BWRR
BALTIMORE-WASHINGTON RAPID RAIL

# **Exhibit Q –** MDE Comment Response Matrix

| # | Agency | MDE Comment | Official Comment Response |
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| 1 | NTWD-1 | Please include regulated resources on the erosion and sediment control plans, when provided. | Erosion control plans will be prepared at FEIS for the preferred alternative. |
| 2 | NTWD-2 | Please include details of the structures (such as construction access and timber matting) that will impact nontidal wetlands and nontidal wetland buffers, either permanently or temporarily. | Construction and permanent access roads from the existing street network to the elevated viaduct are shown in solid red on the impact plates and labeled accordingly. A separate drawing detailing temporary access treatment options such as culverts and bridges has been added at the end of the wetland plates (Exhibit A). These temporary facilities will be used at various locations during the construction of the project. The specific locations and treatments will be determined at subsequent stages of the project design. |
| 3 | NTWD-3 | Depending on height, aspect, and wetland type, areas beneath the elevated sections of track may be considered temporary or permanent conversion wetland impacts Please differentiate between the type of impacts as to if they are temporary, permanent or permanent conversion? | All areas underneath the viaduct will be impacted during construction. For the sake of conservative impact and mitigation analysis, trees will not be allowed to grow underneath viaducts. This will be evaluated further as design progresses. PFO wetlands beneath the viaduct are considered permanent habitat conversion where permanent maintenance access is not required as they will be able to revert to PEM or PSS post- construction. Otherwise, direct surface impacts (e.g. permanent maintenance access, piers, footings) in the same location as wetlands are considered permanent. The revised impact plates differentiate such impacts, see revised Exhibit A. No temporary conversion is proposed. |

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| 4 | NTWD-4 | The Bald Cypress ecosystem located north of Powder Mill Road may be considered to have unique plant and wildlife value and should be avoided. If it is not possible to avoid the Bald Cypress ecosystem completely, please provide a thorough minimization analysis. | As design progresses, all practicable opportunities to minimize impacts to this system will be implemented. If impacts are deemed unavoidable, a minimization analysis will be provided. Once a preferred alternative is selected (at FEIS), the location of the TMF ramps will be optimized to minimize impacts to this sensitive area. The spacing of the viaduct piers will also be optimized which may result in a reduction of the number of piers present in this natural resource area. Note the Bald Cypress at this location are not naturally occurring, they were planted as mitigation for WMATA. |
| 5 | NTWD-5 | Major impacts are proposed to nontidal wetlands of special State concern (NTWSSC) associated with the Train Maintenance Facilities (TMF). Can impacts associated with options 4 and 5 be minimized through additional elevated access or right of way (ROW) adjustment? | Option 5 is the TMF proposed as a part of the JPA. The TMF ramps are on elevated viaducts. The surface impacts are related to the viaduct piers and maintenance access roads. See response to comment #4 regarding optimization of TMF ramps at FEIS to minimize impacts. Also, see comment #6 for the design criteria governing the layout of the TMF ramps and associated ROW. |

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| 6 | NTWD-6 | The proposed TMF options 4 and 5 have major permanent impacts to NTWSSC. TMF option 10A also has major impacts to nontidal wetlands. Please provide a functional assessment of the wetland communities associated with options 4, 5, and 10A, and provide justification for the impacts to the NTWSSC. | The impacts to NTWSSC resources and non-tidal wetlands of TMF Options 4; 5 and 10A are unavoidable due to the design criteria required for the TMF ramps and TMF facility. These design criteria apply to horizontal and vertical alignments, turnout locations on the mainline for TMF ramps, vertical separation between the TMF ramps and the mainline, as well as location of turnouts and buildings inside the TMF facility. The J alignment is currently designed to fit all three TMF options included in the DEIS (4, 5, and 10A). Once a preferred TMF option is selected (and the other TMF options are eliminated), the mainline alignment will be optimized for the remaining TMF site. Minimization of impacts to natural resources (wetlands and waterways) will be considered during this optimization exercise. TMF Options 4, 5, and 10A have the potential to result in an immediate and permanent removal of habitat, potential hydrologic disconnection, and altered functions and values of the wetland systems within the footprint. An expanded functional assessment of the wetland communities associated with options 4, 5, and 10A is attached to the end of this comment response package. In addition, Section 7 has been added to Exhibit B to incorporate the wetland functional assessment. |
| 7 | NTWD-7 | Additional field site visits need to be scheduled. These visits may result in additional comments and further requests for additional information. | Understood, site visits will be coordinated. Field visits to PRM sites were held on 2/10/21, and along the alignment on 3/05/21. |

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| 8 | NTWD-8 | The proposed permanent nontidal wetland and waterway impacts, and associated mitigation requirements, are currently broken down by Federal 8- digit HUC. For MDE review purposes the impacts and mitigation requirement must be broken down by Maryland State 8-digit watersheds. Please provide tables with this breakdown, similar to the existing tables 1 -3 found in the mitigation plan. Also, please add the Maryland State 8-digit watersheds to any relevant figures found in the mitigation plan (e.g. Figures 1-3). | All noted sections of the JPA have been revised to show impact and mitigation quantities corresponding to MDE 8-digit watersheds. Please refer to the summary tables shown in revised Exhibit A. |
| 9 | NTWD-9 | Please expand upon the mitigation site search narrative to include information specific to the proposed permanent impacts and mitigation by Maryland State 8 digit watersheds. Please ensure that the site search has been completed in accordance with MDE's Nontidal Wetland Mitigation Site Search Requirements - Revised 11/16/18 (see attached). | An expanded site search narrative has been added to Section 5.1 of the CMP. |
| 10 | NTWD- 10 | The proposed permanent nontidal wetland impacts to be mitigated include wetlands classified as Palustrine Unconsolidated Bottom (PUB), which are defined as being less than 30% vegetated. Has a determination been made if MDE will be regulating these wetlands? If MDE is not regulating these please specify as "USACE only" in the impacts and mitigation tables. | Field review of PUB systems proposed for impact is still pending. Once field verification is provided by MDE, JPA impacts and mitigation requirements will be updated accordingly. Site visits will be coordinated by BWRR. |

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| 11 | NTWD- 11 | The proposed permanent wetland impacts include 12.03 acres of Permanent Habitat Conversion (PFO to PEM), which are proposed to be mitigated at a 1:1 ratio. Please specify the maintenance activities that will take place in these permanent conversion areas. In some instances maintenance activities may limit wetland function to such a degree that it may be considered a complete loss (e.g. heavy mulch application, repeated herbicide applications, mowing several times each year, etc.). In these cases a 2:1 mitigation ratio would be required. | The impact shades have been updated on the plates to clarify the distinction between habitat conversion and permanent impacts. In areas where permanent impacts are shown, a permanent maintenance access will be constructed. This maintenance access will be constructed with gravel or other permeable materials. The purpose of the maintenance road is to provide access to the viaduct piers and other SCMAGLEV facilities located under the viaduct. The areas adjacent to the maintenance road will be allowed to revert back to a natural condition except that tall trees will not be allowed to grow back under the viaduct. The permanent conversion areas will revert to PEM or PSS. The areas designated as permanent conversion are not being considered a complete loss because these areas will not undergo mulch application, mowing or herbicide applications. |
| 12 | NTWD- 12 | The mitigation plan states that BWRR, LLC., (BWWR) will coordinate with the bank sponsors of two pending compensatory mitigation banks (Peige Bank and Patuxent Bank) to determine if timing of credit availability aligns with the project needs. This coordination should occur at BWRR's earliest convenience since the availability of bank credit will determine the extent of PRM mitigation needed. Additionally there is a third pending bank (Pheasant Run Bank) that wasn't identified in the mitigation plan that BWRR should coordinate on located in the Gunpowder-Patapsco 8-digit federal HUC. | BWRR intends to use mitigation banks to the greatest extent they are available. BWRR has initiated coordination with the sponsors of the Peige, Patuxent, and Pheasant Run mitigation banks in February. Information related to these banks has been updated in Section 4.1 of the CMP (Exhibit G). |
| 13 | NTWD- 13 | The mitigation plan states that the site protection instruments for the mitigation sites will either be in the form of a Conservation Easement or Declaration of Restrictive Covenants. The protection mechanism must be a Conservation Easement, unless it is demonstrated that an easement is not feasible for a given site. | Understood that this is a preference for MDE. BWRR is reviewing easement options and will provide an update with the Phase II Mitigation Plan. |

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| 14 | NTWD- 14 | The mitigation plan states that the performance standards and monitoring for the mitigation sites will be in accordance with Performance Standards and Monitoring Protocol for Permittee-Responsible Nontidal Wetland Mitigation Sites in Maryland, October 28,2018. The performance standards and monitoring protocol is revised from time to time and the version used will be the most recent at the time of Phase II Mitigation Plan approval. At this time the most current version is Ecological Performance Standards and Monitoring Protocol for Permittee-Responsible Nontidal Wetland Mitigation Sites in Maryland, October 30, 2020 (see attached). | The performance standards will be detailed in the Phase II Mitigation Plan and will include the most recent (October 30, 2020) performance standards and monitoring protocols at the time of Phase II approval. |
| 15 | NTWD- 15 | The mitigation plan states that BWRR will be responsible for long term management of the mitigation sites. Is it the intention of BWRR to remain the long-term steward of the mitigation sites in perpetuity? Is BWRR an adequate/appropriate longterm steward? | BWRR is reviewing options for the long-term management of the permittee-responsible mitigation sites and will determine and designate the appropriate long-term steward (LTS) for the site. Details will be coordinated with MDE and provided in the Phase II Mitigation Plan. |
| 16 | NTWD- 16 | Please provide a narrative discussion of the expected aquatic resource functions to be lost by the proposed permanent impacts as well as the expected functions to be gained by the proposed mitigation projects. This discussion can be more general as part of the Phase I Mitigation Plan, and be later refined in the Phase II Mitigation Plan. | Additional Narrative discussion related to loss and replacement of functions and values is provided in Section 2.3 of the CMP. A Functional Analysis Summary for the impacted wetlands is provided as Exhibit B, Section 7. Detailed discussion of the functional improvement resulting from the mitigation projects will be provided in the Phase II Mitigation Plan. This will include the completion of stream and wetland functional assessments. |
| 17 | NTWD- 17 | Standard mitigation ratios for wetland enhancement range from 2:1 to 10:1, with the ratios depending on the amount of functional uplift (e.g., farmed to forested wetland 2:1; invasive/non-native control and planting woody species 4:1; invasive/non-native control only 10:1). Please provide details of the proposed wetland enhancement activities as well as justification for their crediting based on functional uplift. | Details to justify the requested mitigation ratios will be provided in the Phase II Mitigation Plan. Wetland enhancement ratios will be underwritten by a quantitative wetland functional assessment. |

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| 18 | NTWD- 18 | The mitigation plan proposes a Stream and Wetland Buffer credit type at each of the four permittee responsible mitigation (PRM) sites. It appears that these areas are proposed for wetland credit only. Please clarify which areas are stream buffers and which areas are wetland buffers rather than lumping them together. The width of the proposed buffers appear to vary quite a bit in some areas. Wetland buffers are required to be a minimum of 25 feet. Justification for wetland buffer areas beyond the required 25 feet will be required if credit is being requested. | The combined stream and wetland buffer will be replaced with separate stream and wetland buffers and will be included in the Phase II Mitigation Plan. Note that in accordance with MDE Guidance, variable width stream and wetland buffers will be applied on a site-specific basis based on site constraints. |
| 19 | NTWD- 19 | The mitigation plan proposes wetland preservation at each of the four PRM sites. Preservation does not result in a gain of aquatic resource area for functions, and needs to be adequately justified to be considered for mitigation credit. Typically MDE will only entertain wetland preservation proposals that contribute a small percentage of total mitigation credits (e.g. less than 10%). Please provide a justification for the proposed wetland preservation areas that includes the following: how the resources to be preserved provide important physical, chemical, or biological functions for the watershed; how the resources to be preserved contribute significantly to the ecological sustainability of the watershed; and how the resources are under threat of destruction or adverse modifications. The current wetland preservation proposal is problematic because it makes up too substantial a proportion of the overall mitigation credits at the Lake Collington site (i.e. -39%) and Parker Lane site (i.e. -17%).<br>Additionally much of the proposed wetland preservation for the Lake Collington site takes place on parcels where no wetland creation or restoration is proposed, and that are located within the floodplain of Collington Branch indicating a low threat of development. | MDE's guidance regarding approval of preservation credit at PRM sites is understood. Justification for the inclusion of wetland preservation will be provided in the Phase II Mitigation Plan. |

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| 20 | NTWD- 20 | The mitigation plan proposes wetland creation at three of the four PRM sites. Wetland creation has more risk than restoration and may necessitate higher financial assurances. | Financial assurances will be proposed in the Phase II Mitigation proposal. The required amount of financial assurances will be determined on a site- specific basis by the district engineer, in consultation with GreenVest, in accordance with the 2008 Final Mitigation Rule (33 CFR Chapter II Section 332.3 (n) Financial assurances). |
| 21 | NTWD- 21 | The mitigation plan proposes stream channel creation at two of the four PRM sites. Additional justification will be required as to why channel creation is appropriate (e.g. historical imagery documenting previous channel presence). | Additional information and details to justify proposed channel creation will be provided in the Phase II Mitigation Plan. |
| 22 | NTWD- 22 | The proposed crediting of stream restoration and stream buffers should be based on the Maryland Interagency Review Team's stream calculator, and the monitoring and performance standards for the stream mitigation should reflect the goals of the individual stream restoration projects. | Acknowledged. Stream mitigation crediting will be calculated using the Maryland Stream Mitigation Framework Tool. Monitoring and performance standards for the stream mitigation will reflect the goals of the individual stream restoration projects. |
| 23 | NTWD- 23 | The mitigation plan identifies Washington Suburban Sanitary Commission sewer line easements occurring in proposed mitigation areas at three of the four PRM sites. The impact of these easements on proposed restoration activities will need to be further explored. | WSSC and other utility easements will be clearly identified, and surveyed locations will be included in the Phase II Mitigation Plan. Coordination with relevant utilities, including WSSC, will be completed as part of the design process. Utility easement areas will be excluded from the conservation easement area and mitigation credit will not be developed on any areas within utility easements. |
| 24 | NTWD- 24 | Please complete and submit a delineation of the existing aquatic resources on the proposed mitigation sites. Please keep in mind that any proposed impacts to waterways and/or the 100-year nontidal floodplain will require authorization from our program. | Regulatory resources will be delineated, and information included with the Phase II Mitigation Plan. This will include quantification of proposed impacts to waterways and the 100-year floodplain. |
| 25 | NTWD- 25 | Site visits to the proposed PRM sites should be scheduled. | Site visits were completed on February 10, 2021. |

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| 26 | NTWD- 26 | At the Parker Lane site, what is the proposed future use of the areas adjacent to the mitigation credit area? If they are to remain in active agriculture (row crops, hay, or pasture) expanded buffers and/or BMPs may be warranted. | Acknowledged. Adjacent existing and proposed land use will be evaluated as part of the design process to minimize potential impacts to the mitigation sites. |
| 27 | NTWD- 27 | Based on the aerial photography provided there appears to be a fair amount of existing forested stream buffer around Reaches B and C at the Parker Lane site. Will this buffer be impacted as part of the proposed stream restoration? | The stream and stream buffer are in poor condition and will be impacted as part of the mitigation project. Stream reaches are very incised and entrenched. The stream buffer is dominated by invasive species. Additional detail of the existing condition and impacts will be provided in the Phase II Mitigation Plan. |
| 28 | NTWD- 28 | What will happen to the existing road crossing between Reaches A and C at the Parker Lane site? | The crossing (and culvert) will remain in place and will be excluded from the mitigation easement. Additional detail will be provided in the Phase II Mitigation Plan. |
| 29 | NTWD- 29 | Please identify which two reaches are intended for the proposed RSC restoration method at the Parker Lane site. | Reaches A and B are highly incised and cannot be realigned to decrease slope and erosive energy. Additional, reach-specific design information will be included in the Phase II Mitigation Plan. |
| 30 | NTWD- 30 | The Parker Lane site is located within the Piscataway Creek 2 Tier II catchment, which will require a Tier II Antidegradation Review exemption letter from MDE's Environmental Assessment and Standards Program. | As part of agency coordination conducted during development of the Phase II Mitigation Plan, a Tier II Review Exemption Determination will be submitted to the Antidegradation Program for review and concurrence. Results will be provided in the Phase II Mitigation Plan. |
| 31 | NTWD- 31 | What is the purpose of the proposed S WM pond at the Brinkley Road site? | The property owner is planning on constructing a SWM pond on the upland portion of the site. Details of the pond, including purpose, will be provided in the Phase II Mitigation Plan. |
| 32 | NTWD- 32 | Based on the aerial photography provided it appears that wetland creation is being proposed in an area of existing forest along the west side of Henson Creek at the Brinkley Road site. MDE will not approve wetland creation in an existing forest. | The feasibility for wetland creation in this area will be reviewed and further assessed during the design development, including consideration of potential stream restoration. If this area remains proposed as wetland creation, a detailed description of the existing condition and justification for wetland creation will be provided in the Phase II Mitigation Plan. |

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| 33 | NTWD- 33 | At the Brinkley Road site the proposed wetland creation area located in between the east bank of Henson Creek and the trail may be better suited for buffer only. | The feasibility for wetland creation in this area will be reviewed and further assessed during the design development, including consideration of potential stream restoration. If this area remains proposed as wetland creation, a detailed description of the existing condition and justification for wetland creation will be provided in the Phase II Mitigation Plan. |
| 34 | NTWD- 34 | What will happen to the existing road crossing over the proposed stream restoration on Parcel 4 at the Mill Swamp North site? | The road crossing and culvert will remain in place and will be excluded from the conservation easement. |
| 35. | WCS-1 | Erosion and sediment control, grading and stormwater management plans were not included with the Application. Please provide any that are available or provide the status of them. | Erosion and sediment control, grading and stormwater management plans will be provided later as the design advances towards the FEIS phase for the preferred alternative. |
| 36 | WCD-1 | The details of the structures that will be needed for construction access and temporary stream crossings like culverts or bridges that will impact regulated resources have not been included. Please provide these details. It is recommended that a bridge be used to span over the resource (bank to bank) for minor stream crossings if a crossing is required for construction access. If a temporary bridge is used without the need for any pump around or other in- stream work, it will be considered no stream impact and is one specific way to avoid and minimize impacts to the waterway. | Details showing temporary access culverts and bridges have been added at the end of the wetland plates, in Exhibit A. Note, these details are mostly applicable to areas located beyond the limits of the elevated viaduct. At most locations underneath the viaduct, a permanent maintenance access road is needed. This requires the installation of permanent culverts/structures to convey the waterways beneath the maintenance access road. |

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| 37 | WCD-2 | Specific plan details and hydraulic analysis in accordance with COMAR 26.17.04 Construction on Nontidal Waters and Floodplains will be required for stream/floodplain impacts such as spans, structures, foundations and scour prevention measures. This floodplain study will be used to determine compliance with the regulations including documenting that there will 7 be no 7 rise to the flood elevation and no encroachment into the floodway due to the proposed activity. Please provide these when they are available Nontidal Waters and Floodplains will be required for streaming/floodplain impacts such as spans, structures, foundations and scour prevention measures. This floodplain study will be used to determine compliance with the regulations including documenting that there will be no rise to the flood elevation and no encroachment into the floodway due to the proposed activity. Please provide these when they are available. | The hydraulic analysis will be completed for the preferred alternative as the design advances and closer to FEIS phase. |
| 38 | WCD-3 | Please note: MDE (the State) does not regulate the tidal floodplain. The Anacostia and Patapsco River crossings will impact the tidal floodplain (shown on impact plates 1, 2,41,42 & 43), please remove these impact figures from the total. | The relevant impact summaries have been revised to exclude impacts to tidal 100-year floodplains. Refer to the revised Exhibit A for updated summary of non-tidal 100-year floodplain impacts. |
| 39 | EASP-1 | Tier II Review Exemption Determination Form: Review this form first. Some activities that require MDE permits within Tier II watersheds may not require additional Tier II review. MDE will use this form to decide whether or not this applies to your application. If this form is not applicable, complete the Tier II No- Discharge Analysis and Tier II Minimization Analysis forms. | Understood. The SCMAGLEV project does not meet the exemption criteria on the Exemption Determination Form. The Tier II No-Discharge Analysis and Tier II Minimization Analysis forms will be completed in coordination with MDE. |

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| 40 | EASP-2 | Tier II No-Discharge Analysis Form: For the no-discharge alternatives analysis, please review the list of exempt activities first. If you believe one or more of these applies to your project, contact Angel Valdez (angel.valdez@maryland.gov), with a rationale and supporting documentation. If MDE concurs, then you will not have to complete any additional no-discharge analysis. | As discussed with MDE (Angel Valdez) on March 1, 2021, BWRR believes that there is not a reasonable alternative that avoids the Tier II watersheds. As requested by MDE, BWRR will prepare a submit justification that explains why the project is unable to avoid Tier II impacts under Situation 2: Project has location specific limitations. |
| 41 | EASP-3 | Tier II Minimization Alternative Analysis Form: Based on the information provided, MDE has determined that this project will result in permanent impacts to Tier II watersheds. All minimization, in-kind mitigation, or out-of-kind offsets must occur within the affected Tier II watershed. | As discussed with MDE on March 1, 2021, BWRR will complete the Tier II Minimization Alternative for the Recommended Preferred Alternative, J- 03, and will provide under separate cover later. MDE will provide further guidance and examples on Tier II Minimization Alternative scope and mitigation requirements. BWRR will meet with MDE regularly throughout the Tier II analysis prior to submittal of forms. |
| 42 | EASP-4 | Social and economic justification guidance document: MDE has determined that the impacts to Tier II resources associated with this project are of great enough magnitude warrant additional project justification. Please refer to the 4th attachment, the social and economic justification guidance document for private entities when providing this justification. Please direct any questions regarding the Tier II review, and provide all forms, reports, and supporting documentation, to Angel Valdez via email at angel.valdez@maryland.gov. Meetings can be arranged upon request. | As discussed with MDE on March 1, 2021, BWRR will complete a Social and Economic justification for impacts to Tier II resources associated with the project. |
| 43 | TWD-1 | The Tidal Wetlands Division will provide comments when their review is complete. | Noted. |
| 44 | MHT-1 | The Maryland Historic Trust will provide comments as available. | Noted. |

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| 45 | DNR-1 | Based on the impact plates, it appears that facilities for this project are frequently located within forested areas. Many forested areas within or adjacent to the project site are defined as Forest Interior Dwelling Bird habitat. Populations of many Forest Interior Dwelling Bird Species (FIDS) are declining in Maryland and throughout the eastern United States. The conservation of FIDS habitat and all forested areas is strongly encouraged by the Department of Natural Resources. Disturbance of the riparian corridor should be minimized to the greatest extent possible. | Impacts to FIDS habitat will be avoided to the maximum practicable extent as design progress. BWRR will continue to coordinate with MD DNR as the project moves forward. |
| 46 | DNR-2 | There is a Sensitive Species Project Review Area (SSPRA) and Wetland of Special State Concern (WSSC) associated with Beaver Dam Creek in the area where the BARC TMF and elevated portion of the rail is proposed (approximately around Impact Plates WI-5 through WI-13). These impact plates describe permanent habitat conversions and impacts to this WSSC and SSPRA. DNR Wildlife and Heritage Service (WHS) commented on this area in their October 2020 letter (attached). DNR WHS will provide additional comments, and further coordination regarding avoidance and minimization of impacts will likely be required. | Noted. Impacts to WSSC and SSPRAs will avoided to the maximum practicable extent as design progress. BWRR will continue to coordinate with MD DNR as the project moves forward. |
| 47 | DNR-3 | Beaver Dam Creek is designated as Tier II High Quality Waters in the project area, demonstrating that both benthic and fish data for this stream segment is significantly higher than the standard. DNR mapping shows a large area of the MD295 corridor from approximately Greenbelt to north of Patuxent River as a the 'Tier II Catchment". DNR appreciates the inclusion of the Tier II watershed boundary on the wetland impact plates and would like to emphasize the need to avoid and minimize impacts to sensitive resources in this area. | Understood. BWRR will continue to coordinate with MDE on the Tier II analysis and avoidance and minimization within Tier II Catchment areas. |

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| 48 | DNR-4 | The area around the Patuxent River on the east side of MD295 is designated as a WSSC and SSPRA. Although the WSSC is indicated on the impact plates, there seems to be different types of impacts within the WSSC. The permanent wetland habitat conversion and pier impacts are within the LOD on WI-23 and 24. However, only the pier impact contains the color shading for permanent NTWSSC impact? Both seem permanent and are within the WSSC. Please note that although the area along the northern shoreline of the Patuxent River is not delineated as a wetland, it is within the SSPRA and DNR will closely review activities within the SSPRA/ WSSC boundaries. | On plates WI-23 and 24, permanent impacts are shown within the WSSC only where pier foundations are proposed as this is the only permanent wetland loss within the LOD. Forested wetlands, including the referenced WSSC, not impacted by pier foundations but below the proposed viaduct will be converted from PFO to PEM due to tree height restrictions. However, wetland function will be restored and/or maintained in such areas post construction. Therefore, the majority of the WSSC wetland is considered permanently converted. |
| 49 | DNR-5 | DNR MBSS surveys have documented the mussels species Elliptio producta (Atlantic Spike) and Lampsilis radiata (Eastern Lampmussel) in the vicinity of the project area in the Patuxent River. Please coordinate with DNR as plans for instream work are refined. Additional surveys or coordination regarding mussel conservation may be required. | Noted. BWRR will continue to coordinate with MDDNR as the design progresses. |

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| 50 | DNR-6 | Please clarify the stormwater requirements for this project, particularly regarding the elevated track portions. There did not appear to be stormwater management incorporated along the main track portions or along the alignment. Stormwater management facilities should not be located within existing wetlands. DNR is requesting review of stormwater plans as they are refined. | Detailed information for the SWM facilities will be provided as the design advances and closer to the FEIS phase. This project will follow both Environmental Protection Agency (EPA) and Maryland SWM guidelines for Federal Projects. Throughout the project corridor, SWM will be provided to meet current Maryland Department of Environment (MDE) regulations for both regulated SWM quality and quantity treatment. The developer intends to demonstrate the implementation of Environmental Site Design to the Maximum Extent Practicable before proposing traditional structural BMPs for SWM treatment. The proposed elevated track sections will be designed with drainage scuppers uniformly spaced along the entire viaduct so that stormwater runoff will discharge in small enough amounts to disperse in the air above ground, mimicking natural rainfall, as it falls to the surface. This new impervious storm runoff from elevated track sections is intended to be non-erosive and with no significant change to the water quality composition during the brief contact with elevated track surface during collection. Therefore, a variance will be requested from SWM treatment requirements for the elevated track sections. If this variance is not approved, then SWM treatment will be provided as required, and any facilities will be located to minimize any impacts to existing waterways or wetlands. |
| 51 | DNR-7 | All or part of the Patapsco Emergency Egress Facility, Construction Laydown Area, and Cherry Hill Station are in the Chesapeake Bay Critical Area and will need to conform to Critical Area laws and policies. Please coordinate with the<br>Critical Area Commission as appropriate. | Noted. CAC coordination has not yet been initiated. |

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| 52 | DNR-8 | Any crossing or construction in the Patapsco River should allow unimpeded passage for resident and anadromous fish. This project should also avoid impacting the tidal Largemouth bass fishery in the lower Patapsco. | Noted. It is not anticipated that the proposed Patapsco crossing will impede fish passage as it is proposed entirely underground. No impacts to surface water fisheries are anticipated. The Maglev system produces little to no noise or vibration when operational. BWRR will continue to coordinate with MDDNR as the design progresses. |
| 53 | DNR-9 | DNR managed land is adjacent to the Patapsco Emergency Egress facility. Impacts to the DNR managed lands from the use of heavy equipment, disposal of excavated material, or other construction activities should be avoided or directly coordinated with DNR. | Noted. Every effort will be made to avoid impacts to DNR public lands as design progresses. BWRR will continue to coordinate with MD DNR accordingly. |
| 54 | DNR-10 | Please clarify the construction activities planned for the LOD indicated on WI-43 and WI-44. These sheets were not found in the construction plans of Exhibit L. DNR's shapefile received in July 2020 describes this area as a construction laydown facility. | This is a laydown area that will be used during construction of the project to store materials and equipment. Although the impacts onto the natural resources identified within the limits of this laydown area (WP503; WP093; WP092B and WP092) have been quantified as temporary impacts in the tables, it is expected that the Contractor will plan the storage operations in such way to minimize or possibly completely avoid these natural resources. Labels have been added to wetland impact plates to clarify the use of this area. |
| 55 | DNR-11 | The following time of year restrictions will apply to this project:<br>o Generally, no instream work is permitted in Use I streams during the period of March 1 through June 15, inclusive, during any year (all streams unless otherwise noted below),<br>o 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 some Use II waters during the period of February 15 through June 15, inclusive, during any year (Little Patuxent and tributaries; Patapsco and its tributaries). | Noted. As stated in the DEIS, BWRR will follow all applicable TOYR requirements during construction of the SCMAGLEV project. |
| | | Exhibit G- Compensatory Mitigation Plan- For all stream restoration and mitigation projects, the following comments would apply: | |

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| | | o DNR's stream restoration policy (Principles and Protocols to Guide the Department of Natural Resources' Actions Regarding Stream Restoration Projects in Maryland, Policy Number 2015:01) states that "it is the overarching policy of DNR to protect riparian forests and tree cover and avoid tree clearing associated with stream restoration or other proposed stream 'improvement' activities....Impacts to existing forest cover or trees must be avoided or minimized to the maximum extent possible with ample justification in order for a stream restoration, rehabilitation, stabilization, reclamation, enhancement or engineering project to be supported by DNR." | Noted. As the project design progress, all practicable opportunities to avoid and minimize riparian forest impacts will be used. |
| 56 | | o FIDS habitat and riparian forest buffers are present on these mitigation sites. DNR has concerns about forest impacts from potential access and construction of this project. Please utilize design techniques that would avoid live tree removal. Please continue coordinating closely with DNR as design progresses. | Noted. As the project design progress, all practicable opportunities to avoid and minimize riparian forest and FIDS impacts will be utilized. |
| | | o WHS will be providing additional comments on these sites. | Noted. BWRR will continue to coordinate with MDDNR WHS as the design progresses. |
| | | o Fisheries information requests for these sites were not provided as part of the compensatory plan. A fisheries information request letter will be provided or updated. Fisheries letters should also be considered as part of DNR's official comments to this project, | Updated coordination response letters to DNR can be found in Appendix E of the revised CMP (Exhibit G). |
| | | o Please continue coordinating with DNR, and include Gwen Gibson on any correspondence, plan updates, or site visits for mitigation for this project. Please expect that DNR will have additional comments on mitigation as the plans are developed. | Noted. BWRR will continue to coordinate with MD DNR and Gwen Gibson as the design progresses. |

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| | DNR-12 | o The report indicates that 706 LF of stream mitigation is needed in the Patapsco-Gupowder HUC. Table 4 states that this area will be mitigated within the adjacent (Patuxent) HUC. Can additional justification for this be provided? | BWRR is currently considering use of mitigation bank credits for the impacts in the Gunpowder-Patapsco HUC rather than using out of watershed PRM mitigation. |
| | | o All mitigation projects should be designed to maintain or enhance fish passage through the project area, particularly during low flow periods, | Noted. Every effort will be made to maintain and or improve existing fish passage at mitigation sites as design progresses. |
| | | o Parker Lane: | |
| | | · The southern portion of this site, where most work is proposed, is located within an SSPRA. DNR WHS provide additional comments on this site. | Noted. Gwen Gibson confirmed this site is not within the SSPRA. |
| | | · There is potential for mussel species in the streams in and around this site. Additional coordination regarding mussel conservation may be needed. | Noted. |
| | | · 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 waters during the period of February 15 through June 15, inclusive, during any year. | Noted. All TOYR requirements will be followed during construction of this mitigation site. |
| | | o Brinkley Road: | |
| | | · 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 waters during the period of February 15 through June 15, inclusive, during any year. | Noted. All TOYR requirements will be followed during construction of this mitigation site. |
| | | o Mill Swamp: | |

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| | | · 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 waters during the period of February 15 through June 15, inclusive, during any year. | Noted. All TOYR requirements will be followed during construction of this mitigation site. |
| | | · There may be some small areas of the site that overlap with Critical Areas boundaries and may need to conform to Critical Area laws and policies. | Critical Area Commission coordination will be initiated as project design progresses. |
| | | · There is potential for mussel species in the streams in and around this site. Additional coordination regarding mussel conservation may be needed. | Noted. BWRR will continue to coordinate with MD DNR as this mitigation site progresses. |
| | | o Lake Collington | |
| | | · 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 waters during the period of February 15 through June 15, inclusive, during any year. | Noted. All TOYR requirements will be followed during construction of this mitigation site. |
| | | · This site is located within an SSPRA. DNR WHS will be providing comment on this site. | Noted. BWRR will continue to coordinate with MD DNR as this mitigation site progresses. |
| | | · There is potential for mussel species in the streams in and around this site. Additional coordination regarding mussel conservation may be needed. | Noted. BWRR will continue to coordinate with MD DNR as this mitigation site progresses. |
| | | · The report notes that Lake Collington is a former wastewater pond. What type of wastewater was stored in the pond? It may need to be characterized before the lagoon is opened to flow into the rest of the system. | Understood. Further studies regarding sediment and wastewater characterization will be completed for inclusion in the Phase II Mitigation plan. |

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| 57 | DNR-13 | DNR is continuing to review this permit application and will have additional comments, including comments to the mitigation package and final RTE coordination. Thank you for the opportunity to review and comment. | BWRR will continue to coordinate with MDDNR as the design of the project and mitigation sites progresses. |
| 58 | DNR-Oct2020 | For the Camden Yards work area as shown in Alternatives J-04, J-05, J-06, JI-04, JI-05 and JI-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 ‘A-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. | Noted. As noted in the DEIS, construction activity required for the Camden Yards station in downtown Baltimore is not expected to exceed typical noise or disturbance conditions associated with such nesting areas. BWRR will continue to coordinate with DNR on this and other species concerns. |
| 59 | DNR-Oct2020 | 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. | Understood. Direct and indirect impacts to swamp pink habitat will be avoided and minimized to the maximum extent practicable as design progresses. As noted in the DEIS, based on agency input, BWRR revised the location of an ancillary facility to avoid impacts to the federally threatened swamp pink and extensive wetlands in the Harmans area. |

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| 60 | DNR-Oct2020 | 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. | Understood. Impacts to such RTE species will be avoided and minimized as design progresses. BWRR will coordinate further with DNR and FWS to identify areas for detailed surveys. |
| 61 | DNR-Oct2020 | 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 (ammoecetes) 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. | Understood. Impacts to such RTE species will be avoided and minimized as design progresses. BWRR will coordinate further with DNR and FWS to identify areas for detailed surveys and discuss Best Management Practices to minimize indirect impacts. |

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| 62 | DNR-Oct2020 | Where the Jl-01 through Jl-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. | Understood. All ESC requirements established for the project will be adhered to. |
| 63 | DNR-Oct2020 | 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. | Understood. Impacts to such RTE species will be avoided and minimized as design progresses. BWRR will coordinate further with DNR and FWS to identify areas for detailed surveys and discuss Best Management Practices to minimize indirect impacts. |

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| 64 | DNR-Oct2020 | For the Alternatives J-01, J-04, Jl-01, and Jl-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: | Understood. If the 198 TMF is retained, impacts to such RTE species will be avoided and minimized as design progresses. BWRR will coordinate further with DNR and FWS to identify areas for detailed surveys and discuss Best Management Practices to minimize indirect impacts. |
| 65 | DNR-Oct2020 | The limits-of-disturbance for this TMF also appears to encompass the location<br>of a Great Blue Heron colony that was documented in the floodplain of the Little Patuxent River. Construction here has the | Understood. If the MD 198 TMF is retained, all established BMPs associated with Blue Heron colonies will be adhered to. |
| | | 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 IA 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 !4 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<br>various state and federal regulations. | |

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| | | 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 lA mile protection area during the Great Blue Heron breeding season. | |
| 66 | DNR-Oct2020 | 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. | Understood. All ESC requirements established for the project will be strictly adhered to. |
| 67 | DNR-Oct2020 | 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. | Understood. Impacts to such RTE species will be avoided and minimized as design progresses. BWRR will coordinate further with DNR and FWS to identify areas for detailed surveys and discuss Best Management Practices to minimize indirect impacts. |

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| 68 | DNR-Oct2020 | The routes to the north -Alternatives JI-01 through JI-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. | Understood. As design progresses, avoidance and minimization of impacts to this oak forest community will be evaluated and implemented to maximum extent practicable. All ESC requirements will be adhered to during project construction. |
| 69 | DNR-Oct2020 | TMF between Odell Road and Powdermill Road J-03, J-06, JI-03 and JI-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. | Noted. BWRR will continue coordination with DNR as design progresses to ensure all such areas are identified and impacts minimized as applicable. |
| | | 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: | Understood. BWRR will comply with all Best Management Practices required to ensure all potential indirect impacts to this community are minimized. This includes adherence to all pending ESC requirements throughout the construction process. |
| | | 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 | Understood. As design progresses, avoidance and minimization of impacts to this pine-oak community will be evaluated and implemented to maximum extent practicable. |

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| 70 | DNR-Oct2020 | J-02, J-05, JI-02 and JI-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: | Understood. Avoidance and minimization of impacts to WSSCs and associated species will be implemented to the maximum extent practicable as the design progresses. |
| 71 | DNR-Oct2020 | 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 (Platantherablephariglottis 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: | Understood. Avoidance and minimization of impacts to WSSCs, RTEs, and other communities of concern will be implemented to the maximum extent practicable as the design progresses. BWRR will continue to coordinate with DNR throughout this process. |
| | | • Coastal Plain- Piedmont Acidic Seepage Fen (Nyssa sylvatica - (Pirns 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 | |

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| | | 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. | |
| 72 | DNR-Oct2020 | 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: | Noted. BWRR will continue coordination with DNR as design progresses to ensure all such areas are identified and impacts are minimized to the maximum extent practicable. |
| | | 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. | Noted. BWRR will continue coordination with DNR as design progresses to ensure all such areas are identified and impacts are minimized to the maximum extent practicable. |

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| | | 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. | Noted. BWRR will continue coordination with DNR as design progresses to ensure all such areas are identified and impacts are minimized to the maximum extent practicable. |
| | | 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. | Noted. |

**Comment Response Attachment**
**Expanded Responses to MDE Comment 6**

**MDE Comment 6:** *The proposed TMF options 4 and 5 have major permanent impacts to NTWSSC. TMF option 10A also has major impacts to nontidal wetlands. Please provide a functional assessment of the wetland communities associated with options 4, 5, and 10A, and provide justification for the impacts to the NTWSSC.*

Removal or fill within wetlands would result in an immediate and permanent removal of habitat, potential hydrologic disconnection, and alter the functions and values of the systems. The functions and values that may be altered include:

- A direct removal or change in habitat which may indirectly affect the species relying on the wetland for food, water, protection, and breeding.
- A direct removal or change in hydrologic functions may include a reduction in water storage capacity which may indirectly affect both surface water hydrology downstream and groundwater recharge and supply. This may also affect flooding patterns, and the ability to slow down flow velocities.
- A direct removal or fill within wetlands can directly affect the landscape's capacity to trap and filter sediments and pollutants, which may indirectly affect water quality.

The three TMF options would result in substantial impacts to forest, FIDS habitat, and SSPRAs.

- The BARC Airstrip TMF option would be the least impactful, with just under 100 acres of forest impact and approximately 93 acres of FIDS habitat primarily associated with the access ramps.
- BARC West and MD 198 would each impact over approximately 150 acres of forest and FIDS habitat.
- For SSPRAs, the MD 198 TMF would result in the fewest impacts at 59 acres, and BARC West would result in the greatest impacts at 157 acres.

**MD 198 TMF site (Option #10A)**

- Stronghold Watershed
- Largest systems present:
  - >23 acres of WP239A/B/C
  - >8 acres of WP170 (both by Alts J and J1)
  - Full takes from TMF footprint
- >5 additional acres of additional impact associated with J1 for ramps
- Principal functions and values (in **bold**) identified within these wetlands with dominant functions and values listed below:
  - **Groundwater Recharge/Discharge**
  - **Floodflow Alteration**
  - **Sediment/Toxicant Retention**
  - **Nutrient Removal**
  - **Wildlife Habitat**
  - Significantly large wetland systems present not fragmented by development
  - Significant flood storage potential
  - Border to perennial system – Little Patuxent River and within floodplain
  - Upland area immediately surrounding wetlands are largely undeveloped and bordered by upland wildlife habitat, wildlife food sources, and access to nearby wetlands

  - Existing opportunity for sediment trapping by slow moving water or deepwater habitat, from potential sources of excess sediment and nutrients present in the watershed above the wetland
  - Includes marsh and wooded swamp
  - High density and diversity of vegetation and presence of vegetative classes, also provides opportunity for sediment trapping and nutrient utilization
  - High population potential for insects, amphibian populations, and avian species
  - High potential for sediment trapping, water retention, and nutrient utilization
  - Suitable functions and values also include educational/scientific value and uniqueness.

- DEIS Section 4.10.4.2 and NETR Section D.7.4.2:
  - The TMF site slopes downward toward the Little Patuxent River to the north and east. Current design indicates the need to provide up to 154 feet of fill to raise the site to a level grade. The fill would be supported by perimeter retaining walls. This results in a significant change to the landscape and to the drainage pattern of the adjacent Little Patuxent River and its upstream and downstream tributaries. This facility is located less than one-half mile upstream from the PRR, and with the added impervious surface, fill within the floodplain and wetlands, and loss of forest canopy, it is expected to indirectly affect resources located within PRR.
  - The TMF site would convert approximately 177 to 198 acres of undeveloped land to new impervious surface. With the changes to the landscape proposed for grading and the removal of vegetation and habitat at the MD 198 TMF, it is anticipated that water quality within the Little Patuxent River and tributaries would be impaired as a result.
  - The MD 198 TMF would have the greatest floodplain impact of the three TMF options, between 31 and 39 acres of permanent disturbance along the Little Patuxent River due to new impervious surface. These impacts are associated with the TMF footprint, viaduct, and the MOW ramp. The TMF overlaps the Little Patuxent River and would require a substantial amount of fill material within the 100-year floodplain. This area is currently subject to routine flooding that impacts vehicular traffic. Impacts to the Little Patuxent River would include a decrease in the flood storage capacity and toxicant filtering functions and increase risks for erosion in this location.

- DEIS Section 4.11.4.2 and NETR Section D.8.4.2:
  - The direct and permanent wetland impacts as a result of this TMF would significantly alter habitat, including sensitive species habitat and potential RTE species, water quality, flood storage, and drainage patterns of the Little Patuxent River Watershed.

- DEIS Section 4.12.4.2 and NETR Section D.9.4.2:
  - The MD 198 TMF would convert a large area of vegetated habitats, wetlands, and waterways within the SSPRA and upstream of the Little Patuxent NTWSSC into permanent surface features, resulting in the risk for habitat removal and localized species eradication. Direct impacts to the Little Patuxent River may threaten populations of RTE fish and odonate species. MDNR indicates the location of a GBH colony overlapping with the LOD of this TMF.

**BARC East (Airstrip) TMF site (Option #4)**

- Tier II Watershed
- Largest systems present:
    - WP300A >7ac NTWSSC spanning Beaverdam Creek
    - Direct impact within TMF footprint
- Several delineated 0.5-1.5-acre portions of larger NTWSSC systems traversed for ramps to TMF
- Principal functions and values (in **bold**) identified within these wetlands with dominant functions and values listed below:
    - **Floodflow Alteration**
    - W**ildlife Habitat**
    - **Endangered Species Habitat**
    - Densely forested NTWSSC wetland providing riparian stream buffer surrounding perennial Beaverdam Creek and multiple tributaries
    - Wetlands located within headwater areas and upper portion of watershed
    - Relatively flat area and receives and retains overland flow from surrounding uplands
    - Wetland systems not fragmented by development and connected with other wetland systems connected by Beaverdam Creek tributaries (shallow permanent open water)
    - Upland area immediately surrounding wetlands are largely undeveloped and bordered by upland wildlife habitat, wildlife food sources, and access to nearby wetlands
    - High density and diversity of vegetation, presence of vegetative classes/community structure
    - High population potential for insects, amphibian populations, and avian species
    - Known to contain RTE species
    - Suitable functions and values also include sediment/toxicant retention, nutrient removal, sediment/shoreline stabilization, educational/scientific value and uniqueness.

- DEIS Section 4.10.4.2 and NETR Section D.7.4.2:
    - The BARC Airstrip TMF would add approximately 188 to 193 acres of new impervious surface and impacts to Beaverdam Creek and tributaries, most notably within its headwaters. FRA anticipates that stream relocations and/or creation of large culverts would be required for these streams, including the headwaters. Beaverdam Creek (part of the Anacostia watershed) was the only major waterway identified within the SCMAGLEV Project Affected Environment as having good health indices based on MBSS data. With direct and permanent impacts to its headwaters proposed there is the potential that the health of this waterway would decline, potentially resulting in inclusion on 303(d) listed waters.

- DEIS Section 4.11.4.2 and NETR Section D.8.4.2:
    - Build Alternatives that include the BARC Airstrip TMF option would result in more than two times the permanent NTWSSC impacts as compared to the other eight Build Alternatives.
    - The BARC Airstrip TMF would result in 13 to 14 acres of permanent wetland impacts, which includes the most permanent NTWSSC impacts (11 to 12 acres).

- DEIS Section 4.12.4.2 and NETR Section D.9.4.2:
    - The area of the BARC Airstrip TMF also falls within the drainage area of another NTWSSC near Telegraph Road, which supports three RTE odonate species.

- Although the BARC Airstrip may result in 50 to 60 percent fewer acres of forest and FIDS habitat removal, this TMF option would result in the largest impact to the Beaverdam Creek NTWSSC, including disruption to the system's forested headwaters with new developed impervious surface.
- Construction of both BARC TMFs would have similar effects on the Beaverdam Creek NTWSSC, globally rare natural communities, unique forest communities supporting pitch pine and dwarf chinquapin oak, and associated RTE species and GBH colonies. The BARC Airstrip TMF could result in greater threat to species as it impacts the headwaters to this waterway and its associated wetland and riparian habitat buffers.
- Groundwater and surface water changes, sedimentation, and nutrient runoff resulting from project elements may degrade suitable habitat for populations of White Fringed Orchid and acidic seepage fen and swamp communities, which are highly sensitive to these types of disturbances.

**BARC West TMF site (Option #5)**

- Tier II Watershed
- Largest systems present:
  - WP234 >4ac
  - Direct impact within TMF footprint
- Principal functions and values (in **bold**) identified within these wetlands with dominant functions and values listed below:
  - **Sediment/Toxicant Retention**
  - **Nutrient Removal**
  - **Wildlife Habitat**
  - Existing opportunity for sediment trapping by slow moving water or deepwater habitat, from potential sources of excess sediment and nutrients present in the watershed above the wetland
  - Long duration water retention time.
  - High density and diversity of vegetation and presence of vegetative classes
  - High potential for sediment trapping, water retention, and nutrient utilization and attenuation
  - Wetland systems not fragmented by development and connected with other wetland systems connected by Beaverdam Creek tributaries
  - Upland area immediately surrounding wetlands are largely undeveloped and bordered by upland wildlife habitat, wildlife food sources, and access to nearby wetlands
  - High density and diversity of vegetation, presence of vegetative classes/community structure
  - High population potential for insects, amphibian populations, and avian species
  - High percentage of energy-absorbing emergent and/or shrubs bordering the waterway
  - Suitable functions and values also include floodflow alteration and sediment/shoreline stabilization.

- DEIS Section 4.10.4.2 and NETR Section D.7.4.2:
  - BARC West TMFs would add approximately 187 to 190 acres of new impervious surface and impacts to Beaverdam Creek and tributaries.
  - FRA anticipates that stream relocations and/or creation of large culverts would be required for these streams, including the headwaters. Beaverdam Creek (part of the

Anacostia watershed) was the only major waterway identified within the SCMAGLEV Project Affected Environment as having good health indices based on MBSS data.
    - The BARC West TMF would have the least impact to floodplains of the TMF options.

- DEIS Section 4.11.4.2 and NETR Section D.8.4.2:
    - BARC West would result in 10 acres of permanent wetland impact, which includes two to three acres of permanent NTWSSC impacts.

- DEIS Section 4.12.4.2 and NETR Section D.9.4.2:
    - In the area of the BARC West TMF, MDNR has identified two RTE plant species, white fringed orchid (*Platanthera blephariglottis* var. *blephariglottis*) and northern pitcher-plant (*Sarracenia purpurea*), both associated with high quality wetlands. This area also supports the American brook lamprey and three RTE odonate species.
    - Fill within or adjacent to the North Branch of Beaverdam Creek associated with the BARC West TMF could result in degradation of aquatic and riparian habitat sufficient to disrupt the local occurrence of American brook lamprey.
    - Groundwater and surface water changes, sedimentation, and nutrient runoff resulting from project elements may degrade suitable habitat for populations of White Fringed Orchid and acidic seepage fen and swamp communities, which are highly sensitive to these types of disturbances.