

# Appendix D.7

## Natural Environment Technical Report Attachments

### BALTIMORE-WASHINGTON SUPERCONDUCTING MAGLEV PROJECT

DRAFT ENVIRONMENTAL IMPACT STATEMENT AND  
SECTION 4(f) EVALUATION



U.S. Department of Transportation  
**Federal Railroad Administration**



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## **ATTACHMENT A – AGENCY CORRESPONDENCE**

# **Coordination Sheet for Maryland Department of Natural Resources, Environmental Review Unit information on fisheries resources, including anadromous fish, related to project locations and study areas**

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DATE OF REQUEST: June 22, 2018

NAME: Joanna Hiebler / Angela Chaisson

PHONE: 410-891-9284 / 240-439-0113

**PROJECT NAME / LOCATION / DESCRIPTION:** The Federal Railroad Administration, in coordination with the Maryland Department of Transportation, is preparing an Environmental Impact Statement for the proposed Baltimore-Washington Superconducting Magnetic Levitation (SCMAGLEV) Project between Baltimore, Maryland and Washington, DC, with an intermediate stop at the Baltimore/Washington International Thurgood Marshall Airport. The proposed SCMAGLEV passenger train system is being designed to provide an approximately 15-minute trip service between new Baltimore and Washington stations. SCMAGLEV trains would run on a dedicated guideway with bi-directional service, utilize an automatic train control system, and would have no at-grade crossings. Implementation of the project would also include construction of power substations, vent plants, one rolling stock depot (RSD), and other maintenance and/or ancillary facilities.

The attached zip file with shapefiles shows one overall encompassing project area boundary around both alignments under consideration (including the vent plants/connector guideways/cut and cover portal tunnels in transition areas, etc.) with a 100-foot buffer around those alignments, including the deep tunnel portions of the alignment. The project area boundary also includes the Limits of Disturbance (LOD) for two alternative locations for the proposed RSD, although there is no buffer for these area because impacts will not extend beyond the LOD of the selected RSD alternative.

**LAT/LONG:** Northern end of project area: 76°36'56.345"W 39°17'15.988"N  
Southern end of project area: 77°1'42.215"W 38°54'2.749"N

**NAME OF STREAM(S) (and MDE Use Classification) WITHIN THE STUDY AREA:**

- Beck Branch – Use Class I
- Beaverdam Creek and unnamed tributaries – Use Class I
- Patuxent River and unnamed tributaries – Use Class I
- Cabin Branch and unnamed tributaries – Use Class I
- Little Patuxent River and unnamed tributaries – Use Class I-P
- Little Patuxent River – Use Class
- Unnamed tributary to Holly Creek – Use Class I
- Dorsey Run and unnamed tributaries – Use Class I-P
- Stony Run – Use Class
- Cabin Branch – Use Class

**SUB-BASIN (8 digit watershed):**

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- 02060003 – Gunpowder-Patapsco
  - 02060004 – Severn
  - 02060006 – Patuxent
  - 020700010 – Middle Potomac-Anacostia-Occoquan
-

DNR RESPONSE (sections below to be completed by MD DNR):

\_\_\_ Generally, no instream work is permitted in Use I streams during the period of March 1 through June 15, inclusive, during any year.

\_\_\_ Where presence of yellow perch has been documented in the vicinity of an instream project area, generally no instream work is permitted in Use I and Certain Use II waters during the period of February 15 through June 15, inclusive, during any year.

\_\_\_ Generally, no instream work is permitted in Use III streams during the period of October 1 through April 30, inclusive, during any year.

\_\_\_ Generally, no instream work is permitted in Use IV streams during the period of March 1 through May 31, inclusive, during any year.

\_\_\_ Other applicable site specific time of year restriction information:

ADDITIONAL FISHERIES RESOURCE NOTES:

ADDITIONAL COMMENTS ON BEST MANAGEMENT PRACTICES:

MD DNR, Environmental Review Unit signature

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DATE: -----

## Meeting Minutes

|              |   |
|--------------|---|
| Subject      | SCMAGLEV DNR Meeting  |
| Date         | March 19, 2018  |
| Time         | 12:30pm- 2:30pm   |
| Location     | Maryland Dept. of Natural Resources<br>Tawes State Office Building  |
| Attendees    | Greg Golden, DNR Environmental Review<br>Lori Byrne, DNR Wildlife & Heritage<br>John Mullican, DNR Freshwater Fisheries<br>Shane Johnston, DNR MD Parks<br>Jon Chapman, DNR MET<br>Matthew Mielke, FRA/Booz Allen<br>Jacqueline Thorne, MDOT<br>Steve Cassard, MEDCO<br>Kelly Lyles, MTA<br>Angela Jones, AECOM Project Manager<br>Mark Cheskey, AECOM NEPA Advisor<br>Anthony Dowell, AECOM GIS<br>Graham Twibell, AECOM GIS/Natural Resources<br>Kendall Drummond, AECOM Design Engineer<br>Joanna Hiebler, AECOM Natural Resources |
| Prepared     | March 27, 2018  |
| Prepared by  | Joanna Hiebler  |
| Distribution | Attendees   |

In an effort to forward discussions with the Maryland Department of Natural Resources regarding potential resources within the SCMAGLEV study area, a meeting was scheduled with the various DNR departments, representatives from the state sponsor for the proposed Project, and AECOM, the consultants completing the NEPA study. The main purpose of the meeting was to address the existing data files that have been utilized thus far to complete initial screening assessments, and discuss additional information available to include in further NEPA analyses.

Attached please find the meeting Agenda and Attendance sheets.

### Project Team Briefing

Ms. Jones initiated introductions and provided a brief history of the Projects NEPA progress to date, beginning with the proposed build alternatives. A range of reasonable alternatives (14 total) were evaluated through a two-level screening process, which resulted in an approval of the Preliminary Alternatives

Screening Report (PASR). The PASR evaluated both environmental constraints, including cultural, natural, and social resources, as well as constructability. This report resulted in seven proposed build alternatives. This report is available, along with the Project Purpose and Need document, Project Coordination document, and preliminary mapping, on the Project website [www.bwmaglev.info](http://www.bwmaglev.info).

Several coordination meetings with federal, state, and local agencies have occurred, and the Project continues to be evaluated and alternative alignments refined. AECOM requested this meeting with DNR in response to coordination with Mr. Golden at previous agency meetings and at the suggestion that additional insight and information can be transmitted that would aid in the next steps of the process, which is preparation of the Alternatives Retained for Detailed Study (ARDS) document. The Project has been narrowed down to two alternative alignments (J and J1). Large scale mapping was laid on the tables for an overall view of the study area with these alternatives. These alternatives will be carried forward into the ARDS and further into the Draft Environmental Impact Statement (EIS).

Evaluation of the alternatives within the ARDS will consider the proposed alignments location, whether it is elevated or tunneled, and also the several support facilities that will be necessary such as the rolling stock depots (RSD) and vent plants. Mr. Chapman asked if the RSD locations shown on the display mapping were determined and both planned for use, and Mr. Drummond clarified that only one of the two RSD locations shown will be selected. From approximately Washington D.C. to Greenbelt the SCMAGLEV would be tunneled, Greenbelt to Fort Meade would be elevated, and Fort Meade to Baltimore would be tunneled. Engineering design details are still being evaluated. Mr. Cheskey reiterated that what is currently shown on these maps is a work in progress. The Baltimore Washington Rapid Rail (BWRR) engineering team, Luis Berger, is currently working to tweak alignments and support structures to avoid and minimize impacts to the cultural, natural and social resources, while maintaining necessary engineering constraints and Project feasibility.

Mr. Golden provided an update to the DNR representatives of the SCMAGLEV meetings (largely the Joint Evaluation Committee meetings) he has attended, and provided a reminder of the need to ensure that the **team is "on the same page" because this project is very apparent in the public view**. Mr. Cheskey indicated that a draft of the ARDS document would likely be completed approximately 30 days after the engineering team provides final information. The larger EIS evaluation and documentation is estimated to conclude in late 2019.

#### Data & Methodology Review

Ms. Hiebler provided an overview of the meeting goals, with the purpose to focus on the existing information utilized to date, and what information can still be attained that can provide value to the analysis of resources within the study area of the two remaining build alternatives. The Project team wanted to hear from the various DNR representatives regarding important resources and concerns.

#### *MD State Parks*

Mr. Johnston provided a description of the environmental review process that would be required. He indicated that his review will generally take 30 to 45 days. It is possible that with much of the project within tunnel it may make the review easier, but it is still required. It must go through the Board of Public Works for approval for construction. This process could take up to a year, sometimes more. Mr. Johnston indicated **the need for the Parks Service to provide "Right" for anyone to access through their property**. He reiterated that any above ground access for things such as RSDs and vent plants would also require approval through the Board of Public Works. Prior to being placed on the Board of Public Works agenda, the MDP Clearinghouse review is required (60-90 days) and followed by DGS review.

At this point in the NEPA study, no construction access is required, but access for potential field evaluations would also need to be discussed. If access is approved for the Project construction, then Mr. Johnston would provide an easement to MDOT/FRA to access the property.

There was interest in the methods used to tunnel and bore, and issues that may be associated such as mine **tailings and groundwater pumping**. Mr. Drummond indicated that it would be a “dry tunnel” and described anticipated methods for tunneling.

The only state park property relevant to this study is the Patapsco State Park. There was discussion on the mapped boundary of the park and the need to ensure that AECOM has the latest and most accurate data being used. AECOM will **coordinate directly with Mr. Johnston as well as Rodney Veese, from DNR's Land Acquisition Division**, to make sure the latest GIS files are received.

#### *Maryland Environmental Trust (MET)*

Mr. Chapman indicated that the only conservation easement likely an issue for the Project is the Oak Hill property, which the state currently holds as a result of an EPA mandated transaction over a water resource violation. A portion of this property is dedicated to the District of Columbia and has been a youth correctional facility. The area is located on the south side of Route 32 near NSA, north of the Patuxent River, and is within the area of a proposed RSD.

The majority of the Oak Hill property is forested and/or palustrine wetland. Portions of the property have been abandoned and are not in use, but there are areas still in use, likely connected to the corrections facilities. Project mapping identifies this property as Federal land, which will be revised to appropriately indicate it as State land.

Mr. Chapman acknowledged that it may be possible to use a portion of this property for Project needs, but the team would need to show that there is a significant public safety benefit to utilizing this property. MET would need to determine if this use is allowed, and what mitigation might be required. There are other co-holders on the property; however the state has the most influence over decisions. This property is identified in 501C Land Trusts. The review process required is similar to the Parks department, and it must go through the Board of Public Works for approval. MET would then amend the existing conservation easement if the Project is allowed to cross.

AECOM will review the DNR Lands & Conservation Easement Dataset to ensure this easement is represented. Mr. Chapman will provide a plat following a formal request submitted by AECOM.

#### *RTE Species, Habitats & Fisheries*

AECOM is just approaching the stage in the NEPA process where formal requests for information regarding rare, threatened, and endangered (RTE) species, habitats and fisheries will be submitted. Ms. Byrne referenced a screening she provided in April/May of 2017. AECOM will ensure that this screening has been utilized as well as any additional information provided through the formal requests. AECOM will also provide in the written request to Wildlife and Fisheries, the two alignments in shapefile formats.

Mr. Mullican indicated the anadromous fish and eel concerns in the Patuxent, as well as the concern for fish passage. It does not seem as though the proposed alignments will traverse any managed fishing areas, however recreational fish and trout stocking areas will be evaluated for the Project. Wild and Scenic Rivers will also be considered. The only one of issue for the Project should be the Patuxent River. John Wilson is the contact for Wild and Scenic Rivers.

It is anticipated that impacts to fisheries will be limited, as the Project proposes largely elevated or tunneled sections, but areas where access or support facilities are located at-grade will need to be evaluated. Any

proposed temporary or permanent impacts within waters will also need to consider Time-of Year restrictions, **as well as aquatic RTE's**. **DNR stated their** preference to maintain forested stream buffers, especially in areas of **RTE's**. DNR may also have several suggestions for possible mitigation for fisheries resources (noted in last section). Mitigation is not likely for rare species, these areas should be avoided to the greatest extent possible.

Forest Interior Dwelling Species (FIDS) should also be considered. This evaluation will depend on several factors such as the location and height of the proposed elevated structure in relation to large tracts of forest. Mr. Cheskey noted the potential 18-foot minimum height of the elevated structures. The EIS prepared for the project will evaluate the ability to have vegetation in and surrounding these structures, considering factors such as height, sun angle, and vegetation that may attract unwanted wildlife to an unsafe area.

#### *Forest Conservation*

Forest Conservation Act coordination will be necessary with Ms. Marian Honeczy, who was not present at the meeting. AECOM will coordinate with Mr. Kevin Coyne, of DNR Chesapeake and Coastal Services, to request forestry and tree specific data that may not be publicly available and may require NDA for use on this project.

#### *Miscellaneous Discussion*

Mitigation needs and options were discussed at several points during the meeting. Mr. Golden reminded the Project team to keep DNR in mind when evaluating and brain-storming ideas. He indicated the possible use of excess and/or scrap clean concrete that may result from the Project for use by other special interest groups. With the large amount of material potentially generated from construction, use of some of this material could be considered for fisheries mitigation efforts. Continued coordination with the DNR would determine if this option is feasible. All of this coordination and further discussion can aid in the development of mitigation opportunities that will be documented within the Draft EIS.

Mr. Golden noted the additional requirements relevant if dam construction is necessary. He indicated that DNR works closely with the Maryland Department of the Environment and the National Marine Fisheries Service. The DNR is also helpful when providing/Updating the public regarding natural resources.

Concerns of drilling were also discussed, and the effects of groundwater changes are of interest to DNR. Mr. Golden also noted that Secondary and Cumulative Effects are always of interest to DNR. Construction staging areas, vehicle and track storage and maintenance areas are of interest. These topics will be evaluated and included in the Draft EIS.

As alternative alignments and locations of support facilities become more defined, the Project team will also reach out to the Critical Area Commission, which is a department of the Maryland DNR, but not in attendance at the meeting.

These notes are considered to be a true and accurate record of the discussions that occurred during the SCMAGLEV DNR Meeting. If any discrepancies or inconsistencies are identified, please contact me at (410) 891-9284 or by email at joanna.hiebler@aecom.com.



*Larry Hogan, Governor*  
*Boyd Rutherford, Lt. Governor*  
*Mark Belton, Secretary*  
*Joanne Throwe, Deputy Secretary*

18-MIS-219

MEMORANDUM

TO: Angela Jones, Project Manager SC Maglev, for MDOT

FROM: Erin Knauer, Environmental Review Program, MD Department of Natural Resources

Date: July 25, 2018

Subject: Fisheries Information for the Baltimore-Washington Superconducting Magnetic Levitation (SCMAGLEV) Project between Baltimore, Maryland, and Washington D.C

The study area for the above referenced project has been reviewed to determine fisheries species and aquatic resources. The proposed activities include preparation of an Environmental Impact Statement for the proposed Baltimore-Washington Superconducting Magnetic Levitation (SCMAGLEV) Project between Baltimore, Maryland, and Washington D.C. The project area extents reviewed for fisheries and aquatic resources was provided by the project team. The project area consists of one overall encompassing boundary around both alignments the project team has under consideration, with a 100-foot buffer around those alignments, including the deep tunnel portions of the alignment. The following information and categories are appropriate for consideration in the preparation of the environmental impact statement.

A number of waterways are present within the proposed project area. After a review of the project corridor, we have included a number of waterways not identified in the provided coordination sheet, highlighted in bold:

Beck Branch – Use class I

Beaverdam Creek and unnamed tributaries – Use class I

Patuxent River and unnamed tributaries – Use class I

Little Patuxent River and unnamed tributaries – Use class I-P

**Holly Creek** and unnamed tributaries to Holly Creek – Use class I

Dorsey Run and unnamed tributaries – Use class I-P

Stony Run and **unnamed tributaries** – Use class I

Cabin Branch and **unnamed tributaries** – Use class I

**Tidal portions of Anacostia River and unnamed tributaries** – Use class II

**Non-tidal tributaries to Anacostia River** (in vicinity of alignment) – Use class I

**Midway Branch** – Use class I

**Severn Run** – Use class IV

**Patapsco River** (mainstem, above B&O railroad viaduct) – Use class IV

**Unnamed tributaries to Patapsco River** – Use class I

**Tidal portions of Patapsco River (including Inner Harbor)** – Use class II

For the Use I and Use II streams within the project area, DNR recommends a February 15 through June 15 time of year restriction, for the protection of anadromous fish and yellow perch spawning activities. If SAV is later determined to be present, additional protection periods for SAV conservation may be recommended. For Use IV streams within the project area, generally, no instream work is permitted during the period of March 1<sup>st</sup> through May 31<sup>st</sup>, inclusive, during any year.

Aquatic Resources and Habitat – Anadromous fish migrating from tidal waters, including herring, shad, yellow and white perch, are entering waterways for spawning within the project area. Major systems include the Anacostia, Patuxent, Patapsco Rivers and their unnamed tributaries, and Severn Run. Black bass tidal fisheries are located in the Inner Harbor, proximate to the northern project limit, and largemouth bass spawning coves are located in the tidal portion of the Anacostia River, in the vicinity of the southern project limit.

Eels – American eels reside and migrate in a number of streams throughout the project area. These are catadromous fish which live much of their lives in freshwater streams, and migrate to the ocean to reproduce. Conservation of American eel populations is an important aquatic review focus.

Stocked trout – Stocked trout management areas for recreational fishing are located in the following waterbodies: Jones Falls, below Lake Roland; the Gwynns Falls; Severn Run, upstream of Elkridge, and; the Patuxent River in the Laurel area.

Scenic and Wild rivers – Within the project area, designated rivers of the state Scenic and Wild Rivers program include the Anacostia, Patuxent, and Severn Rivers and their tributaries.

Tier II Waters – Tier II waters within the project area includes Beaverdam Creek, at Beaverdam road, and; Bald Hill Branch, near the Greenbelt area.

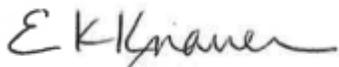
The Chesapeake Bay and its tributaries may support many resident fish species documented by our Maryland Biological Stream Survey. MBSS data can be accessed via the MDDNR web page at <http://streamhealth.maryland.gov>, allowing access to resource surveys in neighboring tributaries.

The DNR Wildlife and Heritage Service (WHS) will provide comments on sensitive species, non-tidal wetlands of special state concern, and waterfowl areas.

Please note that these comments do not constitute a full project review by the Department of Natural Resources Environmental Review Program and are for planning purposes only. Once a final permit application has been submitted with a full set of detailed plans, a full review by MDDNR may take place.

If you have any further questions, please feel free to contact me at 410 260-8312.

Sincerely,



Erin Knauer  
Environmental Review Program

- The proposed maintenance yard located north of MD 198 appears to overlap with a Great Blue Heron colony (See note on heron colonies).
- On the northwest side of the project route approximately ½-mile from where the Patuxent River crosses it (near Brock Bridge Road on the project map), is an occurrence of the Atlantic Spike (*Elliptio producta*), a freshwater mussel species with In Need of Conservation state status in Maryland. The proposed project route appears to directly impact this area where the mussel occurs.
- On Patuxent Wildlife Research Center Property southeast of the project route crossing of the Patuxent River, there is an extensive Nontidal Wetland of Special State Concern (NTWSSC) that provides habitat for these species, as well as a colony site of Great Blue Herons (See note on heron colonies). It is important to note that the project route directly impacts part of this NTWSSC.

| <u>Scientific Name</u>          | <u>Common Name</u>   | <u>State Status</u> |
|---------------------------------|----------------------|---------------------|
| <i>Stylurus laurae</i>          | Laura's Clubtail     | Rare                |
| <i>Libellula flavida</i>        | Yellow-sided Skimmer | Rare                |
| <i>Helocordulia selysii</i>     | Selys' Sundragon     | Threatened          |
| <i>Nannothemis bella</i>        | Elfin Skimmer        | Endangered          |
| <i>Somatochloa provocans</i>    | Treetop Emerald      | Endangered          |
| <i>Epitheca costalis</i>        | Slender Baskettail   | Highly Rare         |
| <i>Celithemis martha</i>        | Martha's Pennant     | Highly Rare         |
| <i>Gomphaeschna antilope</i>    | Taper-tailed Darner  | Rare                |
| <i>Nehalennia gracilis</i>      | Sphagnum Sprite      | Rare                |
| <i>Nehalennia integricollis</i> | Southern Sprite      | Highly Rare         |
| <i>Etheostoma vitreum</i>       | Glassy Darter        | Threatened          |
| <i>Ameiurus catus</i>           | White Catfish        | Uncertain           |
| <i>Gratiola viscidula</i>       | Short's Hedge-hyssop | Endangered          |

- The proposed Maintenance Yard site in the area of Soil Conservation Road is within the Beaverdam Creek NTWSSC and may directly impact Selys' Sundragon and Sable Clubtail (*Gomphus rogersii*) occurrences. The Sable Clubtail is a species with In Need of Conservation state status.
- Parts of Beaverdam Creek intersect with the project route north of the Beltsville area. Beaverdam Creek contains NTWSSCs and supports these species documented in close proximity to the project route, as well as a colony site for Great Blue Herons (See note on heron colonies). It is important to note that the project route directly impacts part of the NTWSSC here.

| <u>Scientific Name</u>      | <u>Common Name</u>     | <u>State Status</u>     |
|-----------------------------|------------------------|-------------------------|
| <i>Lethenteron appendix</i> | American Brook Lamprey | Threatened              |
| <i>Helocordulia selysii</i> | Selys' Sundragon       | Threatened              |
| <i>Gomphus rogersi</i>      | Sable Clubtail         | In Need of Conservation |
| <i>Stylurus laurae</i>      | Laura's Clubtail       | Rare                    |

Given that most of these species are associated with wetlands or streams, we would like to emphasize the need for stringent adherence to measures for maintaining wetland and stream water quality and hydrology which are essential to conserving the habitats that support these rare species. In order to avoid degradation of rare species' habitats and detrimental impacts to rare species' populations, we recommend applying supplemental protection measures in addition to the best management practices that will prevent changes to wetland and stream hydrology and water quality.

For above-ground construction, we recommend pursuing environmentally sensitive design to address stormwater runoff by promoting the use of nonstructural best management practices to the maximum extent. The goal is to mimic natural infiltration patterns across the site in order to maintain natural hydrology. Methods could include the use of sheet flow to buffers, vegetated channels for road runoff, methods of bioretention, and reduction of impervious cover.

Regarding above-ground construction, as well as tunnel boring, we recommend the following measures to minimize the risk of sedimentation in aquatic and wetland habitats, and to minimize changes to the hydrology of these habitats: Minimize clearing and retain forest; stabilize soil within 24 hours and make special effort to retain fine particle silt, sand and clay sediments; redundant sediment control measures such as double silt fencing; and frequent inspection of these measures for immediate correction of problems. Permanent and intermittent streams and nontidal wetlands should be protected by a minimum 100-foot undisturbed vegetated buffer, and steep slopes (15% slope or greater) and areas of highly erodible soils should not be disturbed.

NTWSSCs are regulated by MDE along with their 100-foot upland buffers. This project may need review by MDE for any permits associated with impacts to wetlands.

Heron colonies – We generally recommend protection of active great blue heron colonies by implementing a ¼-mile buffer around the colony site, and discouraging certain types of activities within that buffer, especially during the breeding season for this species which is considered to be February 15 through July 31 of any given year. We can offer more specific recommendations for protection of these colony sites, on a case-by-case basis.

Our remote analysis suggests that the forested area on this property contains Forest Interior Dwelling Bird habitat. Populations of many bird species which depend on this type of forested habitat are declining in Maryland and throughout the eastern United States.

We look forward to further coordination with the project team as the project progresses, so that avoidance and minimization measures may be developed for these areas of concern. Thank you for the opportunity to review and comment. Please feel free to contact me with any further questions regarding this information.

ER# 2018.revisedmaglev

## Meeting Minutes

|              |  |
|--------------|--|
| Subject      | SCMAGLEV MDE/USACE Field Meeting   |
| Date         | September 6, 2018  |
| Time         | 9:00 am  |
| Location     | Patuxent Research Center North Tract<br>230 Bald Eagle Drive, Laurel MD 20724  |
| Attendees    | Elder Ghigiarelli, Bill Seiger, and Amanda Sigillito – MDE<br>Don Bole, Brandon (intern) – USACE<br>Furqan Siddiqi - BWRR<br>Larry Pesesky, Robin Maycock – Louis Berger<br>Kate Traut – Straughan Environmental<br>Mark Cheskey, Joanna Hiebler – AECOM |
| Prepared     | October 10, 2018   |
| Prepared by  | Joanna Hiebler   |
| Distribution | All attendees  |

The purpose of the site visit is to provide the Maryland Department of the Environment and the U.S. Army Corps of Engineers an overview of the SCMAGLEV project natural areas where wetland delineations have occurred and are still planned to occur. The focus is on the planned surface (elevated) portions of the alignments and any above ground ancillary facilities currently proposed.

The meeting minutes have been organized per order of sites visited.

### Site 1 – Patuxent Research Refuge (PRR)

All areas of above ground limits-of-disturbance (LOD) for the proposed Alignment J within the PRR property have been evaluated for waters of the U.S., including wetlands, during field investigations in the months of July and August, 2018. Several palustrine forested (PFO) and palustrine emergent (PEM) wetlands have been identified as well as intermittent and/or ephemeral stream crossings within PRR property.

Soil sampling has not been completed as coordination with outside companies to complete UXO sweeping prior to soil sampling is ongoing. Final wetland delineation boundaries will be made once soil sampling can occur.

Site 1 included two stops along the western edge of the PRR, bordering National Park Service (NPS) property along I-295. Much of the LOD straddles or lies very close to this boundary between properties. The first stop was located along an existing access/clearing through the forest off of Wild Turkey Way. The LOD lies adjacent to the historic Snowden Cemetery and adjacent PFO wetlands. Current Alignment J avoids the cemetery, but it is within the Area of Potential Effects for the project.

The second stop was located south of this area, west of Blue Heron Pond. Several forested wetlands and stream systems are present, as well as evidence of old farming ditches. This location provided a good visual of the proximity of Alignment J along the western border of the PRR property, and adjacent NPS property along I-295.

**Site 2 – National Park Service/Anne Arundel County Parkland**

Site 2 was located along the western side of I-295 off of Brock Bridge Road along Alignment J1 elevated viaduct, opposite of the second stop within PRR. The site is located within Maryland City Park. A PFO wetland of significant function and value is located within the forested buffer located between the sports fields and I-295.

The Corps indicated the need to avoid this wetland area. This is a good example of how future engineering and design will need to consider avoidance and minimization measures when placing viaduct piers.

**Site 3 – Anne Arundel County near Harmans Road**

A ventilation plant associated with Alignment J is proposed within a portion of Anne Arundel County property and adjacent private property, just east of Harmans Road. Delineations have not yet been conducted on this property, but the site is known to contain PFO and PEM wetlands, floodplain, and Stony Run and its tributaries. This site has also been identified by the Department of Natural Resources as potential habitat for the state and federally-listed Swamp Pink (*Helonias bullata*).

The location of this vent plan was called into question for its constructability located over a stream system. As this plant would need to connect with the below ground tunnel, too many engineering constraints arise if it is situated over an active stream channel. The project engineers indicated that they will revisit this location and develop a more feasible option. Assuming that this ventilation plant option will no longer be considered, official wetland delineations at this site will not be completed.

**Site 4 – BARC/Beaverdam Road**

Site 4 consisted of two stops, the first of which along Springfield Road. This allowed a view of the proposed BARC Rolling Stock Depot (RSD) site. This area consists of active research and agricultural practices, a portion of which is currently leased to the University of Maryland College Park. Located on the site are Beaverdam Creek and its tributaries, wetlands, including wetlands of special state concern, and floodplain.

Stop 2 of this site was located just west of the I-295 overpass of Beaver Dam Road. In this location the guideway viaduct locations of both Alignments J and J1 were visualized, along with the location of where elevated connector tracks would lead to the BARC RSD. A stormwater management system is also proposed for Alignment J1 in this location.

Wetland delineations have not yet occurred within this area, as we await access onto BARC property. Final delineations of wetlands and streams would be critical for design phases of the project, to determine the location of bridge piers and stormwater management features.

The visit concluded back at the Patuxent Research Refuge.

**The following provides a list of questions raised during the field visit, the provided response during the visit, and any update to that information that has been received over the last month.**

1. When is a Joint Permit Application expected to be submitted? At this time it was anticipated for submittal concurrent with the Draft Environmental Impact Statement (DEIS), submitted to the agencies in December 2018.

- Since this meeting, the project timeline has changed. The DEIS is now anticipated for submittal to the agencies in the summer of 2018. The JPA is still expected to correspond with the DEIS submittal.

2. What is expected to be included in the JPA? Delineations presented in the DEIS and thus the JPA would include all federal, state, and county-local properties, located in areas of elevated viaduct for both alignments and any above ground ancillary facilities, where access has been granted and field investigations were able to occur. Where field investigations could not occur,

the data would be supplemented with existing DNR and NWI wetland information. No delineations on private properties were proposed. No delineations on RSD sites were proposed. Timing would not allow for such investigations.

- Since the meeting and change in project timeline, access onto all areas of elevated viaduct for both alignments and any above ground ancillary facilities will be investigated. In rare situations where access may not be granted, such as Secret Service property, existing published data will be used.

3. What is the study limit used for the wetland delineation? The limits of study include both alignments and any above ground ancillary facilities limits of disturbance plus a 100-foot buffer, resulting in an approximate 270-foot wide swath for both Alignment J and J1.

- This boundary has not changed around the alignments and ancillary facilities. Any RSD site that is investigated will occur only within the LOD, no additional buffer added.

4. Has coordination with Section 408 been initiated? At this time is had not.

- Initial coordination email was sent to Fred Kimble on October 9, 2018.

5. What is proposed with the fill material? Where will it be transported? At this time the level of design and engineering completed does not identify locations for excavated material.

## Meeting Minutes

|              |  |
|--------------|--|
| Subject      | SCMAGLEV – Fort Meade Meeting  |
| Date         | October 10, 2018   |
| Time         | 2:30pm   |
| Location     | Fort Meade Garrison Headquarters   |
| Attendees    | LTC Allan Floyd, Deputy Garrison Commander<br>Trish Miller, Fort Meade Legal Division<br>Suzanne Kopich, Fort Meade NEPA Program Manager<br>John Houchins, Fort Meade Natural Resources Program Manager<br>Scott Seibel, AECOM, Archaeology Team Leader<br>Joanna Hiebler, AECOM, Natural Resources Team Leader<br>Kate Traut, Straughan Environ. (SEI), Natural Resources Team Leader |
| Prepared on  | October 11, 2018   |
| Prepared by  | Joanna Hiebler   |
| Distribution | Attendees  |

### Background

During the months of August and September 2018, AECOM, in coordination with the MDOT MTA, reached out to the National Security Administration (NSA) and Fort Meade to request access onto said properties in order to complete environmental investigations necessary for the ongoing NEPA process for the SCMAGLEV project. Coordination has been ongoing, but prior to allowing access to the Fort, Lieutenant Colonel (LTC) Floyd requested a meeting at Fort Meade offices to discuss plans, status, and environmental needs for the project.

### Discussion Summary

The meeting began with some concerns of the location of SCMAGLEV project limits-of-disturbance (LOD) encroaching upon areas of Fort Meade natural forested areas located just west of residential housing, north of the Cryptologic Museum, and east of I-295 (Baltimore-Washington Parkway). Specifically this natural area is the location of the elevated portion of Alignment J as well as the proposed ventilation plant associated with Alignment J1 and a stormwater detention basin. Mr. Houchins indicated that this land has been set aside and held as natural area, until a time upon which the Fort should require that land for their own use.

There was question as to whether anyone has sought permission to place any of the SCMAGLEV project on Fort Meade property. It was stressed that any encroachment would involve an easement of Fort Meade land, even if it was tunnel, as the U.S. Army owns the mineral rights underneath the installation. LTC Floyd indicated that his concern is mostly for the proposed elevated alignment (Alignment J) and the proposed stormwater detention basin and ventilation plant, not with proposed tunnel. Ms. Miller noted her concern over safety, especially when learning that the ventilation plant will also serve as an emergency escape from the tunnel. There are potential security issues with this.

Mr. Houchins relayed that a significant amount of recent work has been done to confirm the metes and bounds of the installation. It was further relayed that there may be small pockets of land between Fort Meade and the NPS-owned I-295 for which ownership is unclear.

LTC Floyd noted that he has requested a meeting with the project designers (Louis Berger) to discuss the proposed alignment and features. AECOM noted their regret not realizing the desire was to discuss more of the engineering and proposed locations of ancillary facilities during the current meeting. It would have been beneficial to schedule another date when others may have been able to attend as well.

Ms. Miller questioned the outreach that has been done for the project. AECOM provided a brief review of the initial public meetings held, the early screening report prepared and the narrowing down of project alignments, the meeting with the Fort in April of 2018, the monthly Interagency Review Meetings (IRM), and completion of the Alternatives Retained for Detailed Study (ARDS) report provided to the agencies for review and comment. Ms. Miller was concerned that they were not aware of the public meetings. She also noted that the IRM meetings are not very informative. Ms. Hiebler noted that the purpose of the IRM meetings is to provide a brief status update of project activities within the NEPA process, any major changes to the project, and most importantly provide the agencies a forum for Q&A.

### **Process to Access Site for NEPA Investigations**

Coordination with Ms. Kopich and AECOM and SEI has already occurred, specifically related to the necessary forms and information for submittal to Fort Meade security for review prior to being issued any gate clearance. The Fort Meade legal division, however, is not yet able to provide access onto installation property for environmental surveys. Ms. Miller noted that the legal division must approve the need for this access, in addition to the logistics and forms noted above.

Once legal has provided their approval for access, forms may be submitted for review by security. AECOM and SEI may then coordinate directly with subject matter experts at the Fort to review those specific areas in need of study. Mr. Houchins indicated that there is an abundance of existing data from previous studies completed at the installation, for both archaeology and wetland delineations. He believes that the entire area in question along the proposed alignments has been evaluated at some point in time. Mr. Seibel indicated the need to still investigate, as the Maryland Historic Trust records may not be consistent with Fort Meade records and may show that there are some locations that have not been investigated. Mr. Houchins will provide contact information for the archaeology subject matter expert to Mr. Seibel to coordinate when the time comes. Other requirements specific to archaeology, such as an Archaeological Resources Protection Act permit or an installation Dig Permit, were not discussed.

Mr. Houchins will be the direct contact for wetland delineations previously completed at the Fort. Ms. Traut will be able to coordinate directly for their efforts. During this coordination, Ms. Miller must again provide legal approval for the existing GIS data to be shared with AECOM and SEI. This data will be reviewed, work plans modified if needed, and access needs on the site coordinated with all parties.

Concern was raised over what, if any, coordination and approval has been provided from NSA. AECOM explained previous coordination with Mr. Jeff Williams. NSA has provided their approval to be on site, as much of the efforts lie outside of the perimeter fencing. The NSA stressed the need to communicate with them for any occasion that field staff may be present, as well as the need to coordinate directly with Fort Meade, as the property owner. It was conveyed by Mr. Houchins that coordination with NSA must be conducted for any field efforts within 500 feet of their perimeter fence, even if on Fort Meade property.

## Project Review

Those in attendance were unaware of the ARDS report having been prepared and submitted for review and comment. As the package was sent through the project email address, it ended up in LTC Floyd's spam mailbox and was undetected. Ms. Hiebler indicated that she will reach out to the AECOM project team to determine if there is a better way to send the materials. LTC Floyd was able to download the package and will forward it to all. Mr. Houchins indicated that they do have access to an FTP site. Though it was not discussed at the meeting, it is likely that the FTP site in question is AMRDEC SAFE. Ms. Kopich indicated that they have no means to print the ARDS report, so hard copies are always appreciated. Use of their computers can often be limited due to quarantine issues as well.

Ms. Hiebler asked if moving forward we should provide materials to all those at the meeting. Ms. Miller indicated that all coordination should continue through LTC Floyd directly.

It was requested that another meeting be arranged where they may ask questions and address concerns. Ms. Hiebler indicated that AECOM and MDOT MTA need and welcome any and all comments they have. She will reach out to the AECOM project manager, Angela Jones, to see how best to address and to schedule a meeting.

## Miscellaneous Discussion

- Ms. Miller noted the difficulties the MDOT MTA and FRA will have with the D.C. Childrens Center. Her comment was noted and she was informed that coordination with those entities is ongoing.
- Ms. Traut questioned the possible need for UXO sweeping anywhere within the proposed field study locations. Mr. Houchins indicated that any area north of Rockenbach Road is not within a former training and military range. He noted that this area is more likely to contain contamination or dumping from old housing sites.
- Ms. Hiebler touched briefly on the area of Fort Meade property associated with the proposed MD 198 Rolling Stock Depot (RSD). This area may not require field investigations, dependent upon other agency coordination. Mr. Houchins noted that this area has the possibility of once having been military training area, but it is unknown. He indicated that it has been used for linear utility work.
- Ms. Miller indicated that underground utilities are not well documented at the base.
- Ms. Hiebler questioned the ability to move forward with the proposed noise monitoring just outside the Cryptologic Museum. Mr. Houchins indicated the need to provide all equipment specifications to NSA for review and approval. This effort has already occurred and been approved by NSA. Assuming Fort Meade is aware of and approves of the placement of the receptor, NSA approves. LTC Floyd indicated that they are agreeable to allowing this effort to move forward. Again, coordination with NSA and Fort Meade will occur to inform all of the proposed timing.

These notes are considered to be a true and accurate record of the discussions that occurred during the SCMAGLEV Fort Meade Meeting. If any discrepancies or inconsistencies are identified, please contact me at (410) 891-9284 or by email at [joanna.hiebler@aecom.com](mailto:joanna.hiebler@aecom.com).

## Meeting Minutes - DRAFT

|             |   |
|-------------|---|
| Subject     | SCMAGLEV Field Meeting  |
| Date        | October 29, 2018  |
| Time        | 12:30pm-3:30pm  |
| Location    | Patuxent Research Refuge North Tract<br>230 Bald Eagle Drive, Laurel MD 20724   |
| Attendees   | Brad Knudsen, Chris Guy, Raymond Li, Sandy Spencer, USFWS (comments received by Sandy Spencer and incorporated and att)<br>Erin Knauer - DNR<br>Cheryl Kerr, Phatta Thapa – MDE<br>Don Bole– USACE<br>Furqan Siddiqi - BWRR<br>Robin Maycock – Louis Berger<br>Kate Traut – Straughan Environmental<br>Mark Cheskey, Joanna Hiebler, Kendall Drummond – AECOM |
| Prepared    | November 6, 2018  |
| Prepared by | Joanna Hiebler  |

The USFWS requested a tour of the Patuxent Research Refuge (PRR) property within SCMAGLEV study limits. The purpose of the site visit is to provide the USFWS and other interested agencies with an overview of the natural areas where wetland delineations and habitat assessments have occurred, and provide them a forum to express concerns and ask questions. The focus is on the planned surface (elevated) portions of the alignment alternative known as J.

### Project Introduction

All areas of above ground limits-of-disturbance (LOD) for the proposed Alignment J within the PRR property have been evaluated for waters of the U.S., including wetlands, during field investigations in the months of July and August, 2018. Several palustrine forested (PFO) and palustrine emergent (PEM) wetlands have been identified as well as intermittent and/or ephemeral stream crossings within PRR property.

Soil sampling has not been completed as UXO sweeping prior to soil sampling has not occurred. Final wetland delineation boundaries will be made once soil sampling can occur.

### Agency Discussion

Mr. Knudsen provided input regarding natural areas south and east of the proposed Alignment J where the land is subject to periodic “cool” burning and maintenance of the forest. AECOM indicated that this area would not be impacted by the project.

### BGE Utility Corridor

The first site visited is located along the existing utility corridor just east of the Baltimore-Washington Parkway. The USFWS informed us that this area underneath of the power lines is considered high priority habitat. It has been maintained as shrub habitat, through an agreement with BGE, and is often used as an example of how to manage natural areas withing utility rights-of-way (ROW). This area functions as necessary shrub habitat for shrub bird nesting, and 28 observation points are located in the right of way with shrub bird, lepidopteran, and vegetation data for 3 years.

Traversing through this utility corridor are palustrine emergent wetlands associated with tributaries to Welsh's Run, a Use I-P tributary to the Little Patuxent River originating from the east. This stream is considered one of the most diverse Maryland streams feeding to the Patuxent River.

The PRR is currently working with BGE to rectify a stream wash-out area through this corridor using culverts. Mr. Siddiqui indicated that BWRR is working with BGE to discuss the potential shifting of the power lines to either be elevated higher or brought lower to accommodate the elevated portion of Alignment J.

It was asked if a maintenance road needed to be paved underneath of the proposed guideway, which it does not. It is anticipated that they can maintain the pervious gravel access roads that currently exist, and maintain BGE's access. Mr. Drummond indicated that the guideway requires approximately 13-feet of clearance below. This should allow for the shrub habitat to remain. It is anticipated that this habitat will be disturbed for temporary construction impacts, which will need to be accounted for in the Draft Environmental Impact Statement (DEIS). This will have to account for time of year restrictions not only for stream impacts should they result, but nesting habitats associated with wildlife. Ms. Spencer indicated that the USFWS can discuss and coordinate with AECOM to provide detailed information on current and past studies that have been done within the PRR property.

The USFWS indicated that their biggest concern through this area is the long term maintenance and construction impacts. It is believed that the footprint of the construction that may be even more impactful in several places than the actual footprint of the guideways, since during construction lots of tree clearing will need to take place to get access to build or tunnel area and for debris removal, haul out roads etc. These trees and the associated complex of soils, roots, and co-dependent vegetation took decades/generations to form, so therefore not replaceable. What grows in their place may not be desirable or compatible with surrounding priority forest resources of the refuge, and so would need monitoring, management, and a consistent source of support to maintain for decades forward. The USFWS question how this can be funded and guaranteed.

#### ***Historic Snowden Cemetery Area***

The next stop along the western edge of the PRR was located along an existing access/clearing through the forest off of Wild Turkey Way. The LOD lies adjacent to the historic Snowden Cemetery and adjacent PFO wetlands. Current Alignment J avoids the cemetery, but it is within the Area of Potential Effects for the cultural resources analyses for the project. One question was raised as to whether or not the noise studies are able to account for potential impacts to Forest Interior Dwelling Species (FIDS).

#### ***Blue Heron Pond Area***

The last stop was located south of this area and west of Blue Heron Pond. Several forested wetlands and stream systems are present, as well as evidence of old farming ditches, and numerous mature native trees of substantial size (>24 dbh), especially communities of chestnut oak. This location provided a good visual of the proximity of Alignment J along the western border of the PRR property, and adjacent NPS property along the Baltimore – Washington Parkway. The field tour ended at the southern most point within the PRR property, located along the Patuxent River.

This area consists of designated Wetlands of Special State Concern (WSSC). Ms. Kerr asked for the specific reasoning behind the designation and was it a designation by the state, and it was not known at that time. Ms. Knauer followed up with information regarding the potential habitat that this area provides for a list of rare, threatened and endangered (RTE) species as well as a colony site for great blue herons. Ms. Spencer indicated that they do not think there is a colony here, but there is a big traditional one on near 198 east of 295. Additional details are found in the RTE coordination with the Maryland Department of Natural Resources.

#### ***Miscellaneous Discussion***

Mr. Guy provided guidance as to the necessary steps it would take to be granted an easement or ROW through the PRR, and that this process has often taken several years. The North Tract portion of the PRR has its own Congressional Act. He also indicated that the USFWS would have to complete an EIS of their own (as do many federal agencies) post the published FEIS and prior to the easement being granted.

The USFWS would much prefer tunneling through this area. Ms. Kerr questioned when a Joint Permit Application expected to be submitted. Ms. Maycock indicated that it will be submitted concurrent with the DEIS. Ms. Kerr questioned the ability to submit at this time, as the recommended preferred alternative will have not been presented to the agencies until submittal of the DEIS.

Ms. Spencer provided the following photos of the mature forest and riparian community along the Patuxent River near 295 where the Alt J guideway might go, taken during this walking tour. Ms. Spencer also provided the attached notes from a field walk with USFWS on October 15, 2018.









Patuxent Research Refuge MAGLEV impacts to resources of concern:

1. Impacts to Northern Long-eared bat (federally threatened species) from loss of breeding, roosting, and foraging habitat. Occurrence likely in project area, acoustic surveys and mist-netting required.
2. Spotted turtle (petitioned species for listing) and Eastern box turtle (SCGN or conservation concern): a) displacement of reproductive members of population and subsequent loss of reproductive potential; b) loss or negative alteration of home ranges affected individuals.
3. Vernal pools, spring-fed wetland complexes, and forest stream complexes containing RTE plants identified in project area. Need delineations and protective buffer zones.
4. Yellow lance (federally endangered mussel); surveys Patuxent River
5. Large mature site trees (>30 dbh, value for buffer for interior forest and roosting for bats, FIDS). Map, ID, determine compensatory value and/or protective buffer zone.
6. FIDS birds: loss of forest buffer, set back of interior acreage
7. Forest vegetation community adjacent to project: alteration and/or loss of forested buffer, assess acreage 300' into forest along length of project area for prevention or restoration measures to maintain habitat quality of interior forest.

MAGLEV WALK May 15, 2018. Ray Li (CBFO), Sandy Spencer (USFWS), John Bourne (USFWS). Route walked from Patuxent River north to sharp right bend in Wild Turkey Way. See map below.

Points with attributes in Biology Team/GIS/MagLev. Datum NAD83.

155 (Forest Point 1): 39.07233 x 076.82742 specimen willow oak >30"

156: 39.07134 x 076.82830 Fence and fern glade (3 species of ferns—sensitive, new York, Christmas) and fence of interest as it seems to parallel 295. Is it NPS boundary fence?

157: 39.07133. x 076.82900 Vernal pools (drie)/ephemeral wetland complex

158: 39.07127 x 076.8299 Solomon's seal community

159: 39.07108 x 076.82925 Solomon's seal community

160: 39.07008 x 076.82992 Vernal pool complex (wet), large oak (southern red, scarlet)

161: 39.06942 x 076.83014 Community of large oaks, mesic to wet soils

162: 39.06919 x 076.83023 Jack in the pulpit, vernal pool complex, Eleocharis sedge

163: 39.0716 x 076.82996 Specimen Swamp Chestnut oak

164: 39.07372 x 076.82626 Spring beauty

165: 39.07414 x 076.82581 Vernal pool with wood frog tadpoles

166: 39.97554 x 076.82470 Big patch of Mile a minute by Snowden cemetery (source of spread to disturbed areas)

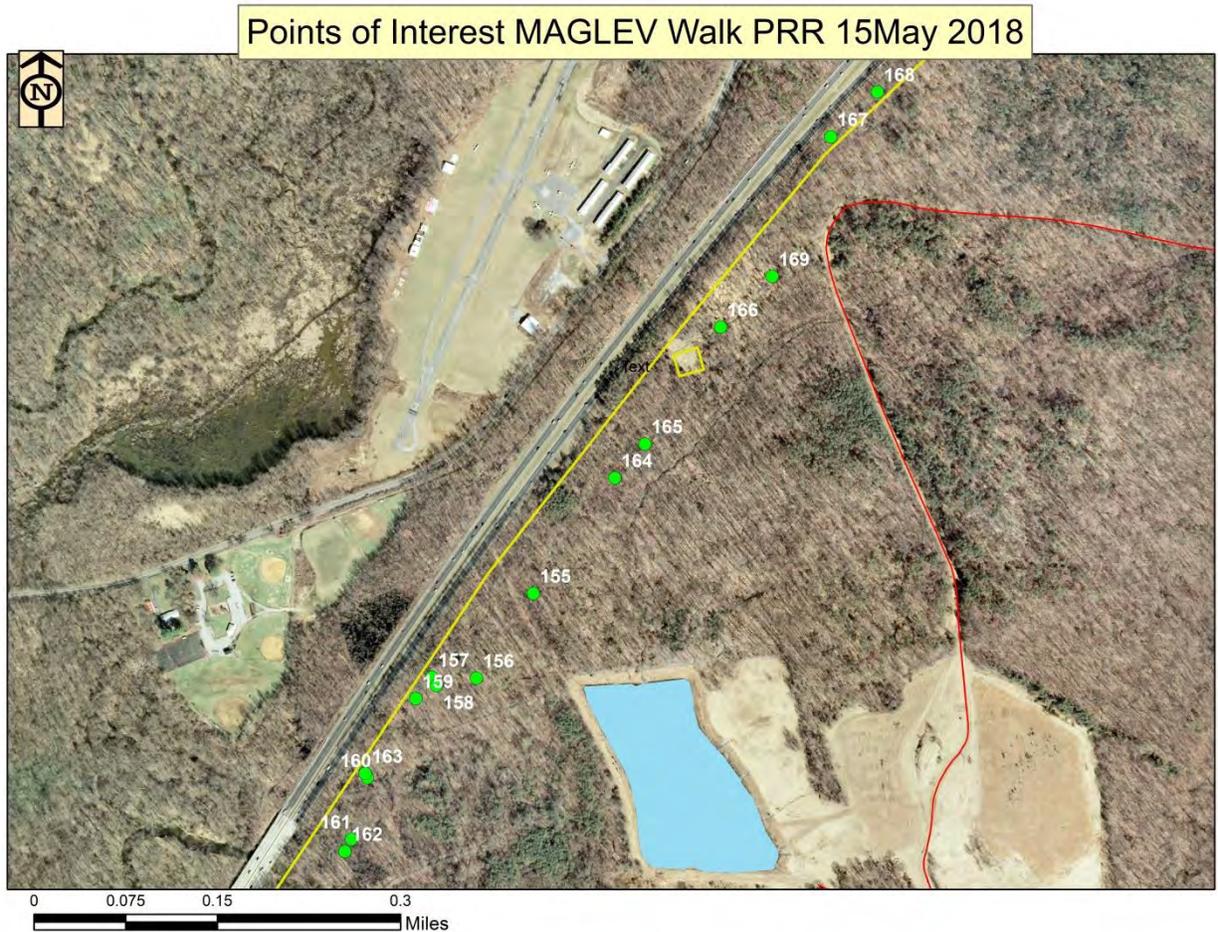
167: 39.0782 x 076.82307 Specimen Willow Oak >30", permanent forest stream, extensive white oak-blueberry-laurel community adjacent upland

168: 39.07837 x 076.82231 Oak-blueberry-laurel community

169: 39.07613 x 076.32393 Tree of heaven stand (source of spread to disturbed areas)

FIDS/SGCN/migrating birds detected:

Nashville warbler, Swainson's thrush, wood thrush, scarlet tanager, ovenbird, northern parula



Last login December 04, 2020 04:40 PM MST

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

District of Columbia and Maryland



## Local office

Chesapeake Bay Ecological Services Field Office

☎ (410) 573-4599

📠 (410) 266-9127

177 Admiral Cochrane Drive  
Annapolis, MD 21401-7307

<http://www.fws.gov/chesapeakebay/>

<http://www.fws.gov/chesapeakebay/endsppweb/ProjectReview/Index.html>

NOT FOR CONSULTATION

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department

of Commerce.

The following species are potentially affected by activities in this location:

## Mammals

NAME

STATUS

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

This species only needs to be considered if the following condition applies:

- Projects with a federal nexus that have tree clearing = to or > 15 acres: 1. REQUEST A SPECIES LIST 2. NEXT STEP: EVALUATE DETERMINATION KEYS 3. SELECT EVALUATE under the Northern Long-Eared Bat (NLEB) Consultation and 4(d) Rule Consistency key

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9045>

## Flowering Plants

NAME

STATUS

Swamp Pink *Helonias bullata*

Threatened

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/4333>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS

ELSEWHERE" INDICATES THAT  
THE BIRD DOES NOT LIKELY  
BREED IN YOUR PROJECT  
AREA.)

**American Oystercatcher** *Haematopus palliatus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8935>

Breeds Apr 15 to Aug 31

**Arctic Tern** *Sterna paradisaea*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds May 20 to Aug 15

**Bald Eagle** *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Breeds Oct 15 to Aug 31

**Black Scoter** *Melanitta nigra*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds elsewhere

**Black-billed Cuckoo** *Coccyzus erythrophthalmus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9399>

Breeds May 15 to Oct 10

**Bobolink** *Dolichonyx oryzivorus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 20 to Jul 31

**Bonaparte's Gull** *Chroicocephalus philadelphia*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds elsewhere

**Brown Pelican** *Pelecanus occidentalis*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/6034>

Breeds Jan 15 to Sep 30

**Canada Warbler** *Cardellina canadensis*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 20 to Aug 10

**Cerulean Warbler** *Dendroica cerulea*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/2974>

Breeds Apr 29 to Jul 20

**Clapper Rail** *Rallus crepitans*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds Apr 10 to Oct 31

**Common Loon** *gavia immer*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/4464>

Breeds Apr 15 to Oct 31

**Common Tern** *Sterna hirundo*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/4963>

Breeds May 10 to Sep 10

**Double-crested Cormorant** *phalacrocorax auritus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/3478>

Breeds Apr 20 to Aug 31

**Dunlin** *Calidris alpina arctica*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

**Breeds elsewhere****Eastern Whip-poor-will** *Antristomus vociferus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Breeds May 1 to Aug 20****Golden Eagle** *Aquila chrysaetos*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

**Breeds elsewhere****Golden-winged Warbler** *Vermivora chrysoptera*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8745>

**Breeds May 1 to Jul 20****Great Black-backed Gull** *Larus marinus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

**Breeds Apr 15 to Aug 20****Herring Gull** *Larus argentatus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

**Breeds Apr 20 to Aug 31****Kentucky Warbler** *Oporornis formosus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Breeds Apr 20 to Aug 20****King Rail** *Rallus elegans*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8936>

**Breeds May 1 to Sep 5**

**Least Tern** *Sterna antillarum*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

**Breeds Apr 20 to Sep 10****Lesser Yellowlegs** *Tringa flavipes*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9679>

**Breeds elsewhere****Long-eared Owl** *asio otus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3631>

**Breeds elsewhere****Long-tailed Duck** *Clangula hyemalis*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/7238>

**Breeds elsewhere****Nelson's Sparrow** *Ammodramus nelsoni*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Breeds May 15 to Sep 5****Prairie Warbler** *Dendroica discolor*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Breeds May 1 to Jul 31****Prothonotary Warbler** *Protonotaria citrea*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Breeds Apr 1 to Jul 31****Purple Sandpiper** *Calidris maritima*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Breeds elsewhere**

**Red-breasted Merganser** *Mergus serrator*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds elsewhere

**Red-headed Woodpecker** *Melanerpes erythrocephalus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10

**Red-necked Phalarope** *Phalaropus lobatus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds elsewhere

**Red-throated Loon** *Gavia stellata*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

**Ring-billed Gull** *Larus delawarensis*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds elsewhere

**Royal Tern** *Thalasseus maximus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds Apr 15 to Aug 31

**Ruddy Turnstone** *Arenaria interpres morinella*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds elsewhere

**Rusty Blackbird** *Euphagus carolinus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

**Seaside Sparrow** *Ammodramus maritimus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 20

**Semipalmated Sandpiper** *Calidris pusilla*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

**Short-billed Dowitcher** *Limnodromus griseus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9480>

Breeds elsewhere

**Snowy Owl** *Bubo scandiacus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

**Sooty Tern** *Onychoprion fuscatus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds Mar 10 to Jul 31

**Surf Scoter** *Melanitta perspicillata*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds elsewhere

**Whimbrel** *Numenius phaeopus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9483>

Breeds elsewhere

**White-winged Scoter** *Melanitta fusca*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Breeds elsewhere

**Willet** *Tringa semipalmata*

Breeds Apr 20 to Aug 5

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Wood Thrush** *Hylocichla mustelina*

Breeds May 10 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the

bar.

### Breeding Season (🟡)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

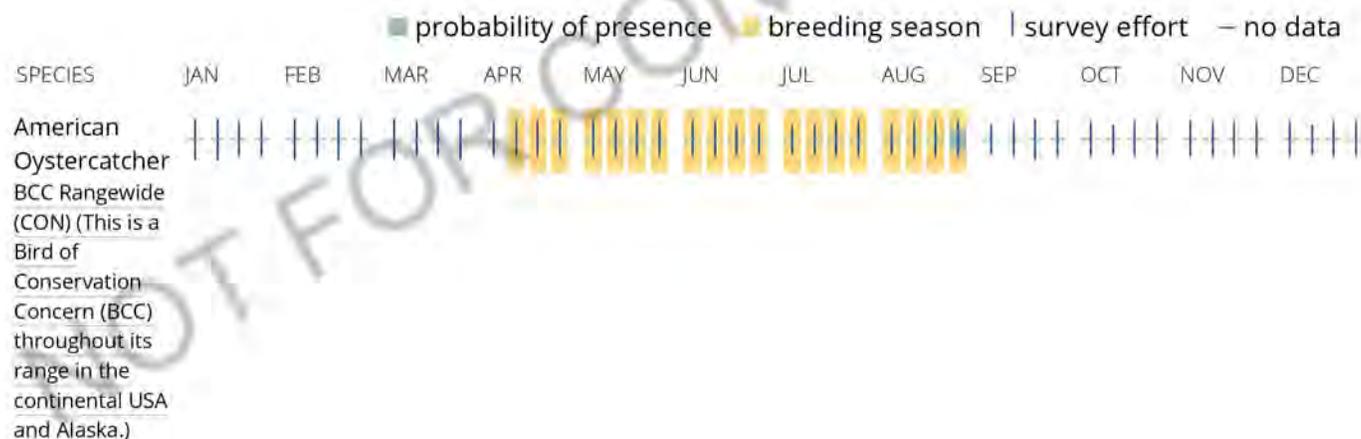
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

### No Data (—)

A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

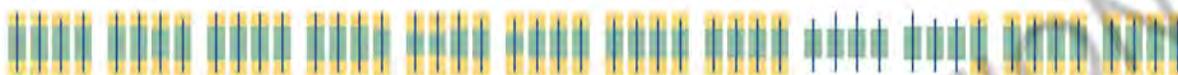
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Arctic Tern  
Non-BCC  
Vulnerable (This  
is not a Bird of  
Conservation  
Concern (BCC)  
in this area, but  
warrants  
attention  
because of the  
Eagle Act or for  
potential  
susceptibilities  
in offshore  
areas from  
certain types of  
development or  
activities.)



Bald Eagle  
Non-BCC  
Vulnerable (This  
is not a Bird of  
Conservation  
Concern (BCC)  
in this area, but  
warrants  
attention  
because of the  
Eagle Act or for  
potential  
susceptibilities  
in offshore  
areas from  
certain types of  
development or  
activities.)



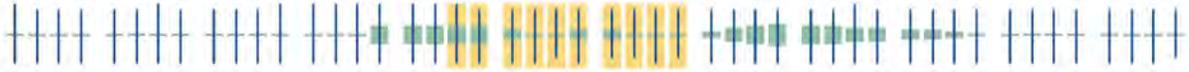
Black Scoter  
Non-BCC  
Vulnerable (This  
is not a Bird of  
Conservation  
Concern (BCC)  
in this area, but  
warrants  
attention  
because of the  
Eagle Act or for  
potential  
susceptibilities  
in offshore  
areas from  
certain types of  
development or  
activities.)



Black-billed Cuckoo  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



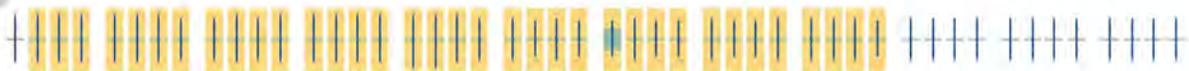
Bobolink  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Bonaparte's Gull  
 Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



Brown Pelican  
 Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



Canada Warbler  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Cerulean Warbler  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Clapper Rail  
 BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



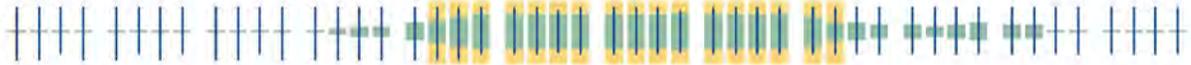
Common Loon  
 Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



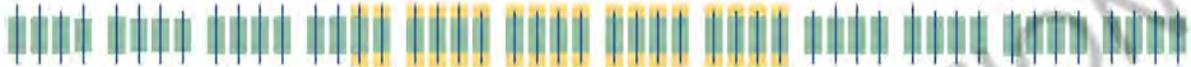
SPECIES      JAN      FEB      MAR      APR      MAY      JUN      JUL      AUG      SEP      OCT      NOV      DEC

DRAFT FOR CONSULTATION

Common Tern  
 Non-BCC  
 Vulnerable (This  
 is not a Bird of  
 Conservation  
 Concern (BCC)  
 in this area, but  
 warrants  
 attention  
 because of the  
 Eagle Act or for  
 potential  
 susceptibilities  
 in offshore  
 areas from  
 certain types of  
 development or  
 activities.)



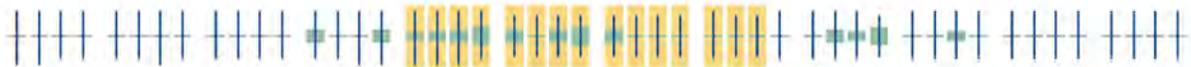
Double-crested  
 Cormorant  
 Non-BCC  
 Vulnerable (This  
 is not a Bird of  
 Conservation  
 Concern (BCC)  
 in this area, but  
 warrants  
 attention  
 because of the  
 Eagle Act or for  
 potential  
 susceptibilities  
 in offshore  
 areas from  
 certain types of  
 development or  
 activities.)



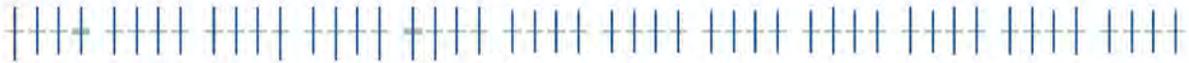
Dunlin  
 BCC - BCR (This  
 is a Bird of  
 Conservation  
 Concern (BCC)  
 only in  
 particular Bird  
 Conservation  
 Regions (BCRs)  
 in the  
 continental USA)



Eastern Whip-  
 poor-will  
 BCC Rangewide  
 (CON) (This is a  
 Bird of  
 Conservation  
 Concern (BCC)  
 throughout its  
 range in the  
 continental USA  
 and Alaska.)



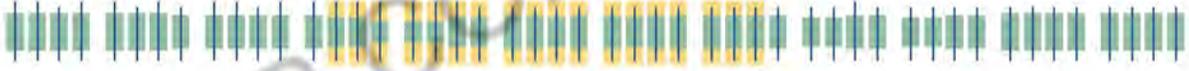
Golden Eagle  
Non-BCC  
Vulnerable (This  
is not a Bird of  
Conservation  
Concern (BCC)  
in this area, but  
warrants  
attention  
because of the  
Eagle Act or for  
potential  
susceptibilities  
in offshore  
areas from  
certain types of  
development or  
activities.)



Golden-winged  
Warbler  
BCC Rangewide  
(CON) (This is a  
Bird of  
Conservation  
Concern (BCC)  
throughout its  
range in the  
continental USA  
and Alaska.)

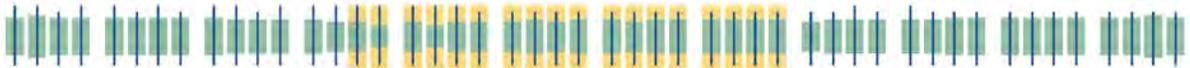


Great Black-  
backed Gull  
Non-BCC  
Vulnerable (This  
is not a Bird of  
Conservation  
Concern (BCC)  
in this area, but  
warrants  
attention  
because of the  
Eagle Act or for  
potential  
susceptibilities  
in offshore  
areas from  
certain types of  
development or  
activities.)



NOT FOR CONSULTATION

Herring Gull  
 Non-BCC  
 Vulnerable (This  
 is not a Bird of  
 Conservation  
 Concern (BCC)  
 in this area, but  
 warrants  
 attention  
 because of the  
 Eagle Act or for  
 potential  
 susceptibilities  
 in offshore  
 areas from  
 certain types of  
 development or  
 activities.)



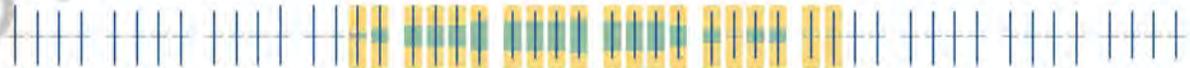
Kentucky  
 Warbler  
 BCC Rangewide  
 (CON) (This is a  
 Bird of  
 Conservation  
 Concern (BCC)  
 throughout its  
 range in the  
 continental USA  
 and Alaska.)



King Rail  
 BCC Rangewide  
 (CON) (This is a  
 Bird of  
 Conservation  
 Concern (BCC)  
 throughout its  
 range in the  
 continental USA  
 and Alaska.)



Least Tern  
 BCC - BCR (This  
 is a Bird of  
 Conservation  
 Concern (BCC)  
 only in  
 particular Bird  
 Conservation  
 Regions (BCRs)  
 in the  
 continental USA)



NOT FOR CONSULTATION

Lesser Yellowlegs  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



SPECIES      JAN      FEB      MAR      APR      MAY      JUN      JUL      AUG      SEP      OCT      NOV      DEC

Long-eared Owl  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Long-tailed Duck  
 Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

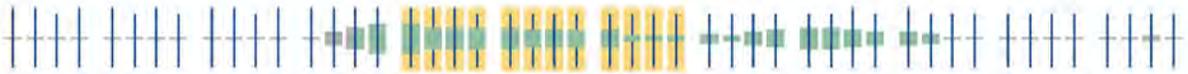


Nelson's Sparrow  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

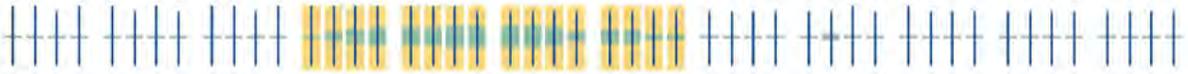


NOT FOR CONSULTATION

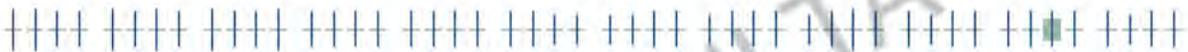
Prairie Warbler  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



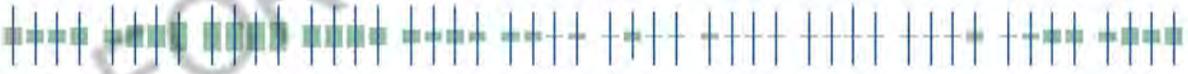
Prothonotary Warbler  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Purple Sandpiper  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

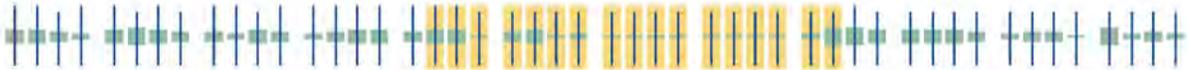


Red-breasted Merganser  
 Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



NOT FOR CONSULTATION

Red-headed Woodpecker  
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Red-necked Phalarope  
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



Red-throated Loon  
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Ring-billed Gull  
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



NOT FOR CONSULTATION

Royal Tern  
 Non-BCC  
 Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



SPECIES

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

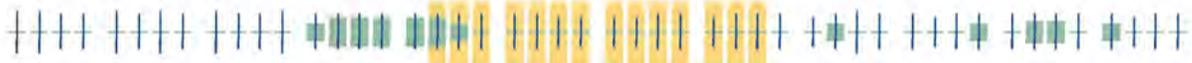
Ruddy Turnstone  
 BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



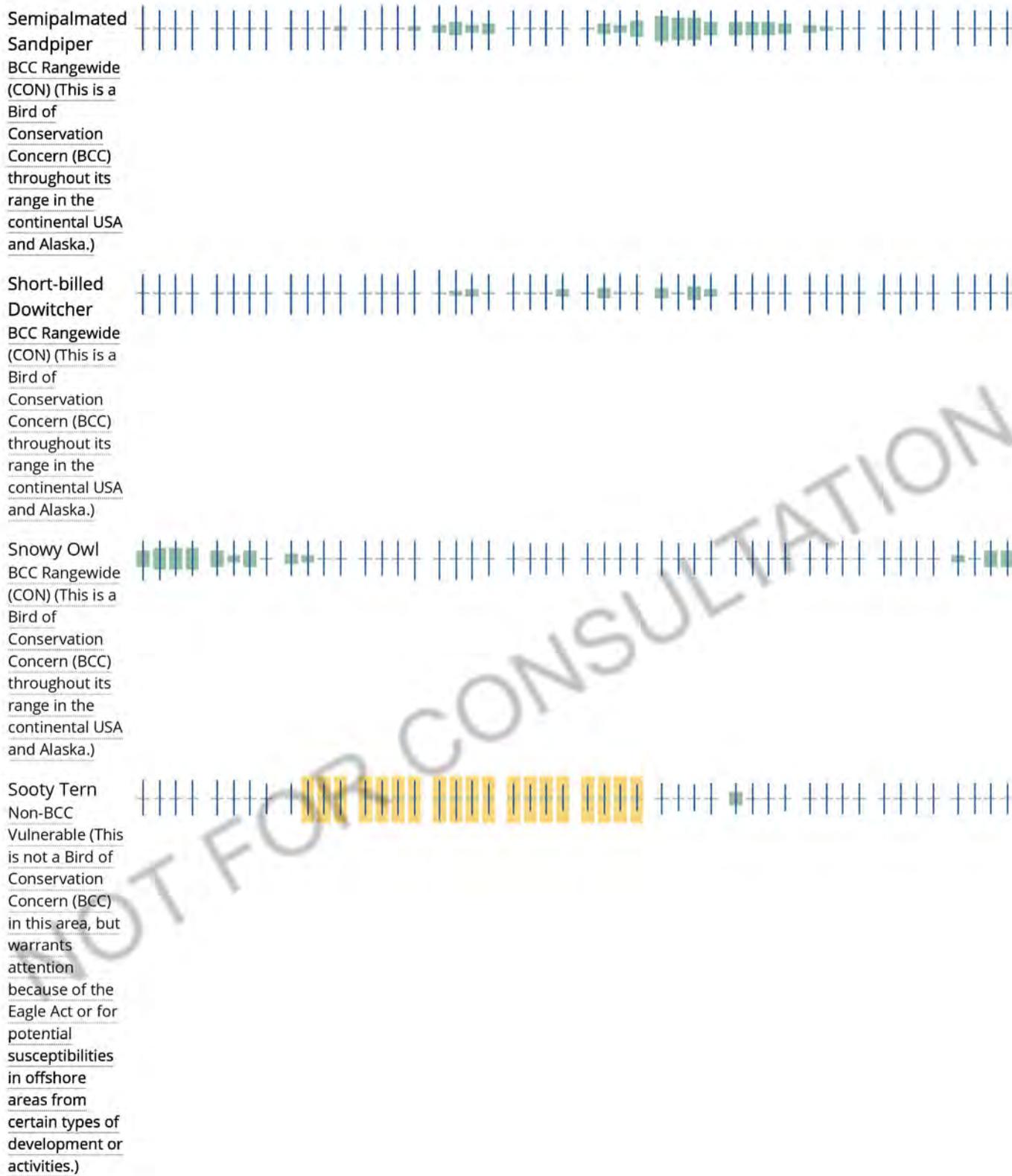
Rusty Blackbird  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Seaside Sparrow  
 BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

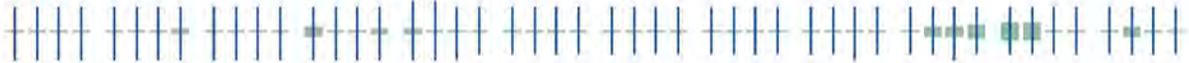


NOT FOR CONSULTATION



NOT FOR CONSULTATION

Surf Scoter  
Non-BCC  
Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



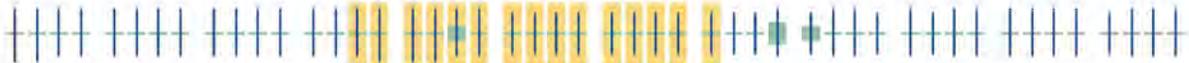
Whimbrel  
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



White-winged Scoter  
Non-BCC  
Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

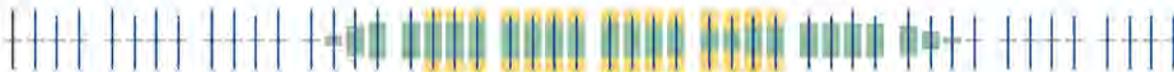


Willet  
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



NOT FOR CONSULTATION

Wood Thrush  
BCC Rangewide  
(CON) (This is a  
Bird of  
Conservation  
Concern (BCC)  
throughout its  
range in the  
continental USA  
and Alaska.)



### **Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

### **What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

## How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

## What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

## Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

## What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

## Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

This location overlaps the following National Wildlife Refuge lands:

| LAND                     | ACRES           |
|--------------------------|-----------------|
| Patuxent Research Refuge | 12,821.51 acres |

 (301) 497-5580

 (301) 497-5577

12100 Beech Forest Road, Room 138

Laurel, MD 20708-4036

<https://www.fws.gov/refuges/profiles/index.cfm?id=51640>

## Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of

estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

### **Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

## Record of Conversation

|              |  |
|--------------|--|
| Subject      | USACE Section 408 Project Review - SCMAGLEV  |
| Date         | November 11, 2018  |
| Time         | 10:30am  |
| Location     | Conference Call  |
| Attendees    | Fred Kimble, Graham McAllister, Jehu Johnson, USACE<br>Joanna Hiebler, Jenni Slacum, AECOM |
| Prepared     | November 26, 2018  |
| Prepared by  | Joanna Hiebler   |
| Distribution | All attendees  |

The purpose of the call was to follow up coordination efforts with the USACE regarding the Baltimore-Washington Super Conducting Magnetic Levitation (SCMAGLEV) project. The project will require tunneling under areas containing Federal Civil Works projects, specifically the Anacostia River Federal navigation Channel and the levee system located in the area of the Bladensburg Waterfront Park. Impacts to Federal Civil Works projects require review and approval under Section 14 of the Rivers and Harbors Act of 1899 (Section 408 review).

A brief description of the project and the locations of identified concern were discussed. Initial feedback from the USACE suggests that the depth of tunneling under the Anacostia and the levee will not result in detriment to either. The USACE's questions of great concern are regarding the potential for flooding into the proposed ventilation plants adjacent to the Anacostia. What would happen if the levee were to fail? Would the ventilation plants flood and spread within the SCMAGLEV tunnel? It does not appear that the project would include any other civil works projects or other Federal navigation channels within the SCMAGLEV study limits.

AECOM was informed of the new engineering circular [*Engineer Circular* (EC) 1165-2-220] with list of requirements regarding the Section 408 review process, and will review these prior to submittal of any project materials for review. The USACE has implemented a new policy in which the Section 408 review will occur concurrently with the Section 404 review, and project approvals provided at the same time.

The project will require a Letter of No Objection from Prince George's County as well. Mr. Vernon Griffin and Ms. Gwendolyn Clerkly were provided as points of contact with the county. The project will also require Public Notice. During the construction phase of the project it will also require a Notice to Mariners, as well as NOAA, for posting on navigation charts.

The USACE provided information on publically available GIS information on the National Levee Database. This initial coordination with the USACE will be documented in the DEIS for the project and further guidance provided for the private sponsor in moving forward with the permitting process.

This transmission is confidential and intended solely for the person or organization to whom it is addressed. It may contain privileged and confidential information. If you are not the intended recipient, you should not copy, distribute or take any action in reliance on it.



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Chesapeake Bay Ecological Services Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401-7307  
Phone: (410) 573-4599 Fax: (410) 266-9127

<http://www.fws.gov/chesapeakebay/>  
<http://www.fws.gov/chesapeakebay/endsppweb/ProjectReview/Index.html>

In Reply Refer To:

April 08, 2019

Consultation Code: 05E2CB00-2019-SLI-0768

Event Code: 05E2CB00-2019-E-02786

Project Name: Baltimore-Washington Maglev Project

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. This species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
  - USFWS National Wildlife Refuges and Fish Hatcheries
  - Wetlands
-

# Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chesapeake Bay Ecological Services Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401-7307  
(410) 573-4599

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## Project Summary

Consultation Code: 05E2CB00-2019-SLI-0768

Event Code: 05E2CB00-2019-E-02786

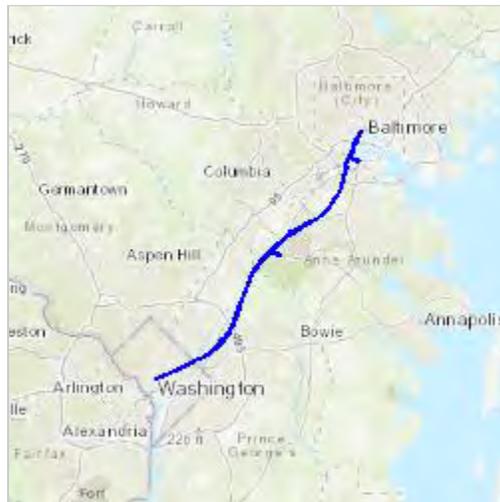
Project Name: Baltimore-Washington Maglev Project

Project Type: TRANSPORTATION

Project Description: The project involves building a high-speed magnetic levitation train between Baltimore and Washington, DC.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/39.09326632145492N76.781955579667W>



Counties: District of Columbia, DC | Anne Arundel, MD | Baltimore, MD | Baltimore, MD | Prince George's, MD

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## Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

| NAME  | STATUS     |
|---|------------|
| Northern Long-eared Bat <i>Myotis septentrionalis</i><br>No critical habitat has been designated for this species.<br>This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> <li>▪ Federal agencies may finish consultation with the NLEB 4(d) Rule Consultation Form at <a href="https://www.fws.gov/chesapeakebay/pdf/StreamlinedConsultationForm29Feb2016.pdf">https://www.fws.gov/chesapeakebay/pdf/StreamlinedConsultationForm29Feb2016.pdf</a> for projects with tree clearing = to or &gt; 15 acres; send to Trevor_Clark@fws.gov</li> </ul> Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a> | Threatened |

## Flowering Plants

| NAME  | STATUS     |
|---|------------|
| Swamp Pink <i>Helonias bullata</i><br>No critical habitat has been designated for this species.<br>Species profile: <a href="https://ecos.fws.gov/ecp/species/4333">https://ecos.fws.gov/ecp/species/4333</a> | Threatened |

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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# USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

| FACILITY NAME  | ACRES  |
|--|--------|
| <b>Patuxent Research Refuge</b><br>Patuxent Research Refuge<br>12100 Beech Forest Road, Room 138<br>Laurel, MD 20708-4036<br>(301) 497-5580<br><br><a href="https://www.fws.gov/refuges/profiles/index.cfm?id=51640">https://www.fws.gov/refuges/profiles/index.cfm?id=51640</a> | 10,400 |

# Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT [HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML](https://www.fws.gov/wetlands/data/mapper.html) OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

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**MARYLAND**  
 DEPARTMENT OF  
 NATURAL RESOURCES

Larry Hogan, Governor  
 Boyd Rutherford, Lt. Governor  
 Mark Belton, Secretary  
 Joanne Throwe, Deputy Secretary

July 31, 2018

**MEMORANDUM**

To: Angela Jones, Project Manager SC MAGLEV for MDOT  
 Erin Knauer, IPR  
 From: Lori Byrne, WHS  
 Cc: Katharine McCarthy, WHS  
 Dave Brinker, WHS  
 Lynn Davidson, WHS  
 Julie Thompson, US FWS  
 Re: **Revised Comments - SCMAGLEV: Baltimore City/County and Anne Arundel and Prince George's Counties, MD**

The Wildlife and Heritage Service has determined that there are the following areas within the proposed project site ( as shown on the shapefile dated 06/19/18) which may be directly impacted by this project. Direct impacts could include destruction of individuals during construction, impacts to aquatic larva from degradation of water quality or changes in hydrology, and/or alteration of habitat (e.g., shading of normally open areas or placement of bridge piers in wetlands).

- At the corner of Charles Street and Lombard Street in Baltimore City near the north end of the project route, there is a building that supports a nest site of the American Peregrine Falcon (*Falco peregrinus anatum*). This species has In Need of Conservation breeding status in Maryland, although we would not anticipate adverse impacts to this nest site from any normal construction activity associated with this project.
- In the Harmans area, there are records of the state and federally-listed Swamp Pink (*Helonias bullata*) in Piney Run as well as Upper Stony Run (south of BWI Airport). This perennial wildflower occurs in areas of nontidal wetland habitat, including forested wet depressions, spring seeps, bogs, wet meadows and margins of small streams. The wetland located between Harmans Road and Ridge Road appears to be directly impacted by the proposed project route. We recommend that surveys for Swamp Pink be conducted in areas of suitable habitat in this portion of the project route.

- Where the project route crosses the Little Patuxent River there are records upstream and downstream for the following rare species, as well as two colony sites for Great Blue Herons (See note on heron colonies):

| <u>Scientific Name</u>                    | <u>Common Name</u>     | <u>State Status</u>     |
|---|------------------------|-------------------------|
| <i>Stylurus laurae</i>                    | Laura's Clubtail       | Rare                    |
| <i>Libellula flavida</i>                  | Yellow-sided Skimmer   | Rare                    |
| <i>Helocordulia selysii</i>               | Selys' Sundragon       | Threatened              |
| <i>Nannothemis bella</i>                  | Elfin Skimmer          | Endangered              |
| <i>Somatochloa provocans</i>              | Treetop Emerald        | Endangered              |
| <i>Epitheca costalis</i>                  | Slender Baskettail     | Highly Rare             |
| <i>Celithemis martha</i>                  | Martha's Pennant       | Highly Rare             |
| <i>Gomphaeschna antilope</i>              | Taper-tailed Darner    | Rare                    |
| <i>Nehalennia gracilis</i>                | Sphagnum Sprite        | Rare                    |
| <i>Nehalennia integricollis</i>           | Southern Sprite        | Highly Rare             |
| <i>Gomphus rogersi</i>                    | Sable Clubtail         | In Need of Conservation |
| <i>Ophiogomphus incurvatus incurvatus</i> | Appalachian Snaketail  | Endangered              |
| <i>Lethenteron appendix</i>               | American Brook Lamprey | Threatened              |
| <i>Etheostoma vitreum</i>                 | Glassy Darter          | Threatened              |

|           |                          |
|-----------|--------------------------|
| Location: | Patuxent Research Refuge |
|-----------|--------------------------|

|           |               |                |
|-----------|---------------|----------------|
| Date      | 7/24/2019     |                |
| Attendees | Don Bole      | Ed Samanns     |
|           | Jeff Thompson | Joanna Hiebler |
|           | Phatta Thapa  | Kate Traut     |

| General Notes/Questions   | Action Item |
|---|-------------|
| Clarified that delineations at PRR were determined based on vegetation and hydrology. Hydric soils determination subject to UXO sweeper coordination. | None.       |
| Patuxent River is a highly sensitive area due to NTWSSC, RTE species/habitat, and designation as Scenic River.  | None.       |
| MDE confirmed (on 7/25/19) that the 100-yr floodplain extends NE of the Patuxent River to Blue Heron Pond.  | None.       |

| System Reviews                 |  |  |
|--------------------------------|--|--|
| ID                             | Comment  | Action Item  |
| [Various]                      | MDE/USACE reviewed and accepted the following systems (boundaries and classifications), unless otherwise determined below:<br>Wetlands WP001, WP002, WP004, WP008, WP009, WP012, WP015, WP026, WP107, WP022, WP023, WP020, WP160, WP161<br>Waterways WL003, WL005, WL006, WL010, WL011, WL013, WL014, WL019, WL021, WL124, WL125, WL125B |  |
| WL006                          | USACE stated that this waterway may provide a possible opportunity for mitigation.   | <i>The project team will consider this mitigation opportunity during the permitting process.</i>                   |
| WP160                          | Most of this wetland occurs beyond the study area boundary toward the BW Pkwy and does not appear to be directly located within the LOD; therefore, direct impacts are not anticipated.  | <i>None.</i>   |
| [WL124]<br>[WL125]<br>[WL125B] | USACE does not consider these ditches waters of the US; MDE does not consider them waters of the State.  | <i>Straughan will revise GIS and documentation to remove these three systems.</i>                                  |
| WP020                          | This wetland is located on the mapped boundary of the NTWSSC. Will this wetland be included in the NTWSSC boundary and buffered 100 feet?  | <i>MDE will look into how NTWSSC boundaries and buffers will be identified and how impacts will be calculated.</i> |
| WP108                          | This system was viewed from the north bank of the Patuxent River. MDE recommends considering F19 Piedmont Floodplain soils indicator and viewing LIDAR and six-inch imagery to help determine extent of wetland/upland inclusions.   | <i>Straughan/WSP will look at LIDAR and six-inch imagery to better inform the extent of wetlands.</i>              |

|           |                  |  |
|-----------|------------------|--|
| Location: | Veterans Parkway |  |
|-----------|------------------|--|

Date 7/24/2019

|           |               |                |
|-----------|---------------|----------------|
| Attendees | Don Bole      | Ed Samanns     |
|           | Jeff Thompson | Joanna Hiebler |
|           | Phatta Thapa  | Kate Traut     |

| General Notes/Questions   | Action Item   |
|---|---|
| Site includes remnant E&SC and access clearing from apparent sewer work.  | <i>None.</i>  |
| Engineering effort will be needed to resolve hydrology constraints at this site. The regulators stated some concern that saving/relocating some systems could result in hydrologic changes that could impact remaining systems. | <i>None.</i>  |
| MDE/USACE both question why this proposed structure would be placed in this location, and what consideration was given to shifting the footprint in the general area to avoid this stream/wetland complex.                      | <i>If design does not change, WSP will include an alternatives discussion justifying why the LOD cannot be shifted into adjacent uplands, further from the roadway.</i> |

| System Reviews |   |   |
|----------------|---|---|
| ID             | Comment   | Action Item   |
| [Various]      | MDE/USACE reviewed and accepted the following systems (boundaries and classifications), unless otherwise determined below:<br>Wetlands WP190, WP191, WP192, WP187<br>Waterways WL193, WL186 |   |
| WP192          | Wetland indicators were observed beyond the boundary of WP192 along the sewer access path, resulting in an extension of the wetland boundary.   | <i>Straughan will revise GIS and documentation to extend the boundary as delineated in the field.</i> |

|           |  |
|-----------|--|
| Location: | Patuxent River West & Southeast of BW Pkwy |
|-----------|--|

Date 7/25/2019  
Attendees Jeff Thompson  
Phatta Thapa  
Kate Traut

| General Notes/Questions  | Action Item  |
|--|--|
| MDE questioned whether the Maglev train would result in bird/wildlife strikes, particularly in areas associated with good habitat where wildlife/birds may be particularly drawn to (i.e., is this a "sink" opportunity?). | <i>The project team will include this question in agency comments for the project and address accordingly.</i> |

| System Reviews |  |  |
|----------------|--|--|
| ID             | Comment  | Action Item  |
| [Various]      | MDE reviewed and accepted the following systems (boundaries and classifications), unless otherwise determined below:<br>Wetlands WP070, WP111, WP112, WP066, WP153, WP108, WP108A<br>Waterways WL071, WL113, WL064, WL065, WL154, WL085, WL109, WL110, WL111 |  |
| WP070          | MDE echoed USACE's comment from a previous visit: this is a high quality wetland and should be avoided if possible.  | <i>The project team will consider this comment as avoidance and minimization efforts continue.</i>   |
| WP070 & WP111  | WP070 PFO boundary extends south along BW Pkwy outside of study area to WP111.   | <i>Straughan will revise GIS and documentation to show extended boundary of PFO and PEM components of WP070, per field observations and GPS notations.</i> |
| WP111 & WP112  | These systems appear to be connected by an ephemeral channel.  | <i>Straughan will revise GIS and documentation to show ephemeral channel connecting WP111 and WP112, per field observations and GPS notations.</i>         |
| WP112 & WL071  | The wetland extends to the waterway, as field delineation flagging shows. The GIS polygons need to be adjusted accordingly.  | <i>Straughan will revise GIS and documentation to show WP112 and WL071 are connected.</i>  |
| WL113          | MDE stated that all appropriate analyses (floodplain, scour, etc.) will be needed if piers are proposed near the waterway (Patuxent River). Avoid placing piers in the river.  | <i>The project team will provide the necessary analyses and will consider this comment as avoidance and minimization efforts continue.</i>                 |
| WP066          | Adjacent to parking lot to SE, delineation should include area with hydrology (drainage patterns, stained leaves), vegetation (sweet woodreed, <i>Carex</i> spp.), and F19 soils.  | <i>Straughan will revise GIS to show extended boundary of WP066, per field observations and GPS notations.</i>   |

|        |  |  |
|--------|--|--|
|        | Discussion of wetland/upland inclusion percentage included observing dominant hydric vegetation (sweet woodreed, false nettle, <i>Carex</i> spp.), network of depressions and drainage channels, and weak/inconsistent soils, with F19 soils somewhat apparent in upper soil layers. Considerations include transect plots, using mapped soils for percent hydric/nonhydric, including a comment in the JPA review to conduct more detailed delineation as design elements are refined.                    | <i>MDE and Straughan/WSP will continue discussing how best to decipher the wetland/upland mosaic of WP066.</i>   |
|        | The area between WL113 and WL071 should be included in the discussion of wetland/upland inclusion due to field observations of hydric vegetation, crayfish burrows, and depressional areas.  | <i>MDE and Straughan/WSP will continue discussing how best to decipher the wetland/upland mosaic of WP066.</i>   |
| WL154  | MDE determined this waterway to be ephemeral, not intermittent.  | <i>Straughan will revise GIS and documentation to adjust this classification to ephemeral.</i>   |
| WL085  | MDE determined this waterway to be wetland drainage, not intermittent.   | <i>Straughan will revise GIS and documentation to adjust this classification. Straughan will consult with USACE to determine if the classification should be changed to ephemeral or considered wetland drainage only.</i> |
| WP108  | MDE confirmed that the WP108 wetland polygon does not include upland inclusions and should remain distinct from WP108A in this regard. MDE commented on the high quality of this portion of the wetland.   | <i>Straughan will confirm that WP108 and WP108A remain distinct in GIS and documentation regarding upland inclusions.</i>  |
| WP108A | Similar to WP066, discussion of wetland/upland inclusion percentage included observing dominant hydric vegetation (sweet woodreed, false nettle, <i>Carex</i> spp.) , network of depressions and drainage channels, and weak/inconsistent soils, with F19 soils somewhat apparent in upper soil layers. Considerations include transect plots, using mapped soils for percent hydric/nonhydric, including a comment in the JPA review to conduct more detailed delineation as design elements are refined. | <i>MDE and Straughan/WSP will continue discussing how best to decipher the wetland/upland mosaic of WP066.</i>   |

|           |               |
|-----------|---------------|
| Location: | Hermosa Drive |
|-----------|---------------|

Date 7/25/2019  
Attendees Jeff Thompson  
Phatta Thapa  
Kate Traut

| General Notes/Questions | Action Item |
|-------------------------|-------------|
| None.                   |             |

| System Reviews |  |   |
|----------------|--|---|
| ID             | Comment  | Action Item   |
| [Various]      | MDE reviewed and accepted the following systems (boundaries and classifications), unless otherwise determined below:<br>Wetlands WP084<br>Waterways WL091, WL083   |   |
| [WP517]        | This small depressional area exhibited hydric soils (redox mottles), hydrophytic vegetation (red maple), and hydrology (sparsely vegetated concave surface, water-stained leaves). MDE confirmed the field-delineated boundary and indicators. A woodfrog was observed in this area. | <i>Straughan will revise GIS and documentation to add this PFO wetland.</i> |
| [WP518]        | This area receives flow from WL091 and exhibited hydric soils (F3), FAC vegetation (American holly, blackgum, common greenbrier), and hydrology (saturation). MDE confirmed the field-delineated boundary and indicators.  | <i>Straughan will revise GIS and documentation to add this PFO wetland.</i> |

|           |                |
|-----------|----------------|
| Location: | Baltimore City |
|-----------|----------------|

Date 7/26/2019  
Attendees Jeff Thompson  
Phatta Thapa  
Kate Traut

| General Notes/Questions | Action Item |
|-------------------------|-------------|
| None.                   |             |

| System Reviews |   |  |
|----------------|---|--|
| ID             | Comment   | Action Item  |
| [Various]      | MDE reviewed and accepted the following systems (boundaries and classifications), unless otherwise determined below:<br>Wetlands WP095, WP095B, WP169, WP098, WP096<br>Waterways WL094, WL097   |  |
| WL094          | MDE determined this waterway to be perennial, not intermittent.   | <i>Straughan will revise GIS and documentation to adjust this classification to perennial.</i> |
| [WP519]        | This ponded area is potentially an unmaintained stormwater management feature between the Light Rail track embankment and the BGE right-of-way. It exhibited open water with emergent vegetation. MDE requested this system be delineated via aerial mapping.   | <i>Straughan will revise GIS and documentation to add this PFO wetland.</i>                    |
| WP095          | This system is adjacent to a homeless encampment.   | <i>None.</i>   |
| WP169          | MDE determined the tidal line to be a topographic break that splits the wetland between tidal influence to the west and nontidal (seasonally flooded) to the east. MDE further clarified that if the tidal portion of the wetland were to be impacted, a tidal wetlands license would be required, assuming this area is considered high marsh. If it were considered low marsh, it would be considered a state wetland and would require Board of Public Works review. | <i>Straughan will revise GIS and documentation to demarcate the tidal/nontidal boundary.</i>   |
| WP098          | MDE commented that the phragmites changes height, which might suggest that the topography of the wetland may rise moving south from the BGE right-of-way.   | <i>None.</i>   |

|           |      |
|-----------|------|
| Location: | BARC |
|-----------|------|

Date 7/29/2019  
Attendees Jeff Thompson  
Kate Traut

| General Notes/Questions | Action Item |
|-------------------------|-------------|
| None.                   |             |

| System Reviews |  |  |
|----------------|--|--|
| ID             | Comment  | Action Item  |
| [Various]      | MDE reviewed and accepted the following systems (boundaries and classifications), unless otherwise determined below:<br>Wetlands WP115, WP117, WP133, WP128, WP068   |  |
| WP115          | MDE observed this wetland to be high quality (with Virginia chain fern) with PEM inclusions due to dying canopy maples.  | <i>The project team will consider this comment as avoidance and minimization efforts continue.</i>   |
| WP133          | MDE observed this wetland to be a unique, high quality wetland dominated by old cypress trees/knees. This wetland will require avoidance. An old spring house foundation occurs at the southern toe of slope. This wetland boundary extends further south to the toe of slope.<br>Note: subsequent discussion of this wetland resulted in USACE requesting a time to review this system. | <i>Straughan will revise GIS and documentation to extend the boundary per field observations with MDE.<br/>Straughan will coordinate with USACE to visit this wetland.</i> |
| [WP520]        | A floodplain area north of WL129 exhibits hydrophytic vegetation ( <i>Carex</i> spp., common greenbrier, false-nettle, red maple, sweetgum, sweet woodreed), hydric soils (mottles), and hydrology (geomorphic position and drift deposits). Overland flow appears to drain into this area from the field to the east.   | <i>Straughan will revise GIS and documentation to add this wetland, per field observations with MDE.</i>   |
| WP128          | This wetland boundary extends further north to WL131, based on F19 soils, drainage patterns, and dominant hydrophytic vegetation (false nettle, sweet woodreed, clearweed). NOTE: the southern portion of this wetland is high-quality and should be prioritized in considering avoidance/minimization measures.   | <i>Straughan will revise GIS and documentation to extend the boundary per field observations with MDE.</i>   |
| WP068          | This wetland boundary extends further south to WL131.  | <i>Straughan will revise GIS and documentation to extend the boundary per field observations with MDE.</i>   |

|         |   |  |
|---------|---|--|
| [WP521] | This 5-ft-wide swale exhibits wetland conditions and is located in the vegetated edge between two fallow fields. Dense vegetation at the west end of this swale made observations very difficult, but it appeared to diffuse into a flatter area with more upland vegetation. | <i>Straughan will revise GIS and documentation to add this wetland, per field observations with MDE.</i> |
|---------|---|--|

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|           |               |              |
|-----------|---------------|--------------|
| Date      | 7/31/2019     |              |
| Attendees | Don Bole      | Ed Samanns   |
|           | Jeff Thompson | Mitch Keiler |
|           | Phatta Thapa  | Kate Traut   |

| General Notes/Questions  | Action Item  |
|--|--|
| Mitch Keiler (Ft. Meade) participated in the field review as an official base escort and to review the differences between the current delineation and the 2014 Ft. Meade delineation files. | <i>None.</i>   |
| MDE and Ft. Meade asked if the proposed structure in the vicinity of wetland WP143 could be relocated to avoid the wetland.  | <i>The project team will consider this comment as avoidance and minimization efforts continue.</i> |

| System Reviews |   |  |
|----------------|---|--|
| ID             | Comment   | Action Item  |
| [Various]      | MDE/USACE reviewed and accepted the following systems (boundaries and classifications), unless otherwise determined below:<br>Wetlands WP148, WP149, WP151, WP143, WP144, WP145, WP147<br>Waterways WL028, WL033, WL034, WL142, WL144, WL146, WL150   |  |
| WP151          | Prior to the agency site visit (but after wetland delineation mapping was disseminated), this system boundary was adjusted in GIS to better align with flagging and field sketches from the original delineation. During the agency visit, this system was observed extending beyond the Ft. Meade property fence toward the edge of nearby fields. | <i>Straughan will revise GIS and documentation to adjust boundaries per original (Straughan) delineation flagging and agency field observations.</i> |
| WL150          | This waterway is better represented on the mapping by the 2014 Ft. Meade delineation data.  | <i>Straughan will revise GIS and documentation to adjust WL 150 boundary to better match the sinuosity of the 2014 Ft. Meade data.</i>               |
| WL149          | USACE determined the drainage through wetland WP149 to be an ephemeral/intermittent waterway.   | <i>Straughan will revise GIS and documentation to add this waterway and identify the transition from ephemeral to intermittent.</i>                  |
| WP148          | This wetland was identified during the Straughan field investigation but not in the 2014 Ft. Meade wetland data. USACE and MDE confirmed this as a PFO wetland.   | <i>None.</i>   |
| [WL144]        | MDE and USACE determined this waterway to be an erosional feature, not waters of the US or State.   | <i>Straughan will revise GIS and documentation to remove this waterway.</i>  |
| WL142          | USACE and MDE identified the point at which this system transitions from intermittent to perennial.   | <i>Straughan will revise GIS and documentation to adjust the classification for this waterway.</i>   |
| WP143          | This system boundary follows the flagging in the field along the northeastern edge (very similar to the 2014 Ft. Meade data), not the mapped edge. The westernmost edge of this wetland within the study area extends to WL142.   | <i>Straughan will revise GIS and documentation to adjust the boundary per original (Straughan) flagging and agency field observations.</i>           |

|                 |   |  |
|-----------------|---|--|
| WP144           | This system boundary follows the flagging in the field and 2014 Ft. Meade boundary along the southern edge. | <i>Straughan will revise GIS files and documentation to adjust the boundary per original (Straughan) flagging and agency field observations.</i> |
| WL034 and WL146 | These waterways connect within WP147.   | <i>Straughan will revise GIS files and documentation to ensure these waterways are contiguous.</i>   |
| WL146           | This waterway was determined to be intermittent.  | <i>Straughan will revise GIS files and documentation to reflect this system as intermittent.</i>   |

# MEMORANDUM

**DATE:** August 29, 2019  
**SUBJECT:** SCMAGLEV Pre-Application Site Visit Summary (FINAL) – July 2019  
**TO:** Attendees  
**CC:** Mark Cheskey, AECOM  
 Kelly Lyles, MTA  
 Larry Pesesky, WSP  
**FROM:** Kate Traut, Straughan Environmental, Inc.

## Purpose

The following summary documents agency (USACE and MDE) review and discussion of delineated wetlands and waterways along the proposed SCMAGLEV project alignment (J and J1). The project team (represented by WSP, AECOM, and Straughan Environmental) facilitated pre-application site visits on July 24, 25, 26, 29, and 31. Attendees, locations, site-specific discussions, and action items (italicized) are documented on the following pages by date. Systems that have been added or removed based on agency input are presented in brackets (e.g., [WP157]).

## Attendees

| Name           | Agency/Co. (role)                      | Email  |
|----------------|--|--|
| Don Bole       | USACE                                  | <a href="mailto:Donald.R.Bole@usace.army.mil">Donald.R.Bole@usace.army.mil</a>           |
| Jeff Thompson  | MDE Nontidal Wetlands                  | <a href="mailto:jeffrey.thompson@maryland.gov">jeffrey.thompson@maryland.gov</a>         |
| Phatta Thapa   | MDE Waterway Construction              | <a href="mailto:phatta.thapa@maryland.gov">phatta.thapa@maryland.gov</a>                 |
| Ed Samanns     | WSP (Permitting)                       | <a href="mailto:ed.samanns@wsp.com">ed.samanns@wsp.com</a>                               |
| Joanna Heibler | AECOM (NEPA)                           | <a href="mailto:joanna.hieber@aecom.com">joanna.hieber@aecom.com</a>                     |
| Kate Traut     | Straughan Environmental (Delineations) | <a href="mailto:ktraut@straughanenvironmental.com">ktraut@straughanenvironmental.com</a> |
| Mitch Keiler   | Ft. George G. Meade                    | <a href="mailto:mitchell.a.keiler2.civ@mail.mil">mitchell.a.keiler2.civ@mail.mil</a>     |

## Overview of Locations by Date

| Date    | Location                                     | Agency/Company in Attendance   |
|---------|--|--|
| 7/24/19 | Patuxent Research Refuge<br>Veterans Parkway | USACE, MDE Nontidal Wetlands, MDE Waterways, AECOM, WSP, Straughan     |
| 7/25/19 | Patuxent River<br>Hermosa Drive              | MDE Nontidal Wetlands, MDE Waterways, Straughan                        |
| 7/26/19 | Baltimore City                               | MDE Nontidal Wetlands, MDE Waterways, Straughan                        |
| 7/29/19 | BARC   | MDE Nontidal Wetlands, Straughan                                       |
| 7/31/19 | Ft. Meade                                    | USACE, MDE Nontidal Wetlands, MDE Waterways, Ft. Meade, WSP, Straughan |

## General Discussion/Comments

- Discussion of impacts clarified that the location of guideway piers will be permanent impacts to resources. Clearing of vegetation between piers/within LOD will constitute PFO/PSS wetland conversion impacts (if not returned to PFO/PSS) and/or temporary impacts. It is assumed that temporary access roads will be maintained as permanent roads in uplands only.
- MDE requested that a note be added to impact mapping stating that wetlands extend beyond the delineated boundary, as applicable.
  - *Straughan will ensure GIS data includes applicable notes for each system.*
  - *The project team will add notes to impact mapping stating wetlands extend beyond delineated boundary, as applicable.*
- USACE stated that relocating streams is preferable to piping.
- Desktop-delineated wetlands throughout the project corridor may be impacted. AECOM clarified that the goal will be to avoid and minimized impacts to mapped/delineated resources, then reach out to private landowners for more detailed delineation.
- MDE asked what happens to overhead utilities within the project alignment? The impacts from relocating and/or burying these utilities will need to be included in JPA impacts.
  - *The project team will include utility relocation/burial impacts in the JPA.*
- MDE asked how flexible are the non-linear component locations?
  - *The project team will include this question in agency comments for the project and address accordingly.*
- MDE asked what is the sequence of construction?
  - *The project team will include this question in agency comments for the project and address accordingly.*
- In high-quality wetlands (such as the Beaverdam WSSC), MDE stated that hand clearing of vegetation may be required.
- MDE asked if project access roads can be narrowed or rerouted for minimization of wetland/waterway impacts. If they cannot be adjusted, justification is required.
- USACE requested revised mapping and table of system acreages/linear feet based on revised system boundaries.
  - *Straughan will revise GIS and documentation per field observations with MDE and USACE and provide updated information.*

We believe that the above accurately reflects what transpired during the site visits. We will appreciate your contacting Kate Traut of Straughan Environmental, Inc. at 443-539-2513 or via email at [ktraut@straughanenvironmental.com](mailto:ktraut@straughanenvironmental.com) to submit addenda to the meeting minutes or to discuss discrepancies in understanding of what occurred. Unless notified in writing to the contrary within five (5) days after receipt, we will assume that all in attendance concur in the accuracy of this transcription.



## **SCMAGLEV & USFWS Workshop**

**June 11, 2020**

**1:00-2:00**

### **Meeting Notes**

#### **Teams meeting with the following participants:**

FRA: Brandon Bratcher, Matthew Mielke, Katherine Zeringue

AECOM: Mark Cheskey, Brian Lange, Susan Anderson

MDOT: Jacqueline Thorne, Lauren Molesworth, Kelly Lyles

USFWS: Jennifer Greiner, Ray Li, Tarik Adams, Sandy Spenser, Chris Guy, Thomas O'Connell

Medco: Steve Cassard

BWRR: Bill Scott, Furqan Siddiqi

This is a summary of the discussion, not a direct transcript. Please notify the project manager of any changes or corrections needed.

#### **The workshop meeting highlights include:**

The purpose the workshop was to share project updates, since the project pause in July 2019, outline changes that occurred between Summer 2019 and the current design and outline next steps. The NEPA Team also requested feedback from the agencies throughout the presentation (presentation attached).

- USFWS (Ray) asked Maryland Economic Development Corporation's (MEDCO) role in the project. Answer: MEDCO (Steve) explained the interagency agreement with MDOT and the role of MEDCO to foster economic development and be the liaison between the private company project sponsor BWRR and the federal agency FRA.
- USFWS asked if the construction access will revert to USFWS land or converted to system facilities. Answer: AECOM said the blue lines (on the slide) represent permanent facilities (such as SWM) and the green is planned to be restored back to USFWS land. BWRR concurred.
- USFWS (Sandy) asked if they can see maps with the official USFWS property boundary for the next meeting. Answer: AECOM agreed to have mapping with boundaries.
- USFWS (Jennifer) stated that USFWS needs an outline of potential field work and locations for the NEPA Team existing conditions data. AECOM stated they are developing this list and will send early next week.
- USFWS (Sandy) asked what coordination has been done with BGE given the construction laydown facility overlaps BGE right-of-way. Answer: BWRR said they have been discussing the project with BGE but no decisions have been made at this time.

- USFWS (Sandy) asked if the BGE property will be included in the acreage calculation. Answer: yes.
- USFWS (Ray) asked if there will be a separate structure or above for power lines or will they be buried. Answer: BWRR said the decision has not been made yet.
- USFWS (Sandy) asked how far the piers are spaced near the river crossing. Answer: AECOM said the normal 120-foot span, at river, span is potentially greater to avoid impacts to the river. The project sponsor is taking special consideration of the river crossing. The reason the blue outline along the viaduct is because of taking additional steps to modify structure and pier location to leave the river alone as best they can. Previous design provided pier locations. AECOM will send the details to USFWS.
- USFWS (Jennifer) asked if a sediment load analysis will be included in the DEIS since MDE and others will be interested. Answer: FRA said they advocate for this to be included in the DEIS.
- USFWS (Sandy) asked if the laydown area can serve as the TMF and laydown area. Answer: AECOM stated that this does not fit because of the length requirement. BWRR confirmed AECOM's statement is correct.
- USFWS (Jennifer) asked if there are options within the existing design. Answer: AECOM There is little flexibility given the operational requirements.
- Susan (AECOM) asked USFWS if they have concerns or comments given the LOD.
  - Answer: USFWS asked to speak internally to the team and discuss at the next meeting.
  - They noted the area along the river floodplain crossing contains very high-quality habitat and is well established with soil, T&E or at least rare species (Kentucky Warbler, etc).
  - They are concerned about losing capacity of the buffer and cited "death by 1000 cuts." Sandy noted they have surveys they can share with the NEPA Team.
  - Another area of concern is the NW near the BGE ROW. Sandy noted the soils are very different and the vegetative community is like that of NJ and MD years ago. They have been trying to restore this area for years. USFWS also uses the BGE area for Scrub Species Management.
  - They are concerned with land along the forest areas and noted active community of forest bats so they are concerned with speed and air force of the train on the bird and bat populations.
  - USFWS noted concerns with potential noise, speed, and suction impacts to multiple species including birds, bats and pollinators.
  - FRA noted that all of this information will be within the DEIS.
- USFWS (Chris) asked if the train moves at 300 mph. Answer: AECOM noted the top speed is 310mph. Chris noted that the speed of sound was over 700 mph and a sonic boom was not a concern.
- USFWS said the Refuge is managing for pollinator species and this is a high priority.
- USFWS (Jennifer) noted historical resources on the USFWS property, specifically the cemeteries. She also noted UXO's in the area. AECOM said that Brad was very helpful in avoiding UXO areas and sharing historical information.

- USFWS (Jennifer) recently saw a study for a solar panel array in the area south of USFWS property on BARC property. It was the first time seeing solar panels to power SCMaglev. AECOM noted that the solar panels are a BARC initiative and has nothing to do with BWRR. BWRR said there is a possibility of colocation.
- USFWS (Tarik) has concerns with the area near Wild Turkey Way and the trails. He noted that hunters and fisherman use this location, especially now with COVID restrictions. It was also noted that the field has controlled burns and USFWS questions if the smoke density will impact SCMaglev operations.
- USFWS (Jennifer) noted visitation is up 200 percent now, especially the North Track. FRA encouraged USFWS to be thinking about mitigation asks now. USFWS noted the refuge as a whole has seen an increase in usage during the COVID-19 pandemic.
- USFWS noted that in the North Track area, the refuge complete prescribed control burns that may impact the LOD. Potential fire and smoke impacts on the system.
- USFWS (Jennifer) asked if there are any historic cemeteries present. AECOM noted that they are aware of several on the property.
- USFWS (Ray) asked about alignments J and J-1 potential impacts. FRA said we are still in the data collection phase and anticipate a DEIS to agencies end of the year.
- USFWS (Jennifer) noted there is a need for project flyers to be shared along the corridor, especially the Laurel and Bowie communities.

#### **Follow-up**

- NEPA Team to send access request information to USFWS
- Follow-up meeting after IRM



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Patuxent Research Refuge  
12100 Beech Forest Road  
Laurel, MD 20708-4036

August 5, 2020

## NATURAL OR BIOLOGICAL RESOURCES OF CONCERN ON/NEAR PATUXENT RESEARCH REFUGE LIKELY TO BE IMPACTED BY SC-MAGLEV CONSTRUCTION, OPERATION, AND MAINTENANCE

### HABITAT IMPACTS

**Wetlands:** On Patuxent Research Refuge property southeast of the project's proposed crossing of the Patuxent River, there is an extensive Non-tidal Wetland of Special State Concern (NTWSSC) that provides habitat for numerous aquatic species, as well as a colony site of Great Blue Herons (Byrne 2018). In addition, non-delineated wetlands on and adjacent to the refuge will be impacted by impervious surfaces associated with the proposed 175-acre Train Maintenance Facility (TMF), resulting in habitat fragmentation, altered hydrology, and increased nutrient/sediment input to the Patuxent River.

**Interior forest:** Patuxent Research Refuge contains high quality interior forest, substantial quantities of large mature site trees (>30 dbh), and sensitive terrestrial or aquatic communities associated with the forest such as vernal pools, sphagnum bogs, and heath communities. Literature suggests a minimum 300' forest buffer is necessary to protect the quality of interior acreage and forest dependent species from edge effects (MD DNR 1999, Marzluff et al. 2000, Klapproth and Johnson 2009). As stated in our letter dated March 26, 2019, the Service seeks maximum protection of mature hardwoods in the riparian, upland and floodplain forest interior by maintaining a 300-meter buffer zone from disturbance edges.

**Wind and light impacts on, or collision with, light-bodied aerial species:** pollinating insects (bees, butterflies, moths), dragonflies, birds and bats that cross Baltimore-Washington Parkway along the Patuxent River corridor or use forested habitat on either side of proposed route alternatives J and J1 will be impacted not only during train operating hours, but also by the 175-acre Train Maintenance Facility, proposed to operate 24 hours/day, seven days/week. This is especially of concern for sections along the Baltimore Gas and Electric transmission line right-of-way, which is actively managed as early successional habitat to attract and benefit pollinating insects and scrub-shrub bird communities.

**River/stream water quality:** Patuxent River and Little Patuxent River and associated streams, marshes, water quality during and post-construction from sediment load inputs or loss of forest vegetation (see July 31, 2018 memorandum from Maryland DNR regarding 100' undisturbed upland buffers for NTWSSCs to Angela Jones, SC-Maglev Project Manager for MDOT). Note that FWS raised concerns about sediment loads into the river during our individual agency briefing on June 11, 2020.

**Wild Turkey Way/Blue Heron Pond:** Trails and meadows in this area close to the BW Parkway are heavily used by hunters, anglers and birders (i.e. “human habitats”); wind, noise, light and vibration will impact deer, turkey and other species that are important to public recreational purposes of the refuge.

## SPECIES IMPACTS

In absence of biological surveys related to this proposal and in absence of well-defined boundaries of the proposed J and J1 alternatives’ limit of disturbance (LOD) or construction footprint, we therefore must assume broad impacts during- and post- construction from loss of habitat, railway operations, noise/wind/light pollution, hydrology, or changes in vegetation, to species and their habitats on or adjacent to the Patuxent Research Refuge segment of the proposed transportation project. The following species and their habitats are of concern to the Refuge (see Table 1 for key to state conservation codes):

| <u>Scientific Name</u>                     | <u>Common Name</u>          | <u>(Federal) or State<br/>Conservation Status</u> |
|--|-----------------------------|---|
| <b>Turtles and Amphibians</b>              |                             |   |
| <i>Clemmys guttata</i>                     | Spotted turtle              | C, (At-Risk, petitioned for listing)              |
| <i>Terepene carolina carolina</i>          | Eastern box turtle          | C   |
| <i>Lithobates sylvatica</i>                | Wood frog                   |   |
| <i>Scaphiopus holbrookii</i>               | Eastern spadefoot           |   |
| <i>Abystoma maculatum</i>                  | Spotted salamander          |   |
| <i>Abystoma opacum</i>                     | Marbled salamander          |   |
| <b>Mammals</b>                             |                             |   |
| <i>Neovison vison</i>                      | American mink               | C   |
| <i>Myotis septentrionalis</i>              | Northern long-eared bat     | A, (Threatened)                                   |
| <i>Eptesicus fuscus</i>                    | Big Brown Bat               | C   |
| <i>Lasiurus borealis</i>                   | Eastern Red Bat             | E   |
| <i>Nycticeius humeralis</i>                | Evening Bat                 | D   |
| <i>Lasiurus cinereus</i>                   | Hoary Bat                   | D   |
| <i>Lasionicterus noctivagans</i>           | Silver-haired Bat           | D   |
| <i>Perimyotis subflavus</i>                | Tri-colored Bat             | A   |
| <i>Glaucomys sabrinus fuscus</i>           | Va Northern Flying Squirrel | D   |
| <b>Forest Interior and Shrubland Birds</b> |                             |   |
| <i>Hylocichla mustelina</i>                | Wood thrush                 | C   |
| <i>Geothlypis formosa</i>                  | Kentucky warbler            | C   |
| <i>Protonotaria citrea</i>                 | Prothonotary warbler        | C   |
| <i>Helmitheros vermivorum</i>              | Worm-eating warbler         | C   |
| <i>Seiurus aurocapilla</i>                 | Ovenbird                    | C   |
| <i>Setophaga discolor</i>                  | Prairie Warbler             | C   |
| <i>Icteria virens</i>                      | Yellow-breasted chat        | C   |
| <i>Toxostoma rufum</i>                     | Brown thrasher              |   |
| <i>Caprimulgus vociferous</i>              | Whip-poor will              | C   |
| <i>Piranga olivacea</i>                    | Scarlet tanager             | C   |
| <b>Dragonflies/Damselflies</b>             |                             |   |
| <i>Stylurus laurae</i>                     | Laura’s Clubtail            | B   |
| <i>Libellula flavida</i>                   | Yellow-sided Skimmer        | B   |

|                                 |                     |                         |
|---------------------------------|---------------------|-------------------------|
| <i>Helocordulia selysii</i>     | Selys' Sundragon    | B, Threatened           |
| <i>Nannothemis bella</i>        | Elfin Skimmer       | A, Endangered           |
| <i>Somatochloa provocans</i>    | Treetop Emerald     | A, Endangered           |
| <i>Epitheca costalis</i>        | Slender Baskettail  | A                       |
| <i>Celithemis martha</i>        | Martha's Pennant    | A                       |
| <i>Gomphaeschna antilope</i>    | Taper-tailed Darner | B                       |
| <i>Nehalennia gracilis</i>      | Sphagnum Sprite     | B                       |
| <i>Nehalennia integricollis</i> | Southern Sprite     | A                       |
| <i>Gomphus rogersi</i>          | Sable Clubtail      | In Need of Conservation |

### Butterflies/Skippers/Moths

|                                   |                              |                                   |
|-----------------------------------|------------------------------|-----------------------------------|
| <i>Callophrys augustinus</i>      | Brown Elfin Butterfly*       |                                   |
| <i>Danaus plexippus</i>           | Monarch Butterfly            | (At-risk; petitioned for listing) |
| <i>Pyrgus wyandot</i>             | Appalachian Grizzled Skipper | (At-risk)                         |
| <i>Papaipema araliae</i>          | Aralia Shoot Borer Moth      | (At-risk)                         |
| <i>Pyrrhia aurantiago</i>         | Aureolaria Seed Borer        | (At-risk)                         |
| <i>Zale lunifera</i>              | Bold-Based Zale Moth         | (At-risk)                         |
| <i>Poanes Massasoit chermocki</i> | Chermock's Mulberrywing      | (At-risk)                         |
| <i>Erora laeta</i>                | Early Hairstreak             | (At-risk)                         |
| <i>Callophrys polios</i>          | Hoary Elfin                  | (At-risk)                         |
| <i>Satyrium kingi</i>             | King's Hairstreak            | (At-risk)                         |
| <i>Erynnis martialis</i>          | Mottled Duskywing            | (At-risk)                         |
| <i>Calephelis borealis</i>        | Northern Metalmark           | (At-risk)                         |
| <i>Psectraglaea carnosa</i>       | Pink Sallow Moth             | (At-risk)                         |
| <i>Catocala pretiosa pretiosa</i> | Precious Underwing           | (At-risk)                         |
| <i>Problema bulenta</i>           | Rare Skipper                 | (At-risk)                         |
| <i>Speyeria idalia</i>            | Regal Fritillary Butterfly   | (At-risk)                         |
| <i>Hemipachnobia subporphyrea</i> | Venus Flytrap Cutworm        | (At-risk)                         |
| <i>West Virginia White</i>        | West Virginia White          | (At-risk)                         |

\*large population found in blueberry-oak forest northwest corner of refuge

### Fish and Mussels

|                             |                        |                            |
|-----------------------------|------------------------|----------------------------|
| <i>Lethenteron appendix</i> | American Brook Lamprey | A, Threatened              |
| <i>Etheostoma vitreum</i>   | Glassy Darter          | A, Threatened              |
| <i>Ameiurus catus</i>       | White Catfish          | D                          |
| <i>Elliptio producta</i>    | Atlantic Spike         | A, In Need of Conservation |
| <i>Elliptio lanceolata</i>  | Yellow lance           | D, (Threatened)            |

### Plants (non-tree)

|                           |                      |            |
|---------------------------|----------------------|------------|
| <i>Gratiola viscidula</i> | Short's Hedge-hyssop | Endangered |
|---------------------------|----------------------|------------|

Table 1: Definitions of the five conservation status categories (MD DNR 2015)

| CATEGORY | DEFINITION  |
|----------|---|
| A        | Highest conservation status   |
| B        | High conservation status  |
| C        | Moderate conservation status  |
| D        | Conservation status is uncertain; insufficient data to assign a state conservation status rank  |
| E        | Historical status; ranked as "SH" and may no longer occur in Maryland, but with some potential for rediscovery in the foreseeable future. |

At-Risk Species: Derived from a list of 298 species of fish, wildlife, and plants in 2019 that are undergoing broad review by Northeast state fish and wildlife agencies and U.S. Fish and Wildlife Service (Service) programs across the North Atlantic-Appalachian Region.

## **ADDITIONAL INFORMATION NEEDS**

If impacts to the above habitats and species from either alternative cannot be avoided or minimized, MDOT requested that the Service provide any initial thoughts on potential mitigation sites. The Service cannot entertain mitigation for the loss of habitat until a comprehensive review of detailed plans has been made. At this point in the process, the information provided requires the Service to assume the broadest impact to the land and species of concern. It is simply not possible to make decisions without more detailed information including, but not limited to, the following:

- Cross Sections
- Drainage Plans
- Grading Plans
- Construction Plans
- Tree Plan (location, diameter and species)
- Access Needs (for construction and maintenance)
- Fence locations
- Tunnel surface location
- BG & E impacts
- LOD (temporary and perpetual)
- UXO
- Cemeteries and other cultural/historical features (FWS noted during NHPA Section 106 meeting on 7/20/2020 that current ARPA permit expired November 30, 2019; if Snowden Cemetery is to be impacted, it must first be evaluated for eligibility to the National Historic Register) Proposed Construction Calendar (including time of year)
- Fee vs. Easement (temporary and perpetual)

## **Citations:**

Byrne, L. 2018, July 31. MD DNR Wildlife Heritage Service Memorandum to Angela Jones, Project Manager SC MAGLEV for MDOT.

Klapproth, JD and Johnson, JE. 2009. Understanding the Science Behind Riparian Forest Buffers: Effects on Plants and Animal Communities. Virginia Cooperative Extension, Virginia Technical University, Blacksburg, Va.

Marzluff, JM, Raphael, MG, and Sallabanks, R. 2000. Understanding the Effects of Forest Management on Avian Species. Wildlife Society Bulletin. Vol. 28, No. 4, 1132-1143.

MD DNR (Maryland Department of Natural Resources). 1999. FIDS/Forestry Task Force, Chesapeake Bay Critical Area Timber Harvest Guidelines.

MD DNR (Maryland Department of Natural Resources). 2015. Maryland State Wildlife Action Plan

National Aeronautics and Space Administration

**Goddard Space Flight Center**  
Greenbelt, MD 20771



August 25, 2020

Reply to Attn of: 610

Mr. Paul Nissenbaum  
Associate Administrator  
Office of Railroad Policy & Development  
Federal Railroad Administration  
1200 New Jersey Avenue, SE  
Washington, DC 20590

Dear Mr. Nissenbaum:

The intent of this letter is to raise awareness of concerns that the National Aeronautics and Space Administration (NASA) has regarding a proposed alternative location of a Trainset Maintenance Facility (TMF) that will service the proposed Superconducting Magnetic Levitation (SCMAGLEV) train currently undergoing environmental review. This proposed alternative TMF location is on the United States Department of Agriculture's (USDA) Beltsville Agricultural Research Center (BARC) property at the airstrip site.

One of NASA Goddard Space Flight Center's (GSFC) facilities, the Goddard Geophysical and Astronomical Observatory (GGAO), is located on BARC property on Springfield road that is adjacent and overlaps with this proposed alternative location for the TMF facility. NASA GSFC leases this property from BARC under a long-term lease. NASA GSFC has serious concerns with this proposed alternative TMF location given its proximity to the GGAO facility.

GGAO supports a number of NASA activities that require minimal disturbances from vibration, artificial lighting, and electromagnetic interference. The remote location of the site was chosen to protect NASA's systems from disturbances and human activities. The stability of the site and the quality of the observations are essential to support a wide variety of NASA missions.

The site is one of the few places in the world to have all four space geodesy techniques (Satellite Laser Ranging, Very Long Baseline Interferometry, Global Navigational Satellite System, and Doppler Orbitography and Radio-positioning Integrated by Satellite) co-located at a single location. These systems are used to track satellites, measure the Earth's rotation and orientation in space, measure the motion of the Earth's surface, and establish a global

reference point that is used to accurately determine the orbits of satellites and geolocate their Earth observations. The site is also a critical tie between the International Terrestrial Reference Frame and national/regional datums established by National Oceanic and Atmospheric Administration's National Geodetic Survey and used for innumerable cadastral purposes. The over 50-year history of the site is particularly important in establishing this stable reference that is used to tie together historical and new data sets. The site also hosts several optical telescopes, an X-Ray beamline, neutron spectroscopy experiments, and several other experimental facilities. A laser communication system is also being installed at the site to communicate with satellites using lasers.

The very close proximity of a SCMAGLEV TMF to the GGAO facility has the potential to severely affect the operations of these systems and jeopardize the quality of the measurements that all satellite missions rely on. These adverse effects would also extend to other applications, national and international interests, and United States agencies that utilize the geodetic data.

Specific impacts to these systems include:

The long-term geodetic measurements made at GGAO require a stable environment. Vibration from a TMF would render the data from this site difficult, if not impossible to use, disrupting the essential contribution made national and global reference frame used for all civil and scientific applications.

Artificial lighting from a TMF would negatively impact the optical systems at GGAO. Many of these operations can only be performed at night and any nearby artificial lighting would severely limit or eliminate these capabilities.

RF Interference from Wi-Fi and any other transmitting device (in the 2-14GHz range) would interfere with highly sensitive operations and in some situations may damage the equipment.

Significant EMF could negatively impact the sensitive equipment used for many of the systems at GGAO.

Traffic/Roads: Rerouted roads could negatively impact nearly all the systems operating at GGAO due to increased light pollution and vibration from changes in the traffic patterns.

Previously, Goddard provided comments to the SCMAGLEV Project via the EIS process concerning the proposed TMF locations and the negative impacts on NASA operations, particularly the potentially devastating scientific impacts on the GGAO. Prior to the pause in the EIS process, the SCMAGLEV Project had eliminated the TMF location near GGAO as an alternative in the EIS. However, following re-start, a proposed TMF site near GGAO has

been reintroduced as an alternative. The other proposed alternative locations do not raise the same concerns for NASA as does the airstrip site.

NASA has been fully engaged in the Federal Railroad Administration's National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) process for the proposed SCMAGLEV Project between Baltimore and Washington, DC. This includes acting as a cooperating agency and providing input into the EIS development. NASA will continue to provide input into the SCMAGLEV NEPA process which will include commenting on the draft EIS when it becomes available for review.

Thank you for your consideration of NASA's concerns regarding this alternative site's adverse impacts on the collection and utilization of geodetic data and the inability for effective GGAO operations to co-exist with a TMF nearby. The GGAO site location has scientific importance both nationally and internationally, with more than 50 years use as a reference point. Should you have any questions or need additional information that might assist the FRA in making any decisions regarding the location of the TMF at issue, please feel free to reach out to me directly.

Sincerely,

**DENNIS ANDRUCYK** Digitally signed by DENNIS  
ANDRUCYK  
Date: 2020.08.25 13:48:23 -04'00'

Dennis J. Andrucyk  
Center Director

cc:

HQ OIIR/Mr. Kevin Conole  
HQ OIIR/Ms. Jennifer Troxell  
USDA/Ms. Rebeckah Adcock  
USDA/Dr. Chavonda Jacobs-Yung  
USDA/Mr. Gary Mayo  
USDA/Ms. MaryDee Beal  
USDA BARC/Dr. Dariusz Swietlik  
USDA BARC/Dr. Howard Zhang  
USDA BARC/Dr. LeAnn Blomberg  
DOT FRA/Ms. Marlys Osterhues  
DOT FRA/Mr. Brandon Bratcher

National Aeronautics and Space Administration

**Goddard Space Flight Center**  
Greenbelt, MD 20771



August 25, 2020

Reply to Attn of: 610

Dr. Chavonda Jacobs-Young  
Administrator, Agriculture Research Center  
George Washington Carver Center  
5601 Sunnyside Avenue, Room 4-2160  
Beltsville, MD 20705

Dear Dr. Jacobs-Young:

The intent of this letter is to raise awareness of concerns that the National Aeronautics and Space Administration (NASA) has regarding a proposed alternative location of a Trainset Maintenance Facility (TMF) that will service the proposed Superconducting Magnetic Levitation (SCMAGLEV) train currently undergoing environmental review. This proposed alternative TMF location is on the United States Department of Agriculture's (USDA) Beltsville Agricultural Research Center (BARC) property at the airstrip site.

As you may well be aware, the Department of Transportation Federal Railroad Administration is preparing an Environmental Impact Statement (EIS) for the proposed SCMAGLEV Project between Baltimore and Washington, DC. The EIS will evaluate the environmental impacts of constructing and operating a high-speed train along this route. The proposed project's alternative route alignments would cross NASA Goddard Space Flight Center (Goddard) property and the USDA BARC property. The SCMAGLEV Project is also considering multiple alternative locations for a TMF, one of which is located at the BARC airstrip site. Both NASA and the USDA are cooperating agencies in the National Environmental Policy Act (NEPA) EIS process, with the Federal Railroad Administration as the lead agency.

One of Goddard's facilities, the Goddard Geophysical and Astronomical Observatory (GGAO), is located on BARC property on Springfield road that is adjacent and overlaps with this proposed alternative location for the TMF facility. NASA Goddard leases this property from BARC under a long-term lease. NASA Goddard has serious concerns with the proposed alternative TMF location at the BARC airstrip given its proximity to the GGAO facility.

GGAO supports a number of NASA activities that require minimal disturbances from vibration, artificial lighting, and electromagnetic interference. The remote location of the site was chosen to protect NASA's systems from disturbances and human activities. The stability of the site and the quality of the observations are essential to support a wide variety of NASA missions.

The site is one of the few places in the world to have all four space geodesy techniques (Satellite

Laser Ranging, Very Long Baseline Interferometry, Global Navigational Satellite System, and Doppler Orbitography and Radio-positioning Integrated by Satellite) co-located at a single location. These systems are used to track satellites, measure the Earth's rotation and orientation in space, measure the motion of the Earth's surface, and establish a global reference point that is used to accurately determine the orbits of satellites and geolocate their Earth observations. The site is also a critical tie between the International Terrestrial Reference Frame and national/regional datums established by National Oceanic and Atmospheric Administration's National Geodetic Survey and used for innumerable cadastral purposes. The over 50-year history of the site is particularly important in establishing this stable reference that is used to tie together historical and new data sets. The site also hosts several optical telescopes, an X-Ray beamline, neutron spectroscopy experiments, and several other experimental facilities. A laser communication system is also being installed at the site to communicate with satellites using lasers.

The very close proximity of a SCMAGLEV TMF to the GGAO facility has the potential to severely affect the operations of these systems and jeopardize the quality of the measurements that all satellite missions rely on. These adverse effects would also extend to other applications, national and international interests, and United States agencies that utilize the geodetic data.

Specific impacts to these systems include:

Artificial lighting from a TMF would negatively impact the optical systems at GGAO. Many of these operations can only be performed at night and any nearby artificial lighting would severely limit or eliminate these capabilities.

RF Interference from Wi-Fi and any other transmitting device (in the 2-14GHz range) would interfere with highly sensitive operations and in some situations may damage the equipment.

Significant EMF could negatively impact the sensitive equipment used for many of the systems at GGAO.

Traffic/Roads: Rerouted roads could negatively impact nearly all the systems operating at GGAO due to increased light pollution and vibration from changes in the traffic patterns.

Previously Goddard and BARC provided comments to the SCMAGLEV Project via the EIS process concerning the proposed TMF locations and the negative impacts on BARC and NASA operations, particularly the potentially devastating scientific impacts on the GGAO. Prior to the pause in the EIS process, the SCMAGLEV Project had eliminated the TMF location near GGAO as an alternative in the EIS. However, following re-start, a proposed TMF site near GGAO has been reintroduced as an alternative. NASA will continue to provide input into the SCMAGLEV NEPA process, including to the draft EIS when it becomes available for review. NASA will continue to emphasize the scientific importance of GGAO and its inability to effectively operate in such close proximity to a TMF nearby.

Thank you for your consideration of NASA's concerns regarding this alternative site's adverse impacts on the collection and utilization of geodetic data. The GGAO site location has scientific importance both nationally and internationally, with more than 50 years use as a reference point. As adjoining Federal landowners, NASA Goddard and USDA BARC have a shared interest in ensuring our

missions and scientific work can continue to co-exist with other essential community needs, including transportation. Should you have any questions or need additional information that might assist the USDA in making any decisions regarding the future of BARC property at issue, please feel free to reach out to me directly.

Sincerely,

**DENNIS ANDRUCYK** Digitally signed by DENNIS  
ANDRUCYK  
Date: 2020.08.25 13:49:27 -04'00'

Dennis J. Andrucyk  
Center Director

cc:

HQ OIIR/Mr. Kevin Conole  
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USDA/Ms. Rebeckah Adcock  
USDA/Mr. Gary Mayo  
USDA/Ms. MaryDee Beal  
USDA BARC/Dr. Dariusz Swietlik  
USDA BARC/Dr. Howard Zhang  
USDA BARC/Dr. LeAnn Blomberg  
DOT FRA/Mr. Paul Nissenbaum  
DOT FRA/Ms. Marlys Osterhues  
DOT FRA/Mr. Brandon Bratcher

U.S. Department of  
Homeland Security

United States  
Coast Guard



Commander  
United States Coast Guard  
Fifth Coast Guard District

431 Crawford Street  
Portsmouth, VA. 23704-5004  
Staff Symbol: dpb  
Phone: (757) 398-6222  
Fax: (757) 398-6334  
Email: [Hal.R.Pitts@uscg.mil](mailto:Hal.R.Pitts@uscg.mil)

16591  
06 OCT 2020

Ms. Jacqueline Thorne, Project Manager Priority Projects  
The Secretary's Office  
Office of Freight and Multimodalism  
Maryland Department of Transportation  
7201 Corporate Center Drive  
Hanover, MD 21076

Dear Ms. Thorne:

Coast Guard review of your proposed project as provided in your email dated September 29, 2020, and a letter dated November 16, 2016, from the Federal Highway Administration, received via email dated September 25, 2020, from Mr. David Valenstein with the Federal Railroad Administration, is complete.

Based on the documentation provided and our research, it is determined that Coast Guard bridge permits will not be required for the proposed railroad (viaduct) fixed bridges associated with the Baltimore-Washington Superconducting Magnetic Levitation Project between Washington, DC, and Baltimore, MD. The proposed railroad (viaduct) fixed bridges include – Little Patuxent River at 39.106099, -76.787311; Patuxent River at 39.069027, -76.831496; Beaverdam Creek at 39.021348, -76.857788; and Beck Branch (tributary to Beaverdam Creek) at 39.019212, -76.858653.

The project will be placed in our Coast Guard Authorization Act of 1982 exemption category for the location and structures described above and **is valid for five years from the date of this letter**. The Coast Guard Authorization Act of 1982 exempts bridge projects from Coast Guard Bridge permits when the bridge project crosses non-tidal waters which are not used, susceptible to use in their natural condition, or susceptible to use by reasonable improvement as a means to transport interstate commerce. The following conditions apply to this determination:

- a. If the construction project on the above bridges does not commence within this time, you must contact this office for reaffirmation of this determination.
- b. Future bridge projects along the above waterway will have to be independently evaluated before they may be considered for placement in the Coast Guard Authorization Act of 1982 exemption category. This includes modification, replacement and removal of the above bridges, following its initial construction.

In addition, the requirement to display navigational lighting at the aforementioned bridges is hereby waived as per Title 33 Code of Federal Regulations, Part 118.40(b). This waiver may be rescinded at any time in the future should nighttime navigation through the proposed bridges be increased to a level determined by the District Commander to warrant lighting.

16591  
06 OCT 2020

The fact that Coast Guard bridge permits are not required does not relieve you of the responsibility for compliance with the requirements of any other Federal, State, or local agency who may have jurisdiction over any aspect of the project.

If you have any further questions, please contact Mr. Hal R. Pitts at the above listed address or telephone number.

Sincerely,



HAL R. PITTS  
Bridge Program Manager  
By direction

Copy: CG Sector Maryland-National Capital Region, Waterways Management  
U. S. Army Corps of Engineers, Baltimore District  
Federal Highways Administration, Washington, DC  
Federal Highway Administration, Baltimore, MD



Larry Hogan, Governor  
Boyd Rutherford, Lt. Governor  
Jeannie Haddaway-Riccio, Secretary  
Charles Glass, Deputy Secretary

October 22, 2020

MEMO

**To:** Gwen Gibson – DNR IPR  
Brandon Bratcher, Federal Railroad Administration  
Kelly Lyles, MD Department of Transportation  
Joanna Heibler, AECOM  
**Cc:** Katharine McCarthy, Lynn Davidson, DNR WHS  
**From:** Lori Byrne, DNR WHS

**RE:** Updated Environmental Review for SCMAGLEV: Baltimore City/County and Anne Arundel, Prince George's Counties, Maryland

These comments are based on the July 2020 Updated Alternatives Mapping as shown on the project's website [bwmaglev.info/index.php/project-documents/maps](http://bwmaglev.info/index.php/project-documents/maps). The Wildlife and Heritage Service (WHS) has records of the following rare, threatened and endangered (RT&E) species and other resources of concern at these locations:

For the **Camden Yards** work area as shown in **Alternatives J-04, J-05, J-06, J1-04, J1-05 and J1-06**, there is a record for an American Peregrine Falcon (*Peregrinus falco anatum*) nest site on the Transamerica Tower in Baltimore City. This species has In Need of Conservation status in Maryland, and is generally afforded protection within a ¼-mile radius of the nest site during the breeding season for this species, which is considered to be March 1 through June 30 of any given year. Although the proposed work is within the standard protection distance of the nest location, we do not anticipate any impacts to this species given our current understanding of the project at this time.

**All of the proposed alternatives** show a deep tunnel in the **Harmans area** near the intersection of MD 713 and Severn Road, where there are nontidal wetlands associated with Stony Creek that support Swamp Pink (*Helonias bullata*), a Globally Rare plant that is state-listed as Endangered and federally listed as Threatened. This perennial wildflower grows in perennially saturated nontidal wetland habitat, including forested wet depressions, spring seeps, bogs, wet meadows and margins of small streams, but has very specific hydrological requirements. Activities that may alter the hydrology of these wetlands such as excavation or construction of impervious surfaces could result in negative impacts to the occurrences of Swamp Pink in this area. Swamp Pink is also highly vulnerable to sedimentation and nutrient runoff.

Where there is an access road proposed over **Dorsey Run (shown on all the proposed alternatives)**, it is important to note that the road is located in the headwaters of the Little Patuxent River. For much of its length, the Little Patuxent River is relatively shallow with a sandy, gravelly bed. Several areas have faster moving sections which produce shallow riffles. Within this river, the state-listed Threatened fish - Glassy Darter (*Etheostoma vitreum*) and American Brook Lamprey (*Lethenteron appendix*) - are found in the sandy, gravelly river bottom and spawn in the riffles.

The Patuxent River is a stronghold watershed for the Glassy Darter due to the frequency of its occurrence and the abundance of fish documented in the area. Adult glassy darters spend much of their lives buried under the sand. Similarly, American brook lampreys use the gravel to build nests, and the hatched larvae (ammocetes) spend 2-3 years buried in sandy burrows. Maintenance of hydrology and maintaining or improving water quality are necessary to help ensure the continued existence of these important aquatic species. Maintaining a stable stream temperature regime and relatively cool stream temperatures are also important. In addition to the potential for sedimentation from construction activity, increased water temperature from surface runoff degrades the aquatic habitat. The water quality and hydrology of the aquatic habitat that sustains these species is maintained by the extensive forest that borders the river.

Where the **J1-01 through J1-06 Alternatives** propose a deep tunnel under the Little Patuxent River between **MD 32 and MD 198**, it appears that direct impacts to RT&E species are avoided here. Hydrological impacts from the tunneling are still of potential concern, however. The proposed tunneling under the Little Patuxent River should incorporate stringent best management practices for sediment and erosion control in order to reduce the likelihood of adverse impacts to the rare species found in the Little Patuxent.

The **J-01 through J-06 Alternatives** that propose a viaduct over this crossing of the Little Patuxent River have potential to directly impact the RT&E resources associated with this segment of the river. There are concerns for impacts to the Glassy Darter and American Brook Lamprey in this area (see comments above for further details on these species). This portion of the project is upstream of numerous records of RT&E dragonfly species, which are considered highly sensitive to changes in hydrology and water quality, especially during their aquatic larval stages. Adults of the state-listed Endangered Appalachian Snaketail (*Ophiogomphus incurvatus incurvatus*) feed at riffles in the river. The larvae of the state Rare dragonfly, Laura’s Clubtail (*Stylurus laurae*), live in the small headwaters streams and migrate downstream to the Little Patuxent River as they mature. Adults of Laura’s Clubtail and Sable Clubtail (*Gomphus rogersii*) – a species with In Need of Conservation status in Maryland - perch along the river shoreline between forays to feed. Additional RT&E dragonfly species in this area of the Little Patuxent include:

| <u>Scientific Name</u>          | <u>Common Name</u>    | <u>State Status</u> |
|---------------------------------|-----------------------|---------------------|
| <i>Celithemis martha</i>        | Martha’s Pennant      | Highly Rare         |
| <i>Celithemis ornata</i>        | Faded Pennant         | Historical          |
| <i>Epitheca costalis</i>        | Slender Baskettail    | Highly Rare         |
| <i>Erythrodiplax minuscula</i>  | Little Blue Dragonlet | Highly Rare         |
| <i>Gomphaeschna antilope</i>    | Taper-tailed Darner   | Rare                |
| <i>Helocordulia selysii</i>     | Selys’ Sundragon      | Threatened          |
| <i>Libellula flavida</i>        | Yellow-sided Skimmer  | Rare                |
| <i>Nannothemis bella</i>        | Elfin Skimmer         | Endangered          |
| <i>Nehalennia gracilis</i>      | Sphagnum Sprite       | Rare                |
| <i>Nehalennia integricollis</i> | Southern Sprite       | Highly Rare         |
| <i>Rhionaeschna mutata</i>      | Spring Blue Darner    | Endangered          |
| <i>Somatochloa provocans</i>    | Treetop Emerald       | Endangered          |

For the **Alternatives J-01, J-04, J1-01, and J1-04** that propose a **Train Maintenance Facility (TMF) off of MD 198**, the limit-of-disturbance appears to have direct impacts to a portion of the Little Patuxent River which supports the Selys' Sundragon, Glassy Darter, American Brook Lamprey, and the White Catfish (*Ameiurus catus*), a species with Uncertain state status, but thought to be possibly rare in Maryland. It also supports these rare odonate species:

| <u>Scientific Name</u>                    | <u>Common Name</u>    | <u>State Status</u>     |
|---|-----------------------|-------------------------|
| <i>Celithemis martha</i>                  | Martha's Pennant      | Highly Rare             |
| <i>Celithemis ornata</i>                  | Faded Pennant         | Historical              |
| <i>Epiptera costalis</i>                  | Slender Baskettail    | Highly Rare             |
| <i>Erythrodiplax minuscula</i>            | Little Blue Dragonlet | Highly Rare             |
| <i>Gomphaeschna antilope</i>              | Taper-tailed Darner   | Rare                    |
| <i>Gomphus rogersi</i>                    | Sable Clubtail        | In Need of Conservation |
| <i>Helocordulia selysii</i>               | Selys' Sundragon      | Threatened              |
| <i>Libellula flavida</i>                  | Yellow-sided Skimmer  | Rare                    |
| <i>Nannothemis bella</i>                  | Elfin Skimmer         | Endangered              |
| <i>Nehalennia gracilis</i>                | Sphagnum Sprite       | Rare                    |
| <i>Nehalennia integricollis</i>           | Southern Sprite       | Highly Rare             |
| <i>Ophiogomphus incurvatus incurvatus</i> | Appalachian Snaketail | Endangered              |
| <i>Rhionaeschna mutata</i>                | Spring Blue Darner    | Endangered              |
| <i>Somatochlora provocans</i>             | Treetop Emerald       | Endangered              |
| <i>Stylurus laurae</i>                    | Laura's Clubtail      | Rare                    |

The limits-of-disturbance for this TMF also appears to encompass the location of a Great Blue Heron colony that was documented in the floodplain of the Little Patuxent River. Construction here has the potential to eliminate the breeding habitat at this site, or cause significant disturbance during the breeding season, which is considered to be February 15 through July 31 of any given year. We offer these guidelines which are usually suitable for protection of most Great Blue Heron colonies:

1. Establish a protection area of ¼ mile radius from the colony's outer boundary. Within this area establish three zones of protection: Zone 1 extends from the outer boundary of the colony to a radius of 330 feet, Zone 2 extends from 330 feet to 660 feet in radius, and Zone 3 extends from 660 feet to ¼ mile (1320 feet).
2. During the breeding season all human entry into Zone 1 should be restricted to only that essential for protection of the Great Blue Heron colony. Human disturbance of colony sites that results in significant mortality of eggs and/or chicks is considered a prohibited taking under various state and federal regulations.
3. No land use changes, including development or timber harvesting, should occur in Zone 1.
4. Construction activities, including clearing, grading, building, etc., should not occur within Zones 1 and 2.
5. Selective timber harvesting may occur in Zone 2, but clearcutting should be avoided.
6. No construction or timber harvesting activities should occur within the ¼ mile protection area during the Great Blue Heron breeding season.

For **Alternatives J-01 through J-06**, where the project route's limits-of-disturbance for powerline relocation on **PWRC North Tract (north of Combat Road)** is located within the floodplain to Little Patuxent River, any ground disturbance may affect the RT&E species in the Little Patuxent River.

This work should incorporate stringent best management practices for sediment and erosion control in order to reduce the likelihood of adverse impacts to the rare species found in the Little Patuxent River, as listed above.

For the proposed components of the project over the **Patuxent River at the Anne Arundel/Prince George’s County line**, there are concerns for impacts to the Glassy Darter and American Brook Lamprey, that have been documented both upstream and downstream of the project route. The routes to the south - **Alternatives J-01 through J-06** - appear to directly impact the Wetlands of Special State Concern associated with the Patuxent River, and part of the population of Laura’s Clubtail (*Stylurus laurae*) documented for this portion of the Patuxent River.

The routes to the north -**Alternatives J1-01 through J1-06** - appear to directly impact a rare natural community *Coastal Plain Oak Floodplain Forest (Quercus (phellos, palustris, michauxii) - Liquidambar styraciflua / Cinna arundinacea Forest)*, ranked as Globally Rare. The proposed laydown area/substation at Suburban Airport is within the drainage to the Patuxent River, and we would encourage the stringent adherence to all appropriate best management practices for sediment and erosion control for any activities proposed here.

**TMF between Odell Road and Powdermill Road J-03, J-06, J1-03 and J1-06:** There is a record for an occurrence of White Fringed Orchid (*Platanthera blephariglottis* var. *blephariglottis*, state-listed Threatened) documented in close proximity to this TMF site, which could potentially be impacted by proposed construction. White Fringed Orchid inhabits perennially saturated, groundwater-fed wetlands and is highly vulnerable to changes in hydrology, sedimentation, and nutrient input from runoff. This TMF site is located within the drainage to Beaverdam Creek which is known to support these RT&E species:

| <u>Scientific Name</u>      | <u>Common Name</u>     | <u>State Status</u>     |
|-----------------------------|------------------------|-------------------------|
| <i>Gomphus rogersi</i>      | Sable Clubtail         | In Need of conservation |
| <i>Helocordulia selysi</i>  | Selys’ Sundragon       | Threatened              |
| <i>Lethenteron appendix</i> | American Brook Lamprey | Threatened              |
| <i>Stylurus laurae</i>      | Laura’s Clubtail       | Rare                    |
| <i>Sarracenia purpurea</i>  | Northern Pitcher-plant | Threatened              |

The rare community type, Pine Barrens Pine-Oak Woodland (*Pinus rigida - Quercus coccinea - Quercus falcata / (Quercus marilandica) / Gaylussacia frondosa Woodland*), occurs along the proposed viaduct close to this TMF. This woodland is ranked as Highly Globally Rare and occurs only on the Coastal Plain of New Jersey and Maryland.

**J-02, J-05, J1-02 and J1-05 are the Alternatives that proposed a TMF in the immediate area of the airport on BARC property.** These would have direct impacts to the Wetlands of Special State Concern associated with Beaverdam Creek. This TMF is located within the drainage to another Nontidal Wetland of Special State Concern near Telegraph Road to the east which supports these species:

| <u>Scientific Name</u>          | <u>Common Name</u> | <u>State Status</u> |
|---------------------------------|--------------------|---------------------|
| <i>Celithemis martha</i>        | Martha’s Pennant   | Highly Rare         |
| <i>Nehalennia integricollis</i> | Southern Sprite    | Highly Rare         |
| <i>Rhionaeschna mutata</i>      | Spring Blue Darner | Endangered          |

Parts of Beaverdam Creek intersect with the project route (**all alternatives**) north of the Beltsville area. Beaverdam Creek contains Wetlands of Special State Concern and supports the above-mentioned species documented in close proximity to the project route, as well as a record for White Fringed Orchid (*Platanthera blephariglottis* var. *blephariglottis*) that could be impacted. It is important to note that the project route directly impacts part of the Nontidal Wetland of Special State Concern here (on both the east and west sides of the project route), as well as the following rare natural communities:

- Coastal Plain- Piedmont Acidic Seepage Fen (*Nyssa sylvatica* - (*Pinus rigida*) / *Magnolia virginiana* / *Rhododendron viscosum* - *Gaylussacia frondosa* / *Smilax pseudochina* Woodland) Ranked as Globally Imperiled
- Coastal Plain-Piedmont Acidic Seepage Swamp (*Pinus rigida* - *Nyssa sylvatica* / *Clethra alnifolia* - *Leucothoe racemosa* Forest) Ranked as Globally Critically Imperiled
- Pine Barrens Pine-Oak Woodland (*Pinus rigida* - *Quercus coccinea* - *Quercus falcata* / (*Quercus marilandica*) / *Gaylussacia frondosa* Woodland) Ranked as Globally Imperiled

The Acidic Seepage Fen and Acidic Seepage Swamp communities are groundwater-fed habitats that are vulnerable to changes in hydrology from increased surface runoff to the wetlands or reduced groundwater recharge to the wetlands. Increased nutrient input from surface runoff would also alter the vegetation composition of these low-nutrient systems to the detriment of the rare species they support.

There are additional observations of RT&E species which have been brought to our attention recently, and may be updates of documented occurrences or possibly new occurrences not yet in our database. These species are reported to occur within the **BARC property** within approximately one mile of the proposed project route (**all alternatives**). These species could potentially be impacted by the proposed project routes. They are:

| <u>Scientific Name</u>  | <u>Common Name</u>     | <u>State Status</u> |
|---|------------------------|---------------------|
| <i>Lethenteron appendix</i>                                       | American Brook Lamprey | Threatened          |
| <i>Somatochlora provocans</i>                                     | Treetop Emerald        | Endangered          |
| <i>Betula populifolia</i>   | Gray Birch             | Highly Rare         |
| <i>Cyperus lancastris</i>   | Lancaster's Cyperus    | Rare                |
| <i>Dichanthelium aciculare</i>                                    | Needle-leaf Witchgrass | Rare                |
| <i>Dichanthelium leucothrix</i>                                   | Roughish Witchgrass    | Uncertain           |
| <i>Gaylussacia dumosa</i>   | Dwarf Huckleberry      | Endangered          |
| <i>Krigia dandelion</i>   | Potato Dandelion       | Rare                |
| <i>Linum intercursum</i>  | Sandplain Flax         | Threatened          |
| <i>Lupinus perennis</i>   | Sundial Lupine         | Threatened          |
| <i>Platanthera blephariglottis</i><br>var. <i>blephariglottis</i> | White Fringed Orchid   | Threatened          |
| <i>Platanthera flava</i>  | Pale Green Orchid      | Rare                |
| <i>Rhynchospora microcephala</i>                                  | Small-headed Beakrush  | Rare                |
| <i>Sarracenia purpurea</i>  | Northern Pitcherplant  | Threatened          |
| <i>Smilax pseudochina</i>   | Long-stalk Greenbrier  | Threatened          |

We would also like to bring to your attention that any of the RT&E species mentioned in this memo have the potential to occur in other portions of the proposed alternatives in areas of suitable habitat. It is important to note that these comments reflect our current understanding of the potential impacts to RT&E species from the project alternatives as shown on the July 2020 project mapping.

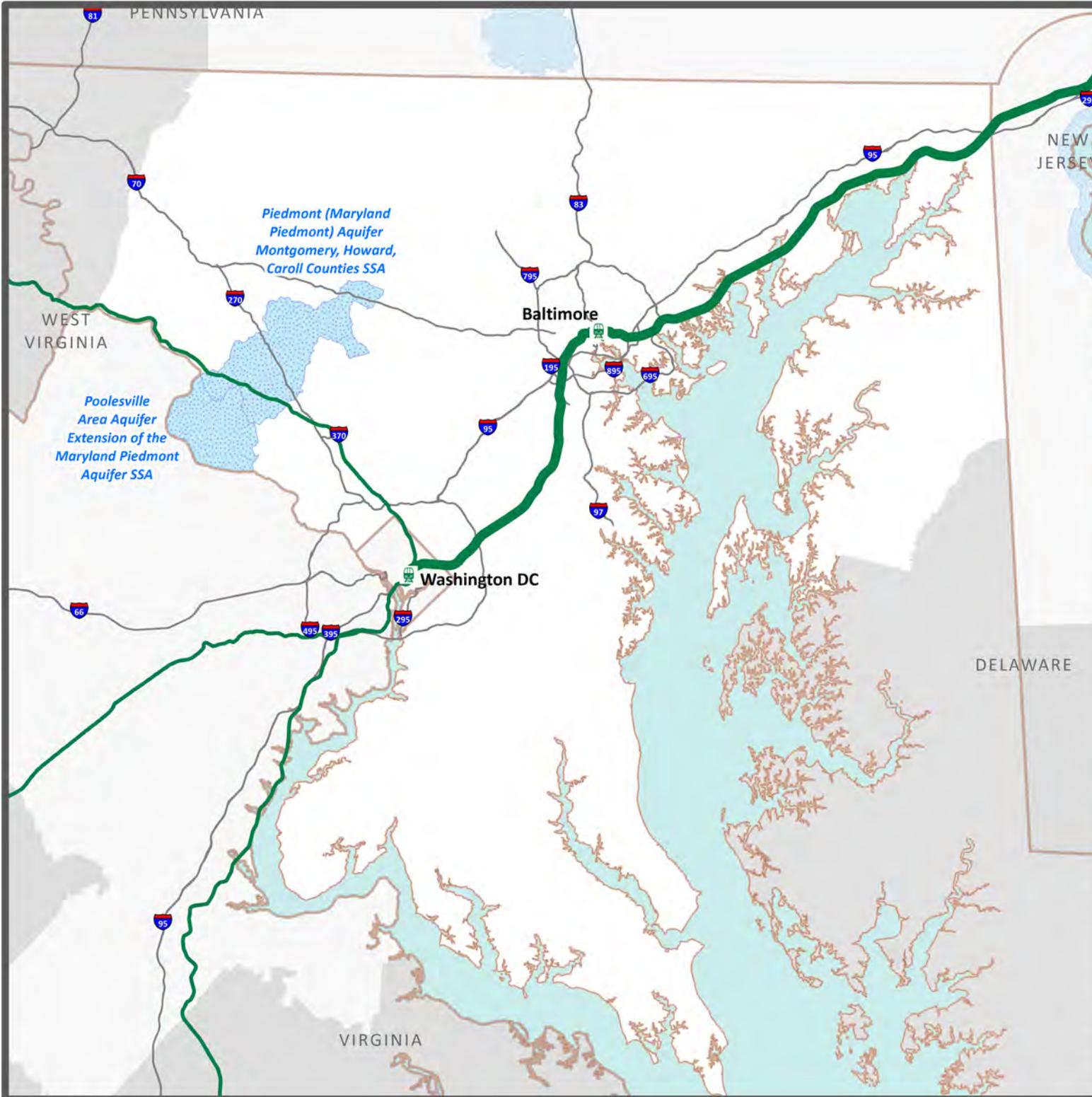
The Wildlife and Heritage Service conserves and protects RT&E species under the authority of the Nongame and Endangered Species Conservation Act (Natural Resource Article 10-2A-06) and its supporting regulations (Code of Maryland Regulations, COMAR 08.03.08). We also coordinate with the Maryland Department of the Environment in their review of activities within Wetlands of Special State Concern and their 100-foot upland buffer under the authority of COMAR 26.23.01.04. We look forward to working with those involved in this project to develop recommendations for avoidance and minimization of adverse impacts to Maryland's RT&E species and their habitats. Thank you for the opportunity to review and comment, and feel free to contact WHS with any questions regarding this information.

ER# 2020.1212.SCMAGLEV

## **ATTACHMENT B – GEOLOGY**

# **Geology Technical Support NEC Future Reference Maps**

Source: NEC Future Tier 1 Draft Environmental Impact Statement




# MARYLAND

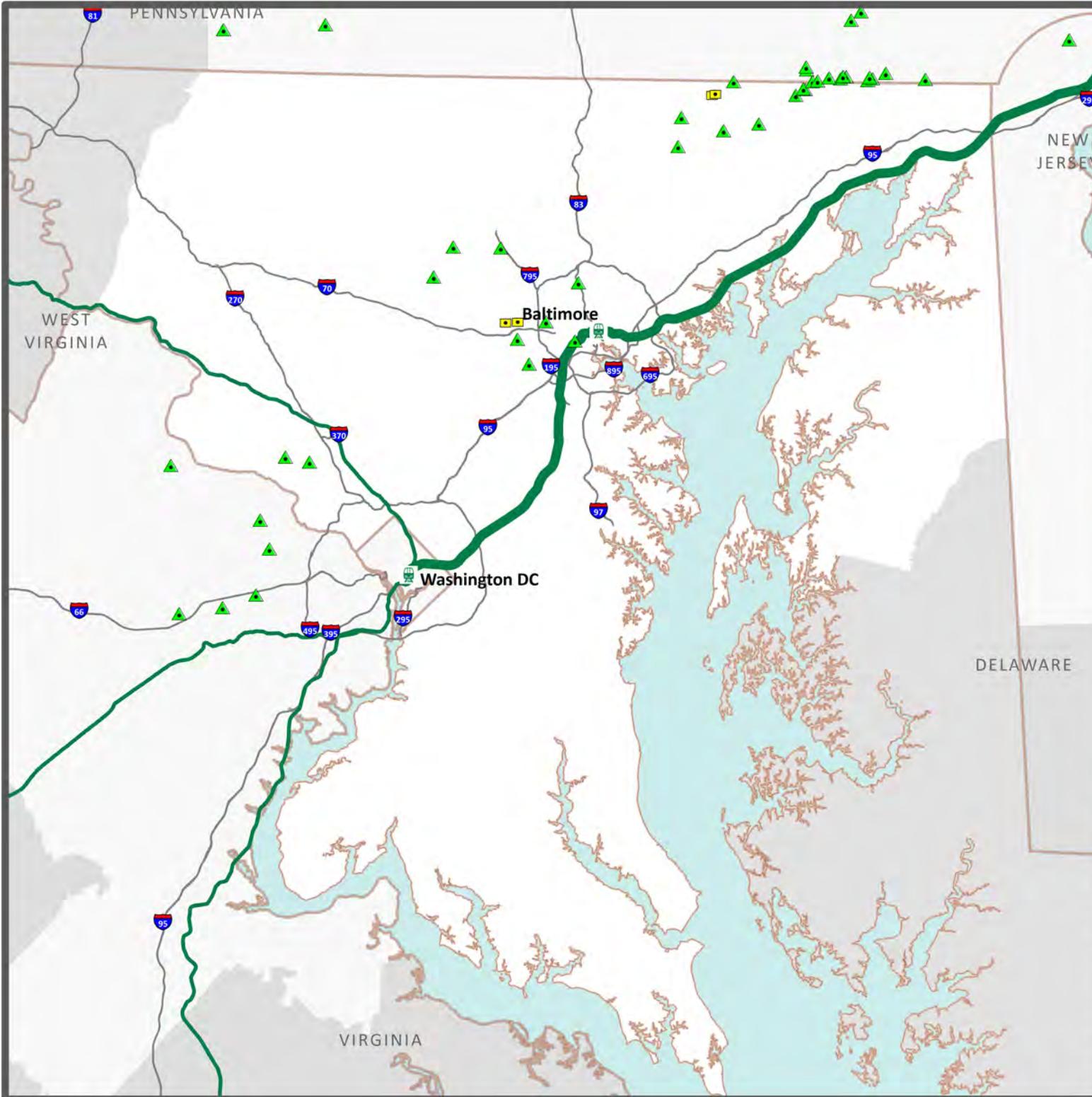
## Sole Source Aquifers

- Legend**
-  Major Station
  -  Northeast Corridor - Existing Service
  -  Amtrak Connecting Corridor
  -  NEC FUTURE Study Area
  -  State Boundary
  -  Sole Source Aquifers



Source of Data: U.S. EPA Office of Water

Notes:




# MARYLAND

## Asbestos Occurances

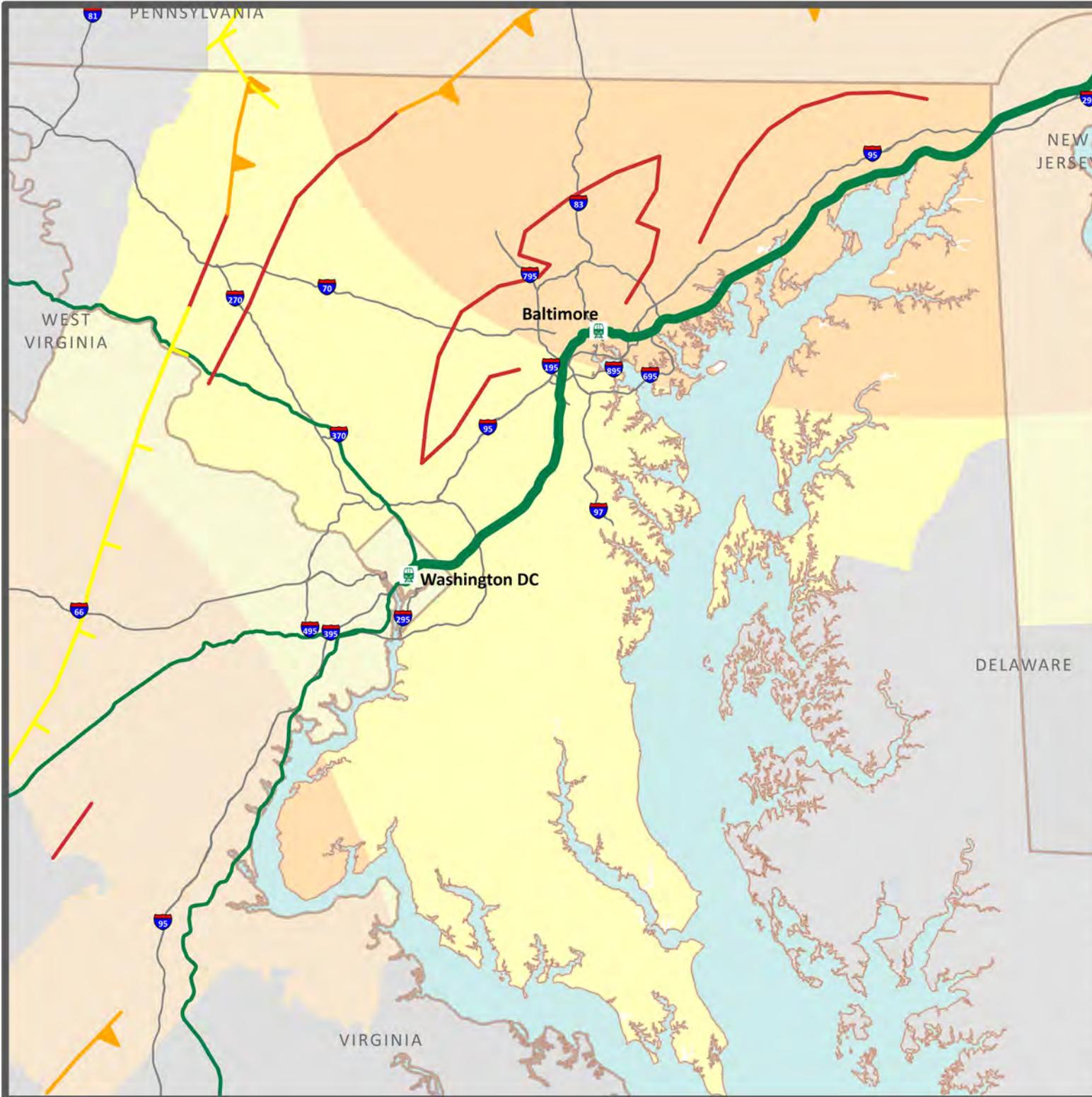
### Legend

-  Major Station
- Asbestos mines, prospects, and occurrences**
-  Prospect or Occurrence
-  Past producer
-  Northeast Corridor - Existing Service
-  Amtrak Connecting Corridor
-  NEC FUTURE Study Area
-  State Boundary



Source of Data: USGS, Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Natural Asbestos Occurances in the U.S., 2006, Van Gosen

Notes:



**Legend**

- Major Station
- Northeast Corridor - Existing Service
- Amtrak Connecting Corridor

**Fault Lines**

- Fault
- Normal Fault
- Thrust Fault
- NEC FUTURE Study Area
- State Boundary

**Seismic Hazard**

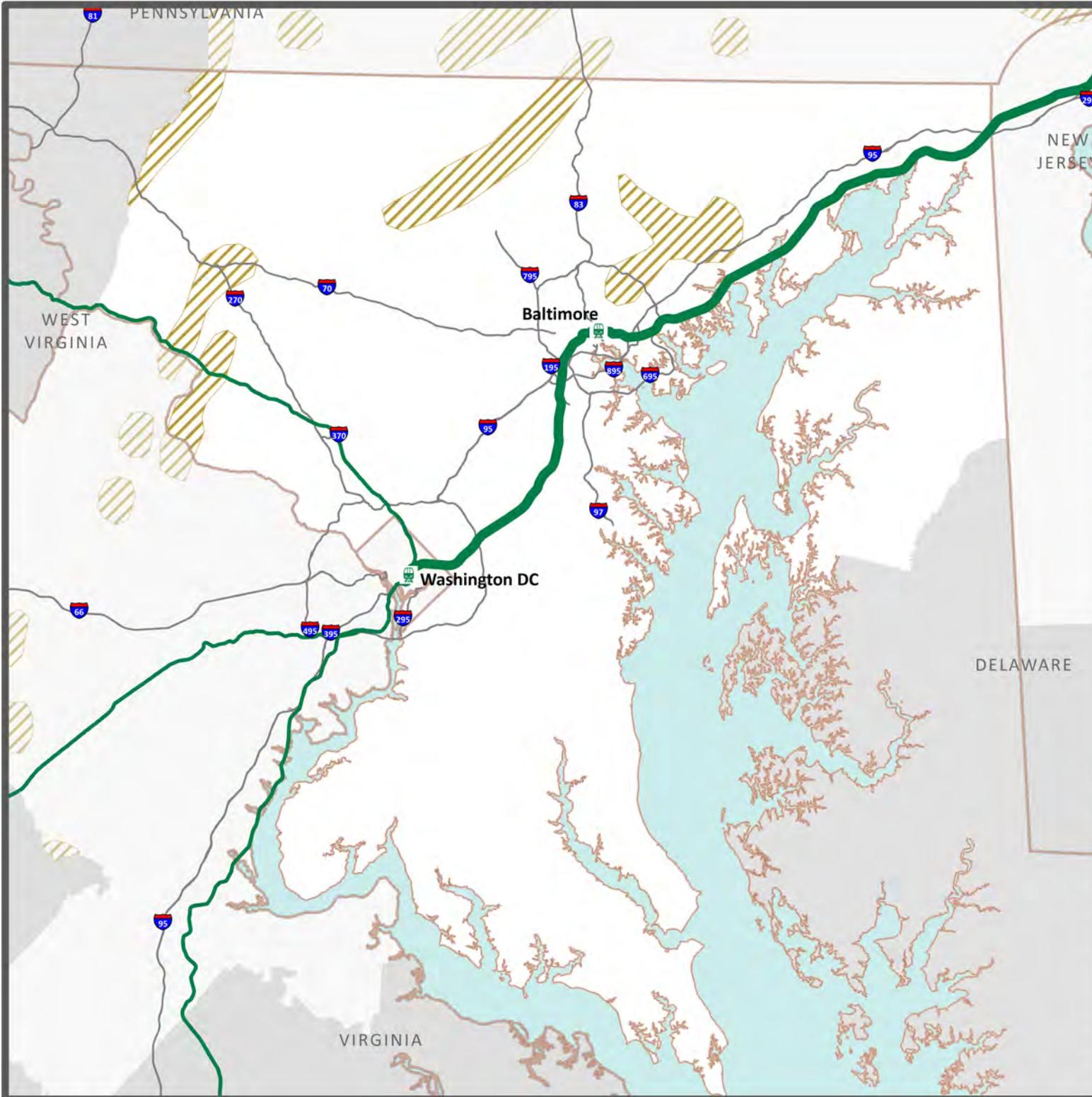
**Acceleration Values within the Polygon**

- Range from 1% to 2% g
- Range from 2% to 3% g
- Range from 3% to 4% g
- Range from 4% to 5% g



Source of Data: The National Atlas of the United States of America and (or) the U.S. Geological Survey, National Seismic Hazard Mapping Project

Notes:




# MARYLAND

## Karst Topography

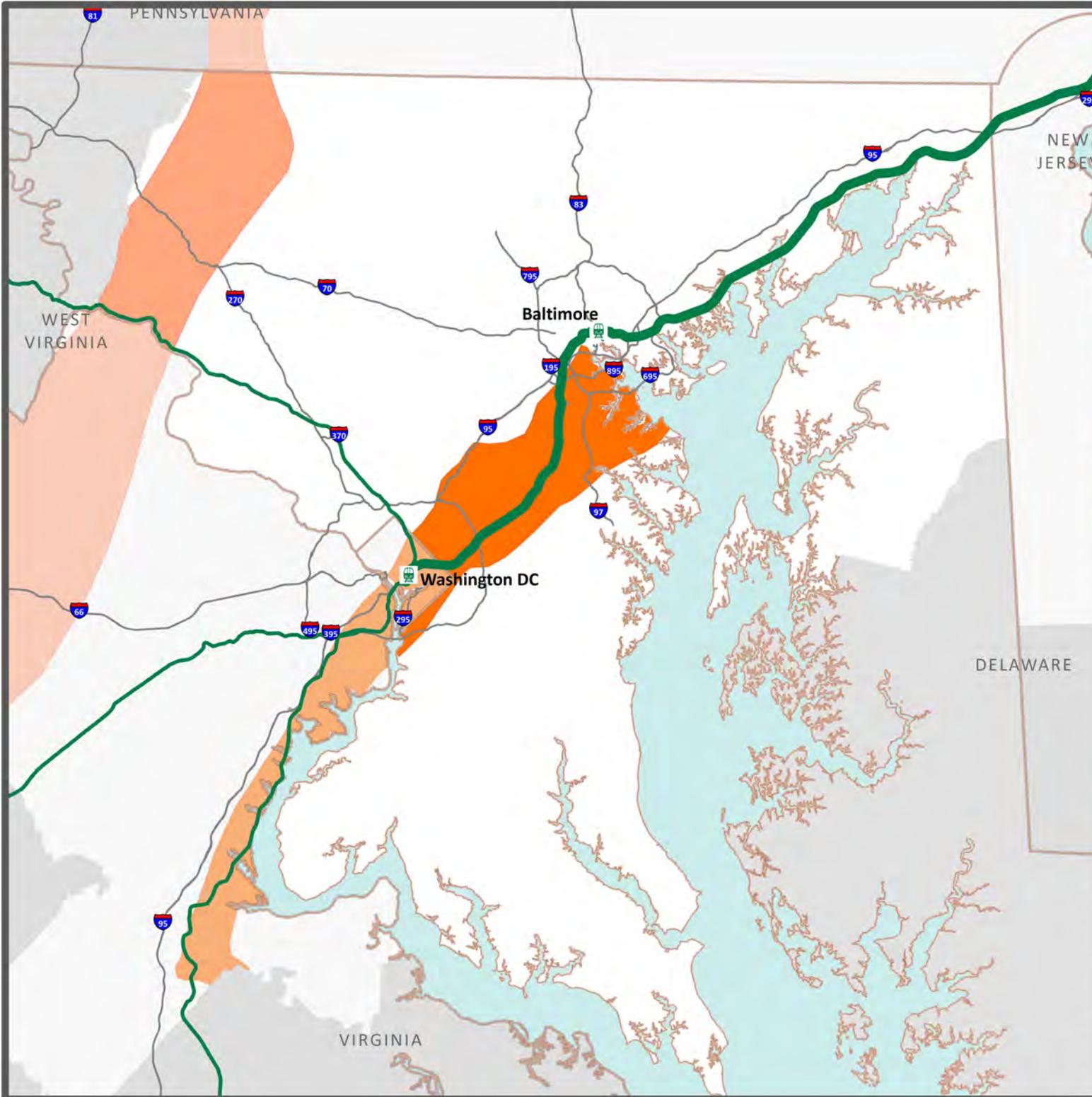
### Legend

-  Major Station
-  Karst Topography
-  Northeast Corridor - Existing Service
-  Amtrak Connecting Corridor
-  NEC FUTURE Study Area
-  State Boundary
-  Karst Topography



Source of Data: National Atlas of the United States; B.D. Tobin, and D.J. Weary.

Notes:



# MARYLAND

## Landslide Incidence and Susceptibility

### Legend

- Major Station
- Northeast Corridor - Existing Service
- Amtrak Connecting Corridor
- NEC FUTURE Study Area
- State Boundary

### Landslide Incidence and Susceptibility

- High landslide incidence (more than 15% of the area is involved in landsliding)
- High susceptibility to landsliding and moderate incidence
- High susceptibility to landsliding and low incidence



Source of Data: The National Atlas of the United States of America and (or) the U.S. Geological Survey

Notes:

Map Date: March 28, 2013  
 Version: 1  
 Filename: MD\_LandslideIncidence&Susceptibility.mxd

