AVOIDANCE AND MINIMIZATION OF IMPACTS

During the planning and design phases for Phase II of the I-95 ETL Northbound Extension Project, the Maryland Transportation Authority (MDTA) has made several high-level design choices to avoid and minimize impacts to wetlands and streams. These choices include the following:

- The proposed Intelligent Transportation System (ITS) fiberoptic cable installation will occur parallel to I-95 between the guardrail and the light poles to the maximum extent practicable, where the least natural resources are present;
- Retaining walls have been incorporated (where practical) to reduce slope impacts;
- Side slopes are being designed at 2:1 in areas of fill and 2.5:1 in areas of cut;
- Roadway shoulders have been reduced in width from the AASHTO preferred width to the AASHTO minimum width;
- Impacts to high quality wetlands are being avoided where possible through redesign of stormwater management, environmental site design (ESD), and highway facilities; and
- Where practicable, impacted streams will be relocated to newly established toes of slopes; so far, three streams have already been identified as candidates for relocation.

These design choices allow MDTA to meet the project purpose and need while attempting to minimize impacts to adjacent resources to the maximum extent practicable, given the preliminary nature of the design. Additional avoidance and minimization efforts beyond what has already been incorporated will be required of segment designers as the project moves forward into final design.

MDTA met with designers to identify additional opportunities to avoid and minimize impacts after the initial May 1, 2019 submission of the Joint Permit Application. As a result of this exercise, as well as subsequent avoidance and minimization as design has progressed, roadway improvement impacts to wetlands have decreased by 33,118 square feet for USACE-jurisdictional wetlands and 33,289 square feet for MDE-jurisdictional wetlands. Roadway improvement impacts to streams have decreased by 4,086 linear feet for USACE-jurisdictional streams and 3,683 linear feet of MDE-jurisdictional streams.

For contracts KH-3019, KH-3020, and KH-3021, the LOD was pulled in where possible to avoid resources. Significant impact reductions were also accomplished by shifting the KH-3020 roadway alignment into the median rather than widening to the outside as well as increasing the slope of proposed embankments to 2:1 wherever possible. The LOD for this contract also previously extended to the right-of-way, since the final location of the noise wall was not yet known. In the revised plates, an estimated location of the noise wall is shown, with a worst-case but realistic LOD developed based on this location. Final location of the noise wall will be determined based on detailed analysis. In addition, since the previous JPA submittal was made in August 2019, a compound curve alignment was selected for the KH-3020 road widening, in part because it requires less grading along the shoulder of the existing roadway, reducing impacts to multiple roadside systems.

Contract designers also identified several opportunities for relocating impacted streams to the new toe of slope, allowing the impacts to be replaced on-site, in-kind. These relocations are still being counted as impacts but are considered self-mitigating. The following stream relocations are anticipated:

- KH-3019, Plate 10 – 261 LF of perennial WUS 25A
- KH-3019, Plates 11-12 – 597 LF of intermittent WUS A-17
- KH-3019, Plates 17-19 – 517 LF of perennial Waters G
- KH-3019, Plates 34-35 – 480 LF of perennial Waters B
- KH-3020, Plate 15-16 – 472 LF of intermittent WUS G-18A
- KH-3020, Plate 16 – 104 LF of intermittent WUS G-18B
- KH-3023, Plate 2 – 262 LF of intermittent WUS F-2

The majority of the proposed impacts are to low or moderate quality resources and are associated with: required stormwater management practice (which will ultimately improve conditions within adjacent resources that currently receive largely unattenuated stormwater runoff from I-95); Park and Ride facilities on MD 152 and MD 24; noise walls required to mitigate noise impacts to adjacent communities; and proposed widening along I-95 between MD 152 and Bynum Run.

The impacts between MD 152 and Bynum Run are primarily located along the outside of northbound I-95 as a result of the widening; however, widening to the inside will occur where possible to minimize impacts to resources. In many areas, inside widening is not practicable due to site constraints and drainage conflicts. In areas of widening to the outside, drainage features will be relocated to the new toe of slope where practicable. Additional impacts are occurring due to the partial reconstruction of the MD 152 and the MD 24 interchanges. To minimize stream impacts, oversized headwalls are proposed to reduce the length of the culvert extensions. The design team also proposes utilizing the steepest slopes allowable on the backside of required ESD facilities to reduce wetland impacts and soil disturbance.

Due to the early stage of design, the proposed impacts are conservative, and all considered to be permanent at this time. As designs of individual contracts progress, these impacts will be refined and further reduced to the maximum extent practicable. Several additional avoidance and minimization measures are being investigated and will be implemented where feasible, including the additional use of retaining walls, directional drilling of the fiberoptic line beneath streams and wetlands, and on-site, in-kind replacement of roadside stream ditches.