesapeake Bay. The MDTA assumes it is the separation of Bay impacts vs. other tidal and nontidal waters that is confusing. NETR **Table 9-10** and Final EIS **Tables 5-32** and **5-33** clarify the exclusion of the Bay from this calculation. A clarifying statement has also been added to the Final EIS text in **Section 5.5.5.1**, Environmental Consequences to provide additional clarity. "**Table 5-32** identifies the total impacts to tidal and nontidal waterways associated with each build alternative, excluding the Chesapeake Bay (See **Section 5.5.5.2** for Bay impacts). **Table 5-33** provides a summary of potential impacts to waterways, exclusive of the Bay, due to the SUP option associated with each build alternative."

8. **Table 5-43** has been revised in the Final EIS to note that Mezick Pond would be affected by Alternative C rather than crossed by it. The text following the table in **Section 5.5.5.3**, Environmental Consequences, discussing impacts has also been revised to better clarify that the Preferred Alternatives does not include structures across Mezick Pond, but will include temporary construction impacts. The MDTA has continued to coordinate with MDNR during development of the Final EIS/Record of Decision on potential temporary

construction impacts to Mezick Pond access. The MDTA will continue coordinating with MDNR, including the Park Manager, through design and construction. In addition to the Local Notice to Mariners coordination through the USCG, the MDTA will develop and coordinate a Maintenance of Access Plan with MDNR during design that includes: a schedule of anticipated activities that could result in temporary closures of Mezick Pond, procedures for communication of closures, and processes for coordinating modifications to the plan.

9. The following text was added to the Final EIS **Section 5.5.5.3** Maintained Navigational and Civil Works Projects, Affected Environment: "Other channels are State, County, or privately maintained and provide important recreational, law enforcement, and commercial boating access to the Bay."

10. The following text has been added to the Final EIS **Section 5.5.7.2** Aquatic Biota, Environmental Consequences: "It should be noted that vibration impacts would impact all fish species within the vicinity of the pile driving activities, not just those that are Federally managed. This includes potential impacts to migrating anadromous species, depending on the time of year."

11. The following text has been added to the Final EIS **Section 5.5.7.2** Aquatic Biota, Environmental Consequences, Fish: "All build alternatives would also impact tidal and nontidal fish species by increasing impervious land cover. Alternatives F and G would have the greatest potential fish impacts from water quality effects resulting from increased impervious area. High impervious surface coverage can negatively affect fish species diversity and reproductive success in anadromous species (CWP 2003). See **Tables 5-29** and **5-30** for a comparison of impervious surface increases by alternative." Specific sources of roadway runoff pollutants are included in Final EIS **Section 5.5.4.2** Water Quality, Environmental Consequences, which includes "vehicular sources (including tire wear, lubricants, brake linings, exhaust gases, antifreeze, and windshield fluids)." Potential contaminants such 6PPD-quinone, are not specifically listed but are included under the overall identification of vehicular sources, with impervious surfaces acting as an overall measure of relative level of impact for each alternative necessary in the Final EIS to compare impacts to resources across the build alternatives.

12. This table has been revised in the FEIS to note that Mezick Pond would be affected by Alternative C rather than crossed by it. The MDTA has continued to coordinate with MDNR during development of the Final EIS/Record of Decision on potential temporary construction impacts to Mezick Pond access. The MDTA will continue coordinating with MDNR, including the Park Manager, through design and construction. In addition to the Local Notice to Mariners coordination through the USCG, the MDTA will develop and coordinate a Maintenance of Access Plan with MDNR during design that includes: a schedule of anticipated activities that could result in temporary closures of Mezick Pond, procedures for communication of closures, and processes for coordinating modifications to the plan.

13. Sandy Point Channel is shown on **Figure 9-3** Navigation Channels in the NETR and **Figure 5-20** Navigation Channels of the Final EIS. Sandy Point Channel is located at the point north of the bridge from which Sandy Point derives its name rather than the Mezick Pond connection. Final EIS **Section 5.5.5.3** Maintained Navigational Channels and Civil

Works Projects, Environmental Consequences, has been updated to clarify the impacts to Mezick Pond.

Socioeconomic and Land Use Technical Report & Cultural Resources Technical Report

The MDTA has added additional text to Final EIS **Sections 5.1.3** and **5.5.7.2** to specifically note the commercial and recreational importance of various fisheries, including oysters and blue crabs, and to note additional environmental consequences (e.g., the removal of the existing bridge spans and associated underwater structure/habitat and associated temporary revenue losses). Specific references to NETR sections for oysters and blue crabs were added to the Final EIS as the information in the EIS is limited by federally mandated page limits.

MARYLAND DEPARTMENT OF PLANNING COMMENT

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March 9, 2026

Heather Lowe, Manager, Planning & Community Relations
Division of Planning and Program Development
Maryland Transportation Authority
Point Breeze
2310 Broening Highway
Baltimore, MD 21224

Re: Bay Crossing Study Tier 2 – DEIS Review- January 2026

Dear Ms. Lowe:

Maryland Department of Planning (MDP) has reviewed the Draft Environmental Impact Statement (DEIS) for the Bay Crossing Study (BCS)-Tier 2 NEPA, released in January 2026. We appreciate that this version of the DEIS incorporated most of our comments from earlier September 2025 version. The following comments focus on the Maryland Transportation Authority (MDTA) Recommended Preferred Alternative (RPA) - Alternative C.

PFA Law

In January 2026, in coordination with the Maryland State Highway Administration (SHA), MDP noted that since MDTA recommended Alternative C (6-8-6 South) as the Preferred Alternative for the BCS-Tier 2 Project, MDTA intends to use MDTA funding for the entire future project construction and no other state funding, e.g., funding from the SHA, will be used on the project. Since the RPA – Alternative C (6-8-6 South) would be within the MDTA's right-of-way and only use MDTA funding for future construction and maintenance, the RPA would be exempted from the Priority Funding Area (PFA) law as defined in §5–7B–01. (c.) (1) (i) of the State Finance and Procurement Article. MDP suggests that MDTA prepare a summary document on how the project complies with the PFA law and include that information in the Final Environmental Impact Statement (FEIS).

The MDTA Recommended Preferred Alternative (RPA)

MDP noted that the MDTA recommended Alternative C (6-8-6 South) as the Preferred Alternative, which would replace the two existing Bay Bridge spans with two new spans, totaling eight travel lanes with four lanes on each span. And the two new bridge spans would extend along U.S. 50/301 from west of Oceanic Drive in Anne Arundel County to east of Cox Creek in Queen Anne's County, providing sufficient room to transition into the existing U.S. 50/301, which would not be changed. MDP recognizes that, overall, Alternative C (6-8-6 South) would have fewer environmental impacts, including a lower likelihood of induced adverse growth within the project's influence area, as compared to other built alternatives that would entail more highway expansion.

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Heather Lowe, MDTA
Re: BCST2-DEIS – January 2026

MDP also recognizes that the RPA – Alternative C would not resolve traffic queuing and travel time delays in the project corridor and beyond, especially during summer weekends. Since increasing the bridge capacity would not resolve future traffic challenges resulting from vehicle travel demands, MDP encourages the MDTA to continue working with the Maryland Department of Transportation (MDOT), local agencies, and Metropolitan Planning Organizations (MPOs) to consider robust and innovative Transportation Demand Management (TDM)/Transportation System Management (TSM) and transit measures to manage and reduce single-occupancy vehicle (SOV) travel demand, and maximize the efficiency of available bridge and highway capacity.

The RPA-Alternative C would include a transit investment commitment from the MDTA to support future transit improvements (page 8-2). Through the transit investment, it is expected that the MDTA would work with MDOT and local jurisdictions to help develop and implement transit strategies that would help address Bay crossing transportation needs. Chapter 8 (MDTA Recommended Preferred Alternative) should indicate that, in addition to making the financial commitment, the MDTA would work with appropriate state and local partners to help develop and implement appropriate transit improvements as part of the PRA.

Regarding TDM and TSM, Chapter 8 should clarify which TDM/TSM measures the RPA-Alternative C would include (page 8-2). Please clarify whether the RPA-Alternative C continues to include Congestion Pricing, Park-and-Ride, and Part-Time Shoulder Use (PTSU) as recommended during the Alternative Retained for Detailed Study stage (pages 3-10). In addition to addressing these TDM/TSM measures, MDP suggests that Chapter 8 indicate that the MDTA will continue coordinating with the MDOT/SHA on MDOT/SHA's studies and improvements along U.S. 50/301 that would affect travel conditions on the Bay Bridge, because improvements on U.S. 50/301 affect the TDM/TSM component of the RPA-Alternative C.

It appears that the SHA is studying and implementing the "Rural Opportunities to Use Traffic Technology Enhancements (ROUTE)" project (a TSM project) on the U.S. 50 corridor on Maryland's Eastern Shore. Are there any proposed TSM improvements from the "ROUTE" project in the BCS-Tier 2 project area? If so, the information can be included in the No-Build Alternative.
MDP noted the RPA-Alternative C would include an optional pedestrian and bicycle shared-use path (SUP), and the MDTA would further coordinate with other state, local, and federal agencies to determine whether an SUP would be implemented (page 8-2). MDP suggests that on page 8-2, the paragraph discussing the SUP include the information that the MDTA would continue coordinating with local, state, and regional planning agencies in considering the consistency of the SUP with local pedestrian and bicycle plans, the proposed regional bike network in the Baltimore region, the 2025 Maryland State Transportation Trails Strategic Plan, and the Maryland's Complete Streets Policy.

Other Comments
TSM measures, e.g., robust and comprehensive traffic incident management, installing speed cameras to deter vehicle speeding and weaving in and out of lanes, encouraging local roadway improvements for local traffic, and other strategies, should be evaluated for current and future traffic congestion mitigation and safety improvement. MDP staff are aware that, likely due to limited incident management resources, it sometimes takes a long time to clear a traffic accident in the project corridor. Speeding/aggressive driving are also problems in the project corridor. Proactive traffic management to deter aggressive driving could improve overall travel efficiency and safety. It is unclear whether the MDTA has considered and addressed these TSM measures. If so, the information can be included in the

Heather Lowe, MDTA
Re: BCST2-DEIS – January 2026

No-Build Alternative for clarification.

On page 4-12, in the 4.2.1.4 paragraph, please change ".....State-certified Priority Funding Areas (PFAs)....." to ".....State-**concurred** Priority Funding Areas (PFAs)....." because local jurisdictions certify their designated PFAs, and MDP only reviews against the defined PFA criteria and makes a determination of whether to concur or not with the locally designated PFA. If a locally designated PFA doesn't meet the PFA criteria, MDP will indicate the area as a PFA Comment Area.

Refer to Table 4-9 (page 4-17): Please make a footnote for "Other Land" to explain the other land as: The remaining land not covered under another category. Examples include but are not limited to rural or agricultural lands, single-family residential parcels greater than or equal to 20 acres in size, and undeveloped portions of large parcels containing urban uses (See MDP's Statewide Classification Definitions. Visit the Statewide Land Use ArcGIS Story Map).

If you have any questions or wish to discuss the above comments further, please contact me at jason.dubow@maryland.gov and Bihui Xu at bihui.xu@maryland.gov.

Sincerely,



Jason Dubow, CC-P
Director, Research, Review, and Policy Division (RRP)

Maryland Department of Planning
(410) 767-3370; Jason.dubow@maryland.gov

CC: Sarah Williamson, Sr. Environmental Scientist & Owner, Coastal Resources, Inc.
Bihui Xu, Principal Transportation Planner, RRP, MDP
Chuck Boyd, Assistant Secretary of Planning Services, MDP

MARYLAND DEPARTMENT OF PLANNING RESPONSE

The MDTA appreciates the input provided by the Maryland Department of Planning (MDP) on the Tier 2 Study Draft EIS. In response to specific comments contained in MDP's comment letter, the MDTA offers the following response:

PFA Law

Section 4-101(h) of the Transportation Article, defines the Bay Bridge as an existing facility, which Section 5-7B-01 of the PFA law exempts from the definition of "growth-related project."

Additionally, no Maryland state infrastructure funds will be used to construct the Preferred Alternative, including approaches to the Bay Bridge. Since no Maryland state infrastructure funds will be used to construct the Preferred Alternative, the consistency requirements of the Smart Growth Priority Funding Areas Act of 1997 (the PFA law) would not apply. This text was added to FEIS **Section 5.2.1.5**.

For these reasons, a separate document is not necessary to demonstrate that the requirements of the Smart Growth Priority Funding Areas Act of 1997 (the PFA law) do not apply.

The MDTA Recommended Preferred Alternative (RPA)

The MDTA will continue to work with MDOT, local agencies, and the Metropolitan Planning Organizations (MPOs) to consider TDM and TSM opportunities along the U.S. 50/301 study area.

Text was added to the Preferred Alternative description in **Section 4.1** in the Final EIS, that states, "The MDTA would coordinate with MTA, local governments, and local transit agencies to help them determine the (transit) opportunities." Additional explanatory text in the Final EIS also states, "These transit agencies would determine the transit-related improvements most beneficial for them at that time, and they would be separate and distinct projects from the Preferred Alternative." The transit agencies will be responsible for implementing these transit-related improvements.

In **Section 3.3.4** TSM/TDM Considerations, the Final EIS states "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 future transportation goals. Public input would be requested prior to the implementation of congestion pricing." This indicates that although congestion pricing was part of the ARDS, it is not part of the RPA in later Chapters.

In **Section 3.3.3** Transit-related Improvements, the Final EIS states "transit-related opportunities would be determined in the future, closer to the time of construction.....The following are some examples of potential improvements....: Improvements to park-and-ride lots...." This indicates that park-and-ride improvements could be made with the transit-related financial commitment from MDTA.

In **Section 3.3.4** TSM/TDM Considerations, the Final EIS states "Although the build alternatives have been developed to accommodate PTSU, the operation of PTSU lanes is not being included as part of the build alternatives. Future implementation of PTSU is not precluded." This indicates that although part-time shoulder use was part of the ARDS, it is not part of the RPA.

SHA's ROUTE project (U.S. 50 from Bay Bridge to Ocean City) is a design-build project that is in the procurement phase. The Notice to Proceed date for the winning contractor is proposed for

Summer 2026. The MDTA will not know about the proposed improvements until after the winning contractor is awarded the work. Additionally, the contract amount is between $5M and $10M for construction; therefore, any proposed improvements within the Bay Crossing Tier 2 study area would not have an appreciable impact on the results of this study. The MDTA will continue to coordinate with SHA on the potential for improvements within the study area and include any applicable information in the Final EIS.

Text was added and revised in Final EIS **Section 4.1** to state "After approval of the Final EIS/ROD, the MDTA will perform financial analysis and determine whether an SUP would be implemented. If the SUP is included, additional coordination would occur among local, state, and Federal agencies....as well as consistency with local pedestrian and bicycle plans, the 2025 Maryland State Transportation Trails Strategic Plan, and MDOT's Complete Streets Policy."

Other Comments

The following text has been added to Final EIS **Section 3.2.2**: "The MDTA continually seeks to optimize traffic operations on the Bay Bridge and its approach roadways, and works with both state and local agencies to advance that effort. These efforts include traffic enforcement and incident management, and will continue into the future."

Text in Final EIS **Section 5.2.1.4** has been amended and now reads, "State-concurred Priority Funding Areas (PFAs)."

Final EIS **Table 5-9** footnote has been revised to include footnote 2 "Other Land" refers to the remaining land not covered under another category. Examples include but are not limited to rural or agricultural lands, single-family residential parcels greater than or equal to 20 acres in size, and undeveloped portions of large parcels containing urban uses (See MDP's Statewide Classification Definitions).

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION FISHERIES COMMENT

From: Jonathan Watson - NOAA Federal
To: Heather Lowe
Cc: Brian D Hopper - NOAA Federal; Sarah Williamson; Emma Beck; Karen Greene - NOAA Federal; Bienko, Alexander (FHWA)
Subject: Re: BCST2 DEIS Notice of Availability
Date: Monday, March 9, 2026 3:44:08 PM
Attachments: image001.png

Hi Heather,

We (NMFS-HESD) have reviewed the DEIS and NETR and have three very minor comments for your consideration:

(1) The Multi-species pile driving calculator is described as the "NOAA Fisheries Greater Atlantic Regional Fisheries Office (GARFO) Multi-Species Pile Driving Calculator (NMFS 2024)." While a calculator specific to GARFO existed several years ago, the current iteration of the tool was developed and is managed by our Office of Protected Resources in NOAA Fisheries' headquarters office. In that sense, it would be more accurate to describe it as "NOAA Fisheries Multi-Species Pile Driving Calculator (NMFS 2024)." This could be changed in both the DEIS and the NETR for accuracy.

(2) DEIS Pg 4-105 - The following statement is misleading: "Chesapeake Bay fish stock assessments for bluefish and summer flounder could be conducted by a fisheries stock assessment biologist based on this recent ChesMMAP data; however, current stock assessments are not publicly available." It would be more accurate to state that these species are managed as a coastwide stock; therefore, no stock assessment specific to the Chesapeake Bay exists. The stock assessments for the coastwide stocks are publicly available through the Mid-Atlantic Fishery Management Council (MAFMC).

(3) NETR pg 13-31 - Similar to comment 2 above, there is a misleading statement here about the availability of stock assessment information, which reads: "...bluefish and summer flounder, and stock assessment data for these species are not publicly available." The stock assessments, which are completed on the coast wide stock, are public documents available through MAFMC.

Overall, this is a very thorough document. Thank you for working with us over the past several years on its development. We appreciate your efforts to address our comments on the draft EFH Assessment and draft Biological Assessment.

Jonathan

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTATION FISHERIES RESPONSE

The MDTA appreciates the input provided by the National Oceanic and Atmospheric Administration (NOAA) Fisheries on the Tier 2 Study Draft EIS. In response to specific comments contained in NOAA's comment letter, the MDTA offers the following response:

1. Updated to replace "GARFO" with "NOAA Fisheries" and to ensure the date in the citations is 2025 throughout when referencing the Multi-Species Pile Driving Calculator in the Final EIS; Atlantic Sturgeon, Shortnose Sturgeon and Sea Turtles Biological Assessment, and Essential Fish Habitat Assessment.

2. Text in Final EIS **Section 5.5.7.2**, Environmental Consequences has been updated to read "Chesapeake Bay fish stock assessments for bluefish and summer flounder could be conducted by a fisheries stock assessment biologist based on this recent ChesMMAP data; however, no stock assessment specific to the Chesapeake Bay currently exists, as these species are managed as a coastwide stock."

3. Final EIS has been updated in **Section 5.5.7.2**, Aquatic Biota, Environmental Consequences to read "Chesapeake Bay fish stock assessments for bluefish and summer flounder could be conducted by a fisheries stock assessment biologist based on this recent ChesMMAP data; however, no stock assessment specific to the Chesapeake Bay currently exists, as these species are managed as a coastwide stock."

US ARMY CORPS OF ENGINEERS COMMENT

DEPARTMENT OF THE ARMY
U. S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
ATTN: REGULATORY DIVISION
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201-2930

March 9, 2026

Regulatory Division

Ms. Heather Lowe
Maryland Transportation Authority
Division of Planning & Program Development
2310 Broening Highway
Baltimore, Maryland 21224

Dear Ms. Lowe:

This is in response to the Federal Highway Administration (FHWA), U.S. Department of Transportation (USDOT) Draft Environmental Impact Statement (DEIS) for Tier 2 of the Bay Crossing Study that has been completed, with the Notice of Availability published in the Federal Register on January 23, 2026. The DEIS has been prepared to address existing and future transportation issues at the William Preston Lane, Jr. Memorial (Bay) Bridge and its approaches along U.S. 50/301, from Anne Arundel County on the Western Shore to Queen Anne's County on the Eastern Shore, in Maryland. FHWA, in coordination with the Maryland Transportation Authority (MDTA) is requesting comments from all interested parties and agencies to ensure that all potential alternatives; including MDTA's Recommended Preferred Alternative (RPA) (8-6-8 South); important issues, or significant environmental effects and analyses relevant to the proposed action are considered in preparation of the Final EIS.

The Corps has been designated as a Cooperating agency in the preparation of the EIS for the Chesapeake Bay Crossing Study: Tier 2 NEPA. In this regard, we look forward to working with your agency as the NEPA document is further developed to ensure that the information presented is adequate to fulfill Corps requirements. In general, the EIS should thoroughly evaluate project alternatives, permanent and temporary impacts to waters of the U.S., including jurisdictional streams and wetlands, impacts to Corps Civil Works projects, and the Corps public interest factors described below. This includes an analysis of impacts resulting from all project elements such as: in-water piers or structures, pier protection measures (e.g., riprap, island fills, dolphins, etc.), road crossings and/or filling of streams and wetlands, dredging, grading, permanent and temporary access roads, construction matting, staging areas, building pads, storm water management, stream diversions, disposal of any excess fill or dredged material, utility line impacts and/or relocations, mitigation proposals, demolition of existing bridge spans, and all other construction/operation related impacts.

We understand that the project will result in discharges of dredged or fill material into waters of the U.S., including jurisdictional wetlands; and work is expected to occur in navigable waters of the U.S., therefore, the project will require Department of the Army authorization under Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 189, and Section 14 of the Rivers and Harbors Act (Section 408). The alternatives analysis and methods to avoid/minimize impacts to waters of the U.S. are the centerpieces of the Corps-permit review process. Accordingly, to ensure that the information presented in the EIS is adequate to fulfill the requirements of the Corps regulations, the Clean Water Act Section 404(b)(1) Guidelines, and the Corps public interest review process, we request that the following topics be scoped and comprehensively evaluated in the EIS:

1. Alternatives Analysis/Avoidance and minimization: A fundamental precept of the Clean Water Act Section 404 Regulatory Program is that impacts to wetlands and other waters of the United States will be avoided and minimized, where it is practicable to do so. An evaluation of alternatives is required under the Section 404(b)(1) Guidelines for projects that include the discharge of dredged or fill material to waters of the United States. NEPA requires discussion of a reasonable range of alternatives, including the no action alternative, and the effects of those alternatives. Under the Section 404(b)(1) Guidelines, practicability of alternatives is taken into consideration, and no alternative may be permitted if there is a less environmentally damaging practicable alternative. Note that an alternative is practicable if it is available and capable of being done after taking into consideration cost, logistics, and existing technology in light of the overall project purpose. The MDTA has identified seven alternatives for the proposed action, including the no-build alternative and six build alternatives. The DEIS also identifies a RPA (8-6-8 South).

   The Corps would like to commend MDTA and FHWA for the level of rigor and detail that has been provided in the alternatives analysis.

   At a minimum, the NEPA document must evaluate the practicability of the identified bridge alternatives, while considering the following avoidance and minimization techniques:

   a. Evaluation of alternative alignments within the study corridor and shifts in alignment to avoid impacts to waters of the U.S., including jurisdictional wetlands.
   b. Longer Bay Bridge span lengths to minimize in-water piers
   c. Bridges to span stream/wetland crossings
   d. Alternative measures for bridge pier protection (e.g., rock island fill, dolphins, fender system, etc.)
   e. Retaining walls along additional approach lanes
   f. Steep side slopes
   g. Stormwater management alternatives, i.e. placing stormwater in uplands

h. Stream relocation as opposed to filling and/or piping streams,
i. Implementation of best management practices
j. Use of timber mats in wetland/stream areas for temporary equipment access.
k. Use of temporary construction road access bridges to span streams and wetlands.
l. Construction material/equipment staging areas should be located outside of stream and wetland boundaries,
m. Shorten and/or narrow construction widths through waters of the U.S., including jurisdictional wetlands.
n. Adherence to time of year restrictions in waters of the U.S.
o. Impacts and alternatives for placement of any dredged material or excess fill material (e.g., uplands, existing dredge material containment facilities, beneficial/innovative reuse, etc.)

2. Collision Protection System/Pier Protection: The Corps understands that the main piers near the navigation channels would have a collision protection system and recommends that you evaluate alternatives for pier protection. The Corps is currently reviewing a MDTA permit application which proposes pier protection at the existing Bay Bridge spans and that these structures may need to be removed when the old bridge spans are demolished. Therefore, the Corps recommends that demolition of these pier protection structures be included as an element of the LOD and that you quantify impacts to Waters of the U.S. associated with demolition and restoration. However, to the extent practicable, to minimize aquatic impacts and reduce project cost, MDTA should evaluate whether any or all of the proposed pier protection structures at the existing spans can be incorporated into the pier protection for the new Chesapeake Bay bridge spans. This information/analysis should be included in the Final EIS.

3. Jurisdiction and Delineation: The Corps recommends that MDTA and FHWA closely monitor any potential changes to the definition of waters of the U.S. Further, the final jurisdictional status of resources will be determined during permitting. All waters of the U.S., including jurisdictional wetlands, must be delineated within the project area in accordance with the 1987 Corps Wetland Delineation Manual and appropriate Regional Supplement.

4. Impacts: Temporary and permanent impacts to all waters of the U.S, including jurisdictional wetlands, shall be quantified for each project alternative. For streams and rivers (both temporary and permanent), include the stream classification (e.g., perennial, intermittent; rivers, lakes, ponds, etc.) and both the linear feet of the stream/river impacts (as measured along the centerline of the stream/river channel) and square feet of impact. For jurisdictional wetland impacts (both temporary and permanent), identify the wetland classification (e.g., palustrine or lacustrine system; forested, scrub-shrub, or emergent wetlands) to

be impacted, quantify each classification of wetlands to be impacted in square feet, differentiate between temporary or permanent impacts, and quantify any change in wetland classification in square feet (e.g., palustrine forested to palustrine emergent, etc.). Impacts associated with dredging shall also be quantified.

5. Cumulative Impacts: Cumulative, secondary, and indirect impacts resulting from the project along with historical impacts and existing land use must be analyzed with the watershed that contains the project.

6. Dredging and Dredge Material Disposal Sites: Describe the anticipated dredging for the project, methods (e.g., mechanical, hydraulic), cubic yards, physical/chemical analysis, dredge material disposal options, and proposed locations for any excess fill and/or dredged material resulting from project construction. Describe impacts and alternatives for placement of any dredged material or excess fill material (e.g., uplands, existing dredge material containment facilities, beneficial/innovative reuse, etc.).

7. Compensatory Mitigation: The Corps will require compensatory mitigation for all unavoidable adverse impacts to Waters of the U.S. A comprehensive compensatory mitigation plan must be described to offset the loss of waters of the U.S. The plan must describe the final mitigation amount required to offset loss of waters of the United States and must provide supporting information regarding the identification and quantification of those amounts. Information should also be provided regarding the ratio or function, or condition assessment or other suitable mitigation metric used to make this determination, if applicable. The mitigation plan shall be developed in accordance with the 2008 mitigation rule at 33 CFR 332.3. The Corps recognizes that there are no approved wetland or stream mitigation banks and/or ILF programs that have a service area within the resource review area; however, mitigation banks may become available during final design and/or permitting. The following additional mitigation opportunities have been identified in the DEIS: nature-based shoreline stabilization; SAV restoration/enhancement, oyster reef seeding, funding, and/or oyster reef creation; fish reef enhancement and/or creation; common reed eradication; fish passage restoration; and/or stream restoration. The Corps recommends that MDTA continue to coordinate with the Corps and the Maryland Department of Environment to evaluate potential compensatory mitigation options. The Corps cannot issue a permit for the proposed work until a final compensatory mitigation plan has been submitted and approved.

8. Effects on Corps Civil Works Projects (33 USC 408): The EIS should comprehensively evaluate the potential for effects on Corps Civil Works project (Section 408) and the project should be designed to avoid and minimize these effects to the maximum extent practicable. Please be advised that the project will require the submittal of a Section 408 request in accordance with Engineer

Circular 1165-2-220, Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects pursuant to Section 14 of the Rivers and Harbors Act 33 U.S.C. 408, dated September 10, 2018, for any proposed work that could impact the federal navigation channel. Information on the Section 408 process can be found at this link: https://www.nab.usace.army.mil/Missions/Regulatory/Section-408-Requests/. A Section 408 Request Form has also been provided as an enclosure with this letter (Enclosure 1).

9. A comprehensive description of anticipated impacts, avoidance/minimization measures, and construction means and methods for removing the two existing Chesapeake Bay bridge spans.

10. Optional Shared Use Path (SUP): The Corps attended two public hearings that were held for the Chesapeake Bay Crossing Study and was provided an opportunity to listen to those that offered testimony. During the public hearings the Corps heard extensive comments related and/or in favor of the optional SUP. The Corps strongly recommends that MDTA and FHWA take these comments under advisement during your evaluation of the optional SUP and in light of your project purpose. The project purpose and need focuses on five identified needs, one of which is mobility. The DEIS further identifies that there is lack of mobility and connectivity at the Bay Bridge for bicycle and pedestrian users.

Again, thank you for inviting the Corps participation as a Cooperating agency in the NEPA process and the opportunity to provide comments on the DEIS. We look forward to working with your agency as the Final EIS is prepared and the review of the project proceeds. If you have any questions concerning this letter, please contact me at (410) 962-0148 or April.E.Sparkman@usace.army.mil.

Sincerely,

April Sparkman

April E. Sparkman
Biologist, Maryland North Branch

Enclosure

To identify how we can better serve you, we need your help. Please take the time to fill out our customer service survey at: https://regulatory.ops.usace.army.mil/customer-service-survey/

DEPARTMENT OF THE ARMY
US Army Corps of Engineers
Baltimore District – Section 408 Request

INFORMATION REQUIRED TO PROCESS SECTION 408 REQUESTS
by private, public, tribal, or other federal entities to make alterations to, or temporarily or permanently occupy or use, any US Army Corps of Engineers federally authorized civil works projects pursuant to 33 USC 408

1. Purpose. The purpose of this document is to provide guidance for private, public, tribal, or other federal entities regarding the information the US Army Corps of Engineers (USACE) Baltimore District needs to complete a review pursuant to 33 USC 408 (Section 408). This review is necessary to obtain permission from the USACE Baltimore District for proposed alterations to any USACE federally authorized civil works project, referred to as a "USACE project" within this document.

2. Applicability. This guidance applies to alterations proposed within the lands and real property interests identified and acquired for the USACE project and to lands available for USACE projects under the navigational servitude. In the Baltimore District, USACE projects typically include: local protection projects consisting of levees, floodwalls, channel improvement, and interior drainage features; Federal navigation channels; and flood risk management projects consisting of earthen or concrete dams, outlet works, spillways, abutments, support facilities, and reservoir pool. Routine operations and maintenance activities specified in the O&M manual and performed by the non-federal sponsor or USACE do not require permission from USACE under Section 408.

3. References. Engineering Circular 1165-2-216, *Policy and Procedural Guidance for Processing Requests to Alter USACE Civil Works Projects pursuant to 33 USC 408*

4. Authority. The authority for the US Army Corps of Engineers to grant permission for temporary or permanent alterations to federally authorized civil works projects is contained in Section 14 of the Rivers and Harbors Act of 1899 and codified in 33 USC 408, which states that *"the Secretary [of the Army] may, on the recommendation of the Chief of Engineers, grant permission for the alteration or permanent occupation or use of any [work built by the United States] when in the judgment of the Secretary such occupation or use will not be injurious to the public interest and will not impair the usefulness of such work."* It is otherwise unlawful for any person or persons to take possession of or make use of for any purpose, or build upon, alter, deface, destroy, move, injure, obstruct, or in any manner whatever impair the usefulness of any work built by the United States.

5. Exclusions. Per Engineering Circular 1165-2-216, the following activities do not require permission from USACE under Section 408:
    a. Routine operations and maintenance activities specified in the O&M manual and performed by the non-federal sponsor or USACE
    b. Activities contained in 36 CFR 327, including the implementation of an approved USACE Project Master Plan, Shoreline Management Plan, or Operational Management Plan

DEPARTMENT OF THE ARMY
US Army Corps of Engineers
Baltimore District – Section 408 Request

6. Requester. A request for Section 408 permission can originate from a non-federal sponsor or an independent requester. For USACE projects with a non-federal sponsor, the requester must either be the non-federal sponsor or have the endorsement of the non-federal sponsor prior to a written request being submitted to USACE.

7. Request. The Requester must submit the information that follows for all requests to alter USACE projects within the Baltimore District. Requests must be in writing, signed, and submitted to the USACE Baltimore District Regulatory Point of Contact. Requests may be sent by regular mail or electronic mail for attachments under 10MB. Attachment A contains a comprehensive list of additional information that may be requested to facilitate the Section 408 review process. Attachment B provides an example of the local sponsor statement of no objection.

Points of Contact:

GOVERNMENT:

Name: Michael Danko
Organization: USACE Baltimore District
Title: Regulatory Point of Contact
Address: 401 East Louther Street, Suite 205
Carlisle, Pennsylvania 17013
Phone: (717) 249-8730
E-mail: mike.danko@usace.army.mil

REQUESTER:

Name: _____
Organization: _____
Title: _____
Address: _____
Phone: _____
E-mail: _____

LOCAL SPONSOR: (if not the Requester)

Name: _____
Organization: _____
Title: _____
Address: _____
Phone: _____
E-mail: _____

DEPARTMENT OF THE ARMY
US Army Corps of Engineers
Baltimore District – Section 408 Request

Project Description

USACE Project being altered, used or impacted: _____

City and State: _____

Stream, River or Water Body: _____

Proposed Project Name: _____

Latitude, Longitude: _____

USACE Project Type

_____ Local Protection Project** _____ Navigation _____ Flood Risk Management

****Have you obtained a Statement of No Objection from the Non-Federal Local Sponsor of the Local Protection Project? If no, please explain.**

_____

Note: Requests will not accepted as complete without this statement. See Attachment B for an example.

Brief description of the proposed work and how the USACE project will be altered
Note: Indicate if the proposed alteration is to a previously-modified feature (e.g., re-aligning a pipe through the embankment that had been installed as a modification to the project).

_____

_____

_____

Description of project alternatives (if any) that avoid impacts to the USACE project

_____

_____

_____

List of all real property interests
Note: Include maps clearly depicting both existing real estate rights and additional real estate required.

_____

_____

_____

_____

DEPARTMENT OF THE ARMY
US Army Corps of Engineers
Baltimore District – Section 408 Request

Approximate schedule for work (list activities by Month/Year)

_____

_____

_____

Describe operations and maintenance that will be required as a result of this alteration
Note: Requester is responsible for performing all operations and maintenance required as a result of the alteration, as well as for all associated costs. For local protection projects, the non-federal local sponsor is required to ensure that all required operations and maintenance associated with the alteration are adequately performed.

_____

_____

_____

Documents included with the alteration request
Note: USACE may request additional information as part of the review process.

General Project: Report _____ Plans _____ Specs _____ Drawings _____

Hydrology & Hydraulics: Report _____ Models _____

Geotechnical: Report _____ Drilling Plan _____

Other (describe): _____

Questions: **(Yes/No)**

1. Will the proposed project require the use of federal property? _____
2. Will the proposed project require the use of property owned by the non-federal sponsor? _____
3. Have any Environmental Reports been completed for this Project? If yes list below. _____
4. Are you required to pursue authorization pursuant to Sections 10/404/103? If yes, list date or anticipated date of application/pre-construction notification submittal. _____
5. Is this proposed project identified as a priority project in an established in-place funding agreement? If yes, provide documentation of the funding agreement and point of contact. _____
6. Are you seeking credit under Section 221 of the Flood Control Act of 1970 or other laws such as approval under Section 204 (f) of WRDA 1986? _____

DEPARTMENT OF THE ARMY
US Army Corps of Engineers
Baltimore District – Section 408 Request

Signature Block
Request is hereby made for permission to alter the USACE project as described in this form and supporting documentation. I certify that the information provided in this request is complete and accurate to the best of my knowledge. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the requesting organization and/or non-federal local sponsor.

REQUESTER:

_____
Name

_____
Organization

_____
Title

_____
Signature

_____
Date

LOCAL SPONSOR: (If not the requester, for local protection projects)

_____
Name

_____
Organization

_____
Title

_____
Signature

_____
Date

TO BE COMPLETED BY USACE

Date Received: _____
USACE Project Name: _____
Resource Manager or Local Sponsor: _____
Regulatory Permit Number: _____

DEPARTMENT OF THE ARMY
US Army Corps of Engineers
Baltimore District – Section 408 Request

8. USACE Review Criteria. USACE will review the alteration request for potential adverse impacts to the project based on the following criteria (as applicable):
   a. Reliability of the project to function as designed.
   b. Local sponsor and/or USACE ability to adequately inspect the project during normal conditions.
   c. Local sponsor and/or USACE ability to adequately inspect the project during potential or actual emergency conditions.
   d. Local sponsor and/or Requester ability to adequately operate and maintain the project.
   e. Local sponsor and/or Requester legal rights to enter and/or have contractors enter all properties affected, either through fee deed(s) or easement deed(s), which should be attached to this request.
   f. Local sponsor ability to conduct flood fighting operations and temporary repairs during an emergency.
   g. Alteration impacts to the structural or geotechnical integrity of project components (including embankment, floodwall, or retaining wall strength; slope stability; stone protection; crest elevation; miscellaneous structures, etc.).
   h. Alteration impacts on the hydraulic functioning of the project.
   i. Alteration impacts to a floodplain or floodway (flood risk management projects only).
   j. Alteration impacts on the interior drainage system or drainage facilities (i.e. outfalls, gate wells, storm sewer lines, pump stations, drainage ditches, etc.).
   k. Alteration impacts on environmental aspects of the project, including compliance with National Environment Policy Act (NEPA) requirements.
   l. Alteration impacts on safety aspects of the project.
   m. Alteration impacts to the real estate easement requirements, including project access.
   n. USACE Section 10/404 Regulatory permit requirements.
   o. Impacts to the public and other stakeholders.
   p. Other criteria as available.

9. USACE Review and Decision. Work or usage shall not begin until written approval from the USACE Baltimore District Commander, or his designee, is obtained. Upon completion of review of the request, the Baltimore District will send a letter from the District Commander, or his designee, either granting or denying the request for permission to alter the USACE project. If granted, the Requester's signature may be required on an Alteration Conditions Form to confirm acceptance of any special conditions required. If denied, reasons for not granting permission will be provided.

   If applicable, an Emergency Action Plan (EAP) must also be provided as a prerequisite to approval. Requestor must provide information about emergency response in the event of a flood during construction. This should include at a minimum: notification tree, stockpiled materials, how flooding will be anticipated, and specific activities at each phase of construction to restore flood risk reduction.

   USACE reserves the right to require construction inspections or meetings with the Local Sponsor, Requester, and other interested parties.

DEPARTMENT OF THE ARMY
US Army Corps of Engineers
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10. Special Conditions. The following are examples of special conditions, which may be included in the permission to alter, use, or impact a USACE project. Additional special conditions may be included depending on the nature of the work:
    a. Requester shall obtain all appropriate local, state, and Federal permits (or waivers from these permits) before performing the proposed alteration. USACE approval of the proposed alteration does not negate the need to obtain the aforementioned permits.
    b. Requester must notify the USACE Baltimore District at least fifteen (15) days before work/usage is started and receive approval to proceed from the designated Baltimore District point of contact. Time may vary depending on project.
    c. Requester shall provide copies of pertinent design, construction, and/or usage submittals/documents. Photographic documentation of the alteration work and the impacted project area may be requested to be taken before, during, and after construction.
    d. Requester must develop a safety plan prior to commencing the alteration and ensure that all officers, agents, employees, or others who may be present on the premises at their invitation are thoroughly familiar with the plan and follow it.
    e. No equipment or materials may be stored or stockpiled within 15 feet of the levee toe, floodwall, or any other flood protection project features without prior consent from the Corps.
    f. The Requester may be required to perform an inspection of the USACE project with the Baltimore District prior to the Requester's use of the project to document existing conditions.
    g. Alterations approved in this request shall be progressed in such a manner to avoid interference with the inspection, operation, and maintenance of the USACE project.
    h. Requester must schedule a final inspection with the Baltimore District within fifteen (15) days after completion of the alteration. Time may vary depending on project.
    i. Requester shall submit a copy of as-built drawings within 30 days of completion of work showing the new work as it relates to identifiable features of the USACE project.
    j. Requester shall remove all structures constructed on or within the USACE project upon completion of usefulness of such structures, if they no longer serve the purposes originally intended, or upon expiration of the agreement with USACE Baltimore District. The Requester shall restore the USACE project to its original condition after removal of these structures. Permanent alterations approved by USACE are excluded from this requirement, however must be maintained in good condition.
    k. Field work shall be coordinated with the designated USACE Baltimore District point of contact, to be determined prior to the start of work.
    l. Underground utility lines of any type that cross the levee shall have markers placed on the surface to indicate location, type, and usage of the line.

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ATTACHMENT A
Section 408 Request Supplemental Information

The following list is designed to assist you in providing a complete review package when submitting a Section 408 request to the USACE Baltimore District. The intent is to provide a comprehensive list of information our technical staff may need to complete the review process. The list below is not all inclusive and may not apply to every situation; our technical staff may request additional documentation. Please provide the information in this list to the extent possible and submit with your request.

A. General Documentation. Please provide at minimum the following items:
   1) Project Location Map (at least 8.5"x11") including:
      a) Aerial image with proposed project features
      b) City, county, and state
      c) Latitude and longitude
      d) Name of Stream, River or Body of Water
      e) River mile (if applicable)
   2) Project Description. Please provide a detailed and complete project description, including all areas of disturbance to the USACE project. Include areas to be used for ingress, egress, or staging of materials or equipment. Fully describe construction techniques to be used on the USACE project alteration. Include quantities and types of materials used as fill or removed from the site. Accurately describe any ground disturbing activity that will occur and provide acreage or lineal area of impact. Include maps, pictures, and figures as necessary to fully explain the proposed work.
   3) Right-of-Way Maps from agency responsible for operating and maintaining the facility
   4) Pre-final project plans and specifications
   5) Project schedule
   6) Photographs of current conditions at the site
   7) Written Statement of No Objection by the Local Sponsor

B. Real Estate
   1) List of all real property interests required to support the proposed alteration, including those in federally managed lands and those owned by the Requester.
   2) Maps clearly depicting both existing real estate rights and the additional real estate required.
   3) GIS shapefiles of the full project extents.
   4) Deed or other real estate instruments
   5) Agreements between the United States of America and Proponent
   6) Office of the Assessor Property Information Report
   7) Assessor's Parcel Number (APN)

C. Environmental Compliance
   1) List of any State or Federal Threatened or Endangered Species
   2) List of any noise sensitive receptors and provide description of the receptor and its distance from the source
   3) List and describe all Hazardous Toxic and Radioactive waste (HTRW) present at the site

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4) List all recreation amenities that would be impacted due to this alteration
5) List all public services that would be disrupted due to this alteration
6) Indicate whether public transportation will be impacted due to this alteration
7) Section 401 Certification
8) Air Quality Analysis
9) All cultural surveys conducted in the last five years
10) Tribal Contact List

D. Technical Analysis

1) Civil. Each submittal should clearly identify the existing condition of the dam and/or appurtenant structures to include plan, profile and design details of the proposed alteration in relation to the existing USACE project. Below are examples of information necessary to understand the existing and proposed conditions.
    a) Alteration location (Vicinity map and specific alteration location)
    b) Applicable datum
    c) Real estate interests, existing and to be acquired, needed for the proposed alteration
    d) Grading plans
    e) Layout plan, profiles, and cross-sections of the proposed alternation
    f) Previous inspection reports to assist in identifying existing deficiencies and their proximity to the proposed alteration
    g) Sections and details
    h) Temporary measures required during construction (bypasses, cofferdams, etc.)
2) Geotechnical. The following is a list of analyses or information that may be necessary to consider in evaluating geotechnical impacts if proposed alterations alter the dam embankment or penetrate the natural blanket or foundation.
    a) Erosion control (changes in erosive forces on a slope)
    b) Liquefaction susceptibility
    c) Material usage/borrow/waste/transport/hauling
    d) Placement of stockpiles, heavy equipment, or other surcharges
    e) Drilling plan
    f) Results of subsurface investigation – boring logs, test pit logs, laboratory test results, etc.
    g) Seepage analysis
    h) Settlement analysis
    i) Stability analysis
    j) Vegetation
3) Structural. The following is a list of analysis or information that may be necessary to evaluate the impacts of proposed alterations to concrete, sheet-piling, or drainage structures.
    a) Bridges and related abutments
    b) Design analysis for retaining walls and excavation support system
    c) Design of shallow or deep foundations, including bearing capacity and settlement analysis if the construction is located within the line of protection or right-of-way and creates potential seepage problems

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d) Design recommendations for foundations on expansive soils
e) Diaphragm walls
f) Gates or other operable features
g) Other structural components integral to the project
h) Pier penetrations of levee embankments
i) Stability analysis including sliding, overturning, bearing, flotation, uplift and any seismic load effects for any alteration to the channel walls and/or flood walls
j) Structural drainage control methods
k) Water stops and contraction/expansion joints

4) Hydrology and Hydraulics. The following factors may be considered when evaluating the hydrologic and hydraulic (H&H) impacts to a USACE project. Please provide an Executive Summary detailing how each of the below items is addressed and how your project impacts the USACE project. H&H models may be requested for review.
   a) Changes in inflow
   b) Changes in velocity
   c) Changes in water surface profiles and flow distribution
   d) Consideration of impacts to energy dissipation measures; hydropower generation; sedimentation; or navigation
   e) Scour Analysis
   f) Sediment transport analysis
   g) Upstream and downstream impacts of the proposed alterations
5) Operations, Maintenance and Flood Fighting. Alterations may change operation, maintenance or require special flood fighting procedures.
   a) Effects on existing maintenance access
   b) Effects on maintenance practices
   c) Flood contingency plan during construction, measures proposed to protect area under construction, monitoring of river level, river stage at which plan will be activated, materials and equipment to be used to activate plan, and personnel contact and telephone number to activate plan.
   d) Flood fighting requirements and practices
   e) Special inspection requirements
6) Potential Failure Mode Analysis. Depending on the proposed alteration, the requester may be required by the district to provide a potential failure mode analysis with the proposed alteration in place.
7) Review Plan. If the alteration will either 1) temporarily impair the purpose and function of the existing Federally-constructed project or 2) be a major repair, rehabilitation, relocation, replacement or modification of the existing Federally-constructed project, please provide the following:
   a) Independent External Peer Review (IEPR) Plan (Reference EC 1165-2-217)
   b) Design Quality Control Plan

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ATTACHMENT B
Local Sponsor Statement of No Objection

SUBJECT: Request to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408

TO: USACE Baltimore District Regulatory 408 POC

The <***Name of Non-Federal Local Sponsor***> (Sponsor) is the Non-Federal Local Sponsor to the U.S. Army Corps of Engineers Baltimore District for the <***Name of USACE Project***> Local Protection Project (USACE Project).

The Sponsor is aware of the Section 408 Request by <***Name of Requester***> to alter the USACE Project in order to complete the proposed <***Description of work to be performed and impacts to the local protection project***>.

The Sponsor does not object to the Section 408 Request nor its review by the U.S. Army Corps of Engineers. The Sponsor acknowledges continued responsibility for the operation and maintenance of the USACE Project at no cost to the government and will hold and save the government free from all damages arising from the construction, operation, maintenance, repair, rehabilitation, and replacement of the project.

_____
Printed Name

_____ _____
Signed Name Date

US ARMY CORPS OF ENGINEERS RESPONSE

The MDTA appreciates the input provided by the US Army Corps of Engineers (USACE) on the Tier 2 Study Draft EIS. In response to specific comments contained in USACE's comment letter, the MDTA offers the following response:

1. Thank you for your comment and confirmation of the Clean Water Act Section 404 requirements.

   Thank you for your comment. These items have been evaluated in the Draft and Final EIS in coordination with USACE throughout the NEPA process.

2. The Bay Bridge Protection Project (BBPP) for the existing Bay Bridge is separate from the pier protection measures that would be associated with new bridge spans for the Tier 2 Study. The protection system proposed as part of the BBPP is intended to remain in place and be incorporated as part of the protection system for a new crossing and was coordinated with the Tier 2 Study Preferred Alternative to avoid conflicts in foundation construction of a new crossing.

   Several types of pier protection were considered for the Bay Crossing Tier 2 Study including dolphins, islands, and fenders. During final design, a ship collision study will be performed to assess the specific requirements of the new structures to determine the recommended approach and design of the pier protection, including the incorporation of any structures that will be installed as part of the BBPP.

3. The MDTA will closely monitor any potential changes to the definition of waters of the U.S., including wetlands (WOTUS), and understands that all WOTUS will need to be delineated within the project area using the 1987 Corps Wetland Delineation Manual and appropriate Regional Supplement based on the WOTUS definition in effect during permitting.

4. The Final EIS includes planning level impacts to all waters of the U.S., including jurisdictional wetlands, for each build alternative. More detailed impacts, including square feet of temporary and permanent impact, will be provided in the future final design and permitting phases.

5. The Final EIS includes an analysis of reasonably foreseeable effects within the project watersheds.

6. Final EIS **Section 5.5.5.2** discusses the impacts associated with dredging and includes planning level impact quantities. Final EIS **Section 5.5.5.2** also identifies several dredged material placement sites that are accepting materials. The MDTA will prepare a Dredge Material Management Plan in the future final design and permitting phases, which will include final methods proposed, minimization measures specific to dredging operations, and detailed information regarding the transport and management of dredge material.

7. The MDTA has developed conceptual mitigation which is included in **Section 5** of the Final EIS and in the Preferred Alternative and Conceptual Mitigation (PACM) Concurrence Package. For Waters of the U.S. specifically, conceptual mitigation is discussed in Final EIS **Section 5.5.5**, Minimization and Mitigation. The conceptual mitigation opportunities identified in the Final EIS/Record of Decision will be used to develop a more detailed Final

Compensatory Mitigation Plan during final design and will be coordinated with USACE and other regulatory agencies during permitting.

8. **Section 5.5.5.3** of the Final EIS discusses Federally maintained navigational channels that are considered Section 408 projects. The MDTA will submit all required permits, including a Section 408 request, during the future permitting phase.

9. The anticipated impacts associated with removing the existing bridge spans are included in the resource impacts for all build alternatives in the Final EIS. Avoidance and minimization will continue through the future final design phase.

10. Thank you for your comment regarding the inclusion of a protected bicycle and pedestrian facility (shared-use path or SUP) with a new Bay Bridge. The MDTA has considered all public comments provided during the Draft EIS comment period, including those specifically related to the SUP.

    After approval of the Final EIS/ROD, the MDTA will perform financial analysis and determine whether an SUP will be implemented. If the SUP is included, additional coordination would occur among local, state, and Federal agencies regarding connections, parking, maintenance, and other features, as well as consistency with local pedestrian and bicycle plans, the 2025 Maryland State Transportation Trails Strategic Plan, and MDOT's Complete Streets Policy (See Final EIS **Section 3.3.1**).

US ENVIRONMENTAL PROTECTION AGENCY COMMENT

REGION 3
PHILADELPHIA, PA 19103

March 9, 2026

Alexander Bienko
Environmental Specialist
Federal Highway Administration
George H. Fallon Building
31 Hopkins Plaza, Suite 1520
Baltimore, Maryland 21201
alexander.bienko@dot.gov

Heather Lowe
Planning & Community Relations Manager
Maryland Transportation Authority
Division of Planning and Program Development
2310 Broening Highway
Baltimore, Maryland 21224
hlowe@mdta.state.md.us

RE: EPA Comments on the Draft Environmental Impact Statement for the Chesapeake Bay Crossing Study: Tier 2 NEPA, Anne Arundel and Queen Anne's County, Maryland, CEQ No. 20250190

Dear Mr. Bienko and Ms. Lowe:

The U.S. Environmental Protection Agency (EPA) has reviewed the above-referenced Tier 2 Study Draft Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA) and our NEPA review authority under Section 309 of the Clean Air Act (CAA). The CAA Section 309 role is unique to EPA. It requires the EPA to review and comment on the environmental impact of proposed federal actions subject to NEPA's EIS requirements and to make its comments public.

The Tier 2 Study Draft EIS evaluates measures to address transportation capacity needs and access across the Chesapeake Bay at the William Preston Lane, Jr. Memorial Bridge and its approaches within the U.S. 50/301 corridor. Based on the Tier 2 Study Draft EIS analysis of six build alternatives, the Study's lead agencies, the Federal Highway Administration (FHWA) and Maryland Transportation Authority (MDTA), have determined that Alternative C is the Recommended Preferred Alternative.

The EPA has served as a Cooperating Agency since December 2017 for the Tier 1 Study and since June 2023 for the Tier 2 Study. (23 U.S.C. 139(d); 42 U.S.C. 4336a(a)(3)). The EPA attended numerous interagency meetings and site visits and reviewed draft documents to support the project's efficient environmental review under 23 U.S.C 139(d)(9) (Efficient Environmental Reviews for Project Decision Making and One Federal Decision) and 42 U.S.C. 4336a (NEPA). Recent participation includes the agency's review of the Draft EIS Notice of Intent (January 2025), Draft Analysis Methodologies and Technical Reports (July 2023 through July 2025), and the Administrative Draft EIS (September 2025). We thank the FHWA and MDTA for addressing many of our comments and appreciate this opportunity to review and comment on the Draft EIS.

We provide the following recommendations on the Draft EIS.

Water Resources

In accordance with 23 U.S.C. 139 and 42 U.S.C. 4336a, the combined Final EIS and Record of Decision (ROD) should serve as a single environmental document that provides sufficient information and analysis to inform concurrent agency reviews and timely project authorizations. The EPA recommends the combined Final EIS and ROD include the most current information to assist the EPA in the review of the U.S. Army Corps of Engineers' authorization for the project under the Clean Water Act Section 404 and Rivers and Harbors Act Section 10. The combined Final EIS and ROD would benefit from information to support a determination on whether the Preferred Alternative is the least environmentally damaging practicable alternative and the mitigation necessary to compensate for its unavoidable impacts, per the Clean Water Act Section 404(b)(1) Guidelines (40 C.F.R. 230).

We recommend information about the proposed type and water resource impacts of pier protections for the Tier 2 Study should be documented consistently throughout the combined Final EIS and ROD. We also recommend the combined Final EIS and ROD clarify, as appropriate, how MDTA's recently initiated pier protection project at the existing bridge will be coordinated with the Tier 2 Study Preferred Alternative, with respect to the discharge of dredged and fill material requiring Section 404/Section 10 permit authorization and 401 Water Quality Certification.

The EPA appreciates this opportunity to review the Draft EIS and continue supporting the Tier 2 Study's efficient environmental review. Looking ahead, we will ensure our timely response to MDTA's upcoming request for Cooperating Agency concurrence on Alternative C as the Preferred Alternative, as well as timely review of the combined Final EIS and ROD in November 2026.

If you have any questions or would like to discuss these recommendations, please contact me at witman.timothy@epa.gov or (215) 814-2775 or Rebecca Souto-Glyn at glyn.rebecca@epa.gov or (215) 814-2795.

Sincerely,

Digitally signed by TIMOTHY WITMAN
Date: 2026.03.09 13:43:24 -04'00'

Timothy Witman
Manager, NEPA and Technical Assistance Branch
U.S. EPA Mid-Atlantic Region 3

2

US ENVIRONMENTAL PROTECTION AGENCY RESPONSE

The MDTA appreciates the input provided by the US Environmental Protection Agency (EPA) on the Tier 2 Study Draft EIS. In response to specific comments contained in EPA's comment letter, the MDTA offers the following response:

Water Resources

The USACE and other cooperating agencies were involved in the development of the EIS and have concurred on the Preferred Alternative and Conceptual Mitigation (PACM). Concurrence on this milestone confirms that no alternative needed for permitting purposes has been eliminated. It is anticipated that the EIS can be used by any of the cooperating agencies for their NEPA approvals concurrent with permitting or other Federal actions, consistent with 23 U.S.C. 139 and 42 U.S.C. 4336a.

Final EIS **Section 4.1.1** discusses why the Preferred Alternative is anticipated to be the least environmentally damaging practicable alternative (LEDPA); however, the USACE and EPA would make that determination as part of their project review.

Final EIS **Section 5** includes proposed conceptual mitigation in the Minimization and Mitigation section for each resource where mitigation is required. The conceptual mitigation opportunities identified in the Final EIS/Record of Decision will be used to develop a more detailed Final Compensatory Mitigation Plan during final design and will be coordinated with USACE and EPA during permitting.

The limits of disturbance developed for the Alternatives Retained for Detailed Study (ARDS) include anticipated space needed for bridge piers, pier protection, and temporary construction activities associated with a new bridge. The limits of disturbance were used to calculate anticipated in-water impacts from all proposed activities caused by the Tier 2 Study alternatives (including pier protection). Details of potential pier protection structures for the new Bay Bridge will be developed during final design and permitting and will be coordinated with agencies at that time.

The Bay Bridge Protection Project (BBPP) for the existing Bay Bridge is separate from the pier protection measures that would be associated with new bridge spans for the Tier 2 Study. The protection system proposed as part of the BBPP is intended to remain in place and be incorporated as part of the protection system for a new crossing and was coordinated with the Tier 2 Study Preferred Alternative to avoid conflicts in foundation construction of a new crossing.

QUEEN ANNE'S COUNTY COMMENT

Queen Anne's County

County Commissioners:
James J. Moran, At Large
Jack N. Wilson, Jr., District 1
J. Patrick McLaughlin, District 2
Philip L. Dumenil, District 3
Christopher M. Corchiarino, District 4

DEPARTMENT OF PUBLIC WORKS
312 Safety Drive
Centreville, MD 21617

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Fax: (410) 758-3441
www.qac.org

MEMORANDUM

Date: March 9, 2026
To: Heather Lowe, Planning & Community Relations Manager
Maryland Transportation Authority

From: Steve Cohoon, Public Facilities Planner

Re: Bay Crossing Study Draft Environmental Impact Statement (DEIS)
Tier 2 National Environmental Policy Act (NEPA)

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for the Bay Crossing Study.

Queen Anne's County offers the following comments.

1. The County Commissioners have documented their support for adding capacity to the Bay Crossing to relieve congestion and improve mobility in and through Queen Anne's County.
2. The proposed alternatives evaluated in the DEIS, except for the no build alternative, are generally consistent with the goals and objectives of the 2022 Queen Annes County Comprehensive Plan.
3. The preferred alternative proposes widening of 2.25 miles of the US 50/301 corridor in Queen Anne's County and not the entire 10 miles in the study area. Planning should continue for future widening of US 50/301 from Cox Creek to Queenstown.
4. The preferred alternative proposes a new merge condition near Cox Creek (eastbound) and Oceanic Drive (westbound).
    a. Please provide information on the potential for new congestion at the new merger locations as traffic volumes increase.
    b. Please provide information on the anticipated trip diversion onto local roads as a result of this new merge condition.
5. Queen Annes County appreciates the continued opportunity to review and comment on the proposed property impacts, road improvements and multimodal improvements as additional detailed information becomes available during engineering and design.

Additional information elaborating on each of these points is listed below.

The County Commissioners have documented their support for adding capacity to the Bay Crossing to relieve congestion and improve mobility in and through Queen Anne's County.

For many years the Annual MDOT Priority letter from the Queen Annes County Commissioners to the Secretary of Transportation has identified the top transportation priority for the County is to address congestion at the Bay Bridge and in the Bay Bridge Corridor. The priority letter fully supports construction of two new replacement bridges to add the needed capacity to reduce congestion and improve mobility. The May 13, 2025 priority letter encourages quick completion of the National Environmental Protection Act (NEPA) Tier 2 study process so design, engineering and construction of replacement bridges can begin. The letter also asks that locally planned improvements be incorporated into the project as it moves forward. The May 13, 2025 letter states:

> *"It is vital to the safety and mobility of Queen Anne's County Citizens that continued steps be taken to quickly complete the Bay Crossing Study Tier II NEPA process and move directly into design and engineering for the corridor improvements. It is essential to establish funding and a schedule for the design and engineering of the preferred alternative to begin immediately following the NEPA process."*
>
> *"As the Tier II NEPA study moves towards selecting a preferred alternative for corridor improvements please continue to review and include transportation improvements identified in the locally adopted public policy documents such as the Queen Anne's County Comprehensive Plan, Kent Island Transportation Plan and the Queen Anne's County Pedestrian and Bicycle Master Plan."*

The DEIS is an essential first step in selecting a preferred alternative and establishing the limits of disturbance. A significant amount of information related to appearance, design, engineering, construction and impacts to property will be forthcoming as the project moves forward. Queen Anne's County would like to participate in the review, comment and where appropriate, decision making as the information becomes available to ensure continued consistency with local plans.

The proposed alternatives evaluated in the DEIS, except for the no build alternative, are generally consistent with the goals and objectives of the 2022 Queen Annes County Comprehensive Plan.

The DEIS evaluates alternatives for a new bay crossing to add capacity and to relieve congestion at the Chesapeake Bay Bridge consistent with the requirements of NEPA. The purpose and need identifies that the NEPA Tier 2 study is to evaluate viable alternatives that will address and improve:

- Adequate capacity and reliable travel times,
- Mobility,
- Roadway Deficiencies,
- Existing and future maintenance needs, and
- Navigation

While considering

- Environmental Responsibility, and
- Cost and Financial Responsibility

In general, the thousands of pages of documentation that make up the DEIS (chapters, appendix and supporting technical reports) provide an extensive study that has gathered and fully evaluates all aspects of potential impacts related to a new bay crossing and included a significant public process. The DEIS provides for a comprehensive inventory of environmental, cultural, land use, noise, socioeconomic and transportation related factors in the 2 mile wide, 20 mile long study area in Anne Arundel and Queen Anne's County.

The purpose and need identified in the DEIS as well as the supporting information related to alternatives works to move forward goals and objectives in the Queen Anne's County Comprehensive Plan.

In general, all options evaluated in the DEIS other than the "no build alternative" are generally consistent with the Comprehensive Plan because they work to:

- Improve safety, mobility, accessibility, and resiliency in the transportation network (Chapter 6, Goal 6-1)
- Strongly support resolutions to traffic problems caused by through traffic that impedes local traffic and citizen movements. (Chapter 6, Goal 6-1, Strategy 1)
- Support implementation of priority transportation improvement projects through partnerships with the State, adjacent counties, and key stakeholders. (Chapter 6, Goal 6-1, Strategy 1.2)
- Create safe and adequate infrastructure available to all modes of travel, in part by Working with MDOT SHA to reduce crashes, and improve local traffic mobility. (Chapter 6, Goal 1-2, Strategy 2.2)
- Protect neighborhood streets from through traffic and decrease congestion delays (Chapter 6, Goal 6-1, Strategy 4)
- Develop transportation studies that identify capital projects consistent with PlanQAC and its Future Land Use Plan. (Chapter 6, Goal 6-1, Strategy 5)
- Identify capital projects that are consistent with PlanQAC and annually prioritize projects in the County Transportation Priority Letter to MDOT SHA. (Chapter 6, Goal 6-1, Strategy 5)
- Continue to provide opportunities for public involvement in the planning, design, and construction of transportation improvements. (Chapter 6, Goal 6-1, Strategy 5)
- Enhance the transportation network for all users. (Chapter 6, Goal 6-2)
- Plan, design, improve, manage, maintain, and expand transportation infrastructure to meet the needs of residents and businesses. (Chapter 6, Goal 6-1, Strategy 1)
- Provide commuters a reliable route to other metropolitan areas while ensuring delivery access to the Eastern Shore, major airports, and warehouse facilities and other markets. (Chapter 6, Goal 6-1, Strategy 1.7)
- Promote safe and convenient bicycle and pedestrian access throughout the transportation system and programs. (Applicable to the SUP Option) (Chapter 6, Goal 6-1, Strategy 2)
  Minimize the loss of historic and archeological sites. (Chapter 7, Goal 7-4)
- Enhance County information maintained on historic sites, landmarks, cemeteries, archaeological sites, and scenic byways. (Chapter 7, Goal 7-4 Strategy 1)

The preferred alternative proposes widening of 2.25 miles of the US 50/301 corridor in Queen Anne's County and not the entire 10 miles in the study area. Planning should continue for future widening of US 50/301 from Cox Creek to Queenstown.

The alternatives that propose more improvements, relieve congestion for longer periods of time and accommodate higher traffic volumes resulting in less diversion trips onto local roads, go farther to comply and implement the goals of the comprehensive plan.

When considering the 3 alternatives,

> The **6-8-6 alternative** proposes widening bridge capacity from 5 lanes to 8 lanes and widening approximately 2.25 miles of US 50/301 in Queen Anne's County
>
> The **8-8-8 alternative** proposes widening bridge capacity from 5 lanes to 8 lanes and widening approximately 10 miles of US 50/301 in Queen Anne's County
>
> The **8-10-8 alternative** proposes widening bridge capacity from 5 lanes to 10 lanes and widening approximately 10 miles of US 50/301 in Queen Anne's County

Building two new bridges for the replacement of the aging structures and comprehensive widening a 20 mile long corridor is a monumental undertaking as proposed in the 8-8-8 and 8-10-8 alternatives. Selection of the 6-8-6 alternative has the least amount of environmental impact and cost because it results in the least amount of construction in the near term. It is also understood that the study shows that the 6-8-6 option significantly reduces congestion at the Bay Bridge in the target year of 2045, when the bridges are just opening. However, it is important to consider that with the construction of new bridges with an anticipated life cycle of 100 years or more, additional highway widening will be needed to support this corridor in the future. Planning improvements based on projected traffic in the year 2045 only considers conditions at the very beginning of the life cycle of the new bridges. If widening is not considered or at least planned as part of this process, then State Highway Administration will need to take years to begin and complete another planning process for highway widening, interchange replacement and exit ramp improvements. Please consider how MDTA and SHA can plan to implement the widening of the US 50/301 corridor as part of this project or as a companion project that coincides with construction of the Bay Bridges. Planning the entire 10-mile corridor now for potential highway widening and related improvements would help avoid the need for additional studies in the future. By addressing the needs of the full corridor upfront, MDOT, the State Highway Administration, the County, and residents could significantly streamline and accelerate the later planning, design, funding, and implementation of any required improvements. This is consistent with Comp Plan Goal 6-1, Strategy 4.3 "Work with MDOT SHA and the MDTA to develop a US 50/301 Corridor Plan to help move traffic through the County."

Widening of US 50/301 not addressed by MDTA as part of the Bay Crossing Study should be included in all appropriate Federal and State Transportation Planning Documents such as the Long Range

Transportation Plan(LRTP), Maryland Transportation Plan, Highway Needs Inventory and Consolidated Transportation Plan.

The preferred alternative proposes a new merge condition near Cox Creek (eastbound) and Oceanic Drive (westbound).

> **Please provide information on the potential for new congestion at the new merger locations as traffic volumes increase.**
>
> **Please provide information on the anticipated trip diversion onto local roads as a result of this new merge condition.**

For many years we have seen how the existing merge condition going from six highway lanes to five lanes on the bridge has operated as a bottleneck slowing traffic and creating backups. The proposed 6-8-6 alternative removes this condition and improves traffic flow onto the bridges. However, it creates new merge conditions as the highway will transition from 4 lanes in each direction to 3 lanes near Oceanic Drive (westbound) and Cox Creek (eastbound). We are concerned that the merger from 4 lanes to 3 lanes will become a future bottleneck as traffic volumes increase.

Because this new merge point would be located in central Kent Island, Queen Anne's County is concerned that as eastbound traffic on the US 50/301 corridor slows due to the merge, drivers may divert onto local roads to bypass the congestion. This could create new traffic and congestion problems in areas that do not currently experience them, such as Postal Road and Maryland 18, neither of which have the capacity to manage diversion trips coming off the US 50/301. Even short backups at this location could impact local roads by trip diversion onto MD 8 to access MD 18 in an effort to avoid congestion on US50/301. Likewise, the westbound merger could result in diversion trips onto local side roads. Has this future condition been evaluated? Is there a projection on when (what year) this merge condition may begin slowing traffic and generating congestion? Will future mitigating improvements be implemented on MD 18 as proposed in the MDOT MD 18 Planning and Environmental Linkages (PEL)? The County would like to fully understand the potential and anticipated timing of this congestion in relation to the comprehensive plan goals below.

- Improve safety, mobility, accessibility, and resiliency in the transportation network (Chapter 6, Goal 6-1)
- Strongly support resolutions to traffic problems caused by through traffic that impedes local traffic and citizen movements. (Chapter 6, Goal 6-1, Strategy 1)

Widening and improvements to MD 18 to address anticipated diversion trips should be included in all appropriate Federal and State Transportation Planning Documents such as the Long Range Transportation Plan(LRTP), Maryland Transportation Plan, Highway Needs Inventory and Consolidated Transportation Plan.

Queen Annes County appreciates the continued opportunity to review and comment on the proposed property impacts, road improvements and multimodal improvements as additional detailed information becomes available during engineering and design.

MD 8 Interchange

Comprehensive Plan Goal 6-1, Strategy 5, identifies that the County should "With assistance from the State, implement improvements to MD 8 and its interchange with US 50/301."

The MD 8 overpass, that is within the Limit of Disturbance (LOD) of the preferred alternative, is aging and has limited capacity for northbound left turns onto US 50/301. As more information becomes available on the condition of the existing overpass and any proposed new traffic pattern (at time of construction of the 1st and 2nd bridges) Queen Anne's County would like the opportunity to review and provide input on any proposed improvements.

Improvements could consider adding a double left turn onto US 50/301 to improve traffic flow. Also, if the aging overpass is in need of replacement, then could a divergent diamond configuration be considered as recommended in the Kent Island Transportation Plan?

Continued Support and Implementation of US 50/301 Summer Ramp Management

The summer weekend ramp management project has been successful in reducing diversion trips from US 50/301 onto MD 8. Acknowledging that the proposed preferred alternative does not eliminate westbound congestion in the corridor on summer weekends it will be necessary to continue to implement the Summer Ramp Management Partnership between MDOT and Queen Anne's County. As design for highway improvements continues, please consider including alternative ways to implement ramp management including gates, signage and markings.

The continuation of the ramp management partnership implements the Comprehensive Plan goal to "Protect neighborhood streets from through traffic and decrease congestion delays" by "Work with MDOT SHA and the MDTA to develop a US 50/301 Corridor Plan to help move traffic through the County." (Comprehensive Plan Goal 6-1, Strategy 4 & 4.3)

Bicycle and Pedestrian Improvements

If the Shared Use Path (SUP) proposed as an option in the preferred alternative continues to move forward, please review Comprehensive Plan Goal 6-2, Strategy 2 that "Promotes safe and convenient bicycle and pedestrian access throughout the transportation system and programs".

If the SUP advances to design, it should connect to the existing Cross Island Trail and/or South Island Trail for continuity of the users. Also, information will need to be provided on the anticipated number of users so supporting infrastructure such as parking and restroom facilities can be planned. MDOT and the County will need to coordinate on the planning of operations and maintenance as well.

US 50/301 Pedestrian Overpass

Queen Anne's County will be working directly with MDOT to plan and design a pedestrian overpass west of MD 8 connecting Pier One Road to Terrapin Park over US 50/301. Highway widening is proposed in this area, therefore, continued coordination will be essential to ensure that design and engineering of each project fully consider the impacts and progress of both projects.

Consider Complete Streets Implementation on Service Roads & MD 8 in the LOD

Complete streets policies to improve multimodal transportation on the service roads within the LOD (Thompson Creek, Sherman Drive, Shopping Center Drive) should be addressed as the project moves forward. Specifically, the consideration of improvements for multimodal users.

This supports Comprehensive Plan Goal 6-3, Strategy 1.1. "Apply a complete streets philosophy to identify multimodal transportation solutions for both rural roads and those in Growth Areas and making connections to and from residential neighborhoods to employment and commercial centers"

Public Property Impacts

A number of public properties (parks, schools, pump station, utilities, county roads) are impacted by the LOD for the preferred alternative. The LOD shown does not provide information on the nature of the impact and if it is temporary or permanent. Queen Anne's County will work with MDOT to fully review, discuss and comment on any impact to public property as information becomes available and the project continues.

Thank you for the opportunity to offer comments on the DEIS. Queen Anne's County appreciates the involvement in the planning process for the new bay crossing. We look forward to continuing to work with MDOT as the project moves forward.

Any comments or questions related to the comment above can be directed to:

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312 Safety Drive
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QUEEN ANNE'S COUNTY RESPONSE

1. **The County Commissioners have documented their support for adding capacity to the Bay Crossing to relieve congestion and improve mobility in and through Queen Anne's County.**

Thank you for your comment. The MDTA is continuing to include Queen Anne's County through the agency coordination process and the monthly coordination meetings.

2. **The proposed alternatives evaluated in the DEIS, except for the no build alternative, are generally consistent with the goals and objectives of the 2022 Queen Annes County Comprehensive Plan.**

Thank you for your comment.

3. **The preferred alternative proposes widening of 2.25 miles of the US 50/301 corridor in Queen Anne's County and not the entire 10 miles in the study area. Planning should continue for future widening of US 50/301 from Cox Creek to Queenstown.**

The MDTA will continue to work with SHA to evaluate roadway needs and traffic operations along U.S. 50/301 approaching the Bay Bridge, outside of this study. SHA will also continue to coordinate with Queen Anne's County on the temporary ramp closures during the Summer Ramp Management initiative.

4. **The preferred alternative proposes a new merge condition near Cox Creek (eastbound) and Oceanic Drive (westbound). Please provide information on the potential for new congestion at the new merger locations as traffic volumes increase.**

Today, each lane on the Bay Bridge has a lower capacity, by a factor of approximately 30 percent, than a lane on the approach roadways on the Eastern and Western Shores. Factors which reduce the capacity on the bridge include the uphill grade, lack of shoulders, horizontal curve, speed limit, and lane restrictions for heavy vehicles. The physical environment, including the view from the bridge, also contributes to the reduction in capacity. While some of these factors are expected to be improved by the Preferred Alternative, most of them are expected to remain, with the result being that a lane on the new bridge in the Preferred Alternative will still be expected to have a lower capacity than a lane on the approach roadways. The Preferred Alternative addresses this by providing four lanes in each direction on the bridge, while tying into the existing three lanes in each direction on U.S.

50/301. It is anticipated that, if traffic moves smoothly in three lanes approaching the bridge, it will move smoothly in the four lanes on the bridge, and also move smoothly in the three lanes beyond the bridge, after the fourth lane is dropped. This is the condition which is expected on Non-Summer Weekdays in 2045, in both directions of travel. It is also the condition expected on Summer Fridays, in the eastbound direction. Congestion is expected in the westbound direction on Summer Sundays, due to a bottleneck beyond the Bridge at Bay Dale Drive, which would be expected to back up through the westbound lane drop, and across the Bridge.

As described above, the new merge proposed for just east of Cox Creek is not expected to be congested in 2045. Thus, no diversion onto local roads would be expected where there are proposed merges.

If volumes were to increase to the point that there was congestion at the merge on Kent Island, diversion would be expected at ramps prior to the merge. Such diversion could occur at Thompson Creek Road and/or MD 8. Diversion would not be expected at Cox Creek Road, because that ramp is located beyond the proposed merge. Once traffic is beyond a congested merge, it should flow relatively well.

On non-summer weekdays, if volumes were to increase to the point that there was congestion at the merge in Anne Arundel County, diversion would be expected at Oceanic Drive (the ramp immediately prior to the merge). On summer weekend days, congestion from the Bay Dale Drive interchange will back up through the merge, and diversion would be expected.

Travel demand forecasts beyond 2045 have not been prepared for the Bay Crossing Tier 2 Study. When the Tier 2 Study was initiated, 2045 was the most distant future year for which forecasts were available from the Maryland Statewide Transportation Model.

The Preferred Alternative does not preclude any of the transportation improvements identified in these documents, but does not explicitly include them. The MDTA will continue to work with state and local agencies to enable continued compatibility among these initiatives.

5. Queen Annes County appreciates the continued opportunity to review and comment on the proposed property impacts, road improvements and multimodal improvements as additional detailed information becomes available during engineering and design.

MD 8 Interchange

The MD 8 interchange is included within the limits of Alternative C, but the MD 8 overpass bridge is not anticipated to be reconstructed at this time. The proposed typical section associated with the Preferred Alternative would fit underneath the existing MD 8 overpass; thus, reconstruction would not be necessary. The interchange is included within the LOD to allow for the ramps to be realigned as necessary to tie into the wider footprint of U.S. 50/301 and any other construction needed in this area. Any future reconstruction of the MD 8 overpass bridge would be determined by SHA.

Continued Support and Implementation of US 50/301 Summer Ramp Management

The MDTA will continue to work with state and local agencies to enable continued improvement in traffic operations along U.S. 50/301, including through the Summer Ramp Management initiative.

Bicycle and Pedestrian Improvements

Thank you for your comment regarding the inclusion of a protected bicycle and pedestrian facility (shared-use path or SUP) with a new Bay Bridge. The MDTA has considered all public comments provided during the Draft EIS comment period, including those specifically related to the SUP.

After approval of the Final EIS/ROD, the MDTA will perform financial analysis and determine whether an SUP will be implemented. If the SUP is included, additional coordination would occur among local, state, and Federal agencies regarding connections, parking, maintenance, and other features, as well as consistency with local pedestrian and bicycle plans, the 2025 Maryland State Transportation Trails Strategic Plan, and MDOT's Complete Streets Policy (See Final EIS **Section 3.3.1**).

US 50/301 Pedestrian Overpass

Thank you for your comment regarding the U.S. 50/301 Pedestrian Overpass. The MDTA agrees that Queen Anne's County and MDOT should continue to coordinate regarding the design and engineering of both projects to ensure they do not conflict with each other.

Consider Complete Streets Implementation on Service Roads & MD 8 in the LOD

The MDTA considered the MDOT and County Complete Streets policies when evaluating the frontage roads that need to shift as a result of U.S. 50/301 widening. Although Thompson Creek Road, Sherman Drive, and Shopping Center Drive are included within the limits of disturbance (LOD) for the Preferred Alternative, it is not anticipated that any of these frontage roads would be shifted. These roads were included within the LOD to accommodate the construction along U.S. 50/301, but it is anticipated that impacts to these roads would be temporary. As a result, pedestrian and bicycle accommodations were not included along these roads, but are not precluded from being constructed as part of a different project in the future.

Public Property Impacts

At this time, the limits of disturbance (LOD) have not been separated into temporary and permanent impacts. It is anticipated that this refinement will occur as the project advances into design. The MDTA looks forward to coordinating with Queen Anne's County on permanent and temporary impacts to public property as this detail becomes available in design.

CITY OF ANNAPOLIS COMMENT

From testimony provided February 10, 2026:

I'm here in my capacity as Chief of Comprehensive Planning for the City of Annapolis. In my work for the city, I do plans, policies, projects, aimed at making the city a more resilient, healthy, equitable place in a region. When I talk to community members, the most straightforward way they can envision that is a place, a home, a region that is safer for pedestrians and cyclists. We completed a comprehensive plan, 10 year comprehensive plan, just a couple years ago that was unanimously adopted by our city council in 2024. That included content related to the Bay Crossing, advocating for an alternative where the shared use path for bikes and pedestrians is not optional, and advocating for dedicated transit lanes. I believe this shared use path on the bay crossing would have a similar effect. I want to commend MDTA for a comprehensive process and looking at all of the costs and benefits of this project, but I do want to make sure that you're looking at all of the benefits of a shared use path. I think it could be transformative. And to be totally candid, I think to not do that would be the greatest missed opportunity, my planning career, and it would be hard to defend that decision to my daughter who's 10 years old and an avid cyclist.

CITY OF ANNAPOLIS RESPONSE

The MDTA appreciates the input provided by the City of Annapolis on the Tier 2 Study Draft EIS. In response to specific comments contained in the City of Annapolis' testimony, the MDTA offers the following response:

Thank you for your comment regarding the inclusion of a protected bicycle and pedestrian facility (shared-use path or SUP) with a new Bay Bridge. The MDTA has considered all public comments provided during the Draft EIS comment period, including those specifically related to the SUP.

After approval of the Final EIS/ROD, the MDTA will perform financial analysis and determine whether an SUP will be implemented. If the SUP is included, additional coordination would occur among local, state, and Federal agencies regarding connections, parking, maintenance, and other features, as well as consistency with local pedestrian and bicycle plans, the 2025 Maryland State Transportation Trails Strategic Plan, and MDOT's Complete Streets Policy (See Final EIS **Section 3.3.1**).