

3.0 Environmental Information

Preliminary investigations into watercourse impacts and related permits are shown below. Additional detailed environmental investigations will be required during the design process.

3.1. Environmental Site Assessment

3.1.1 Surface Waters

The NYSDEC Environmental Resources Mapper (“ERM”) was queried to determine what mapped surface waters may be encountered along the project corridor. The following stream resources were identified as crossing the trail corridor, and are presented from west to east below, starting at the trail terminus at Belleayre:

- ▶ Tributary of Birch Creek (Crystal Spring Brook - Waters Index No. H-171-52-4) – Class B with B(T) standards
- ▶ Tributary of Crystal Spring Brook (Waters Index No. H-171-52-4-1) – Class C with C Standards (Crossed twice – once at Mill Street/Woodchuck Hollow and then once just beyond Bonnie View Ave)
- ▶ Tributary of Birch Creek (Giggle Hollow Brook - Waters Index No. H-171-52-3) – Class B with B(T) standards
- ▶ The Esopus Creek (Waters Index No. H-171) – Class C with C(TS) standards

There are no NYSDEC mapped wetlands located within 500 feet of the project corridor.

National Wetland Inventory (NWI) mapping was reviewed to determine the likelihood of encountering federally jurisdictional wetlands within the proposed project limits. NWI mapping identified NYSDEC mapped streams as riverine systems. Additionally, two palustrine forested wetland complexes are shown along the Esopus Creek near Big Indian Park and immediately south of the existing U&D corridor.

A site visit was completed by B&L environmental staff on October 5, 2020 to determine the presence or absence of wetlands and watercourses within the project corridor. The boundary of one wetland identified during this site walkover was delineated in accordance with the criteria defined in the 1987 US Army Corps of Engineers’ (USACE) Wetland Delineation Manual and its 2012 Northeast/North Central Regional Supplement. Additionally, 11 stream resources were identified crossing the project corridor. Details of these surface watercourses are provided below in the Streams Section.

Wetlands

The one wetland identified in the project corridor (Wetland A) is located along Stream 1, which is an unmapped perennial stream feature that outlets to a tributary of Emory Brook (NYSDEC Waters Index No. D-70-80- P 368g). This palustrine emergent wetland met several hydrology indicators: high water table (A2), saturation (A3), water-stained leaves (B9), shallow aquitard (D3), and the FAC neutral test (D5). Hydrophytic vegetation in the herbaceous layer was dominated by purple loosestrife (*Lythrum salicaria*), an obligate wetland indicator plant species, which satisfied the rapid test and dominance test with 100% hydrophytic plant species. The hydric soil indicator redox dark surface (F6) was satisfied. The Wetland A data sheet is provided in Attachment X. This wetland qualifies for federal protection under the Clean Water Act as a Water of the United States (WOTUS) due to its hydrologic connection to the East Branch of the Delaware River, a Traditionally Navigable Water (TNW), through Emory Brook. It does not meet the definition of a regulated wetland per NYSDEC regulations.

Streams

- ▶ Stream 1: channel width of 12" – 16" and a water depth of approximately 3" – 4" at the time of the site visit. Wetland A is south of and hydrologically connected to Stream 1. The ordinary high water elevation (OHWE) of the stream was approximately 6" above base streambed elevation and the substrate was silt. Stream 1 flows through a culvert beneath Galli Curci Road to a NYSDEC mapped Emory Brook tributary (D-70-80-12-4), which is a Class B stream with B Standards.
- ▶ Stream 2: Stream 2 had a channel width of 10' and a water depth ranging from 3" – 14" at the time of the site visit. The OHWE was observed at approximately 6" above base streambed elevation, and the substrate consisted of boulder and cobble. Stream 2 corresponds with the NYSDEC mapped stream tributary of Birch Creek (Crystal Spring Brook - Waters Index No. H-171-52-4), which is a Class B stream with B(T) standards.
- ▶ Stream 3: Stream 3 had a channel width of 3' and a depth of 2" – 4" at the time of the site visit. The OHWE was approximately 5" above base streambed elevation, and the substrate was silt and cobble. Stream 3 originates from a steep embankment above the railroad to the south, and flows downhill into Stream 4.
- ▶ Stream 4: Stream 4 had a channel width of 6' – 8' and a water depth ranging from 2" – 6" at the time of the site visit. A large pool, approximately 15' across, was present downstream of a double culvert from an impoundment. The OHWE was approximately 5" above base stream elevation, and the substrate was cobble and boulder. Stream 4 corresponds with the NYSDEC mapped Crystal Spring Brook tributary (Waters Index No. H-171-52-4-1), which is a Class C stream with C Standards.
- ▶ Stream 5: Stream 5 had a channel width of 10' and a water depth between 0.5" and 2" at the time of the site visit. The OHWE was observed at 4" above base streambed elevation, and the substrate consisted of boulders. Stream 5 corresponds with the NYSDEC mapped Crystal Spring Brook stream tributary (Waters Index No. H-171-52-4-1), which is a Class C stream with C Standards.
- ▶ Stream 6: Stream 6 had a channel width of 3' with a 0.5" – 1" water depth at the time of the site visit. The OHWE was approximately 3" above base streambed elevation with silt/cobble substrate.
- ▶ Stream 7: Stream 7 had a channel width of 15' – 20' with a water depth of 4" – 12" at the time of the site visit. The OHWE was approximately 3" above base streambed elevation with a cobble/boulder substrate.
- ▶ Stream 8: Stream 8 had a channel width of 3' – 5' with a water depth of 2" with pools up to 14" at the time of the site visit. The OHWE was approximately 5" above base stream elevation. Stream 8 corresponds to a mapped NYSDEC Birch Creek tributary (Giggle Hollow Brook - Waters Index No. H-171-52-3), which is a Class B stream with B(T) standards with a cobble/boulder substrate.
- ▶ Stream 9: Stream 9 had a Channel width 1-3" with minimal water flow (less than 1/2" depth) at the time of the site visit. The OHWE was observed at 5" above streambed base elevation with cobble/gravel substrate.
- ▶ Stream 10: Stream 10 had a channel width of 6' – 10', narrowing to 3' at the culvert under the rail line at the time of the site visit. The water depth was of 0.5 – 2" and the OHWE was observed approximately 2" above base streambed elevation. The substrate consisted of cobbles and gravel.
- ▶ Stream 11: Stream 11 at Big Indian Park had a channel width of 5' – 12' and a water depth of 2" – 6" at the time of the site visit. The OHWE was observed at 5 – 7" above the streambed elevation with a cobble/gravel substrate. A large scour pool with a depth of 5' – 6' and a cobble/boulder substrate was observed near the west bank at the bridge replacement location with. Stream 11 corresponds with the mapped NYSDEC Esopus Creek (Waters Index No. H-171), which is a Class C stream with C(TS) standards.

3.1.2. Historic and Cultural Resources Coordination

A review of the New York State's Office of Historic Preservation's ("SHPO") Cultural Resource Information System ("CRIS") was completed. The trail terminus at Highmount is located in an archaeological sensitive area. Additionally, the corridor abuts the Pine Hill Historic District (National Registration Identification: 11NR06297). The corridor contains several features which could be considered historic such as the bridge structures, the foundation remains, and the corridor itself. A query was submitted through the CRIS system to initiate coordination with SHPO on December 7, 2020. A response from SHPO indicated that coordination with their agency cannot progress further until the SEQR process and a Lead Agency for the project has been established or coordination with a permitting agency requiring SHPO coordination such as NYSDEC or USACE has begun. This project is listed as 20PR07733 in the CRIS database and coordination should be continued upon one of their criteria for further coordination be met. Until that time, this project will remain open within the CRIS system.

3.1.3. Threatened and Endangered Species and General Habitat

Federally Protected Species

The United States Fish and Wildlife Service's (USFWS) New York Field Office's website was reviewed to determine whether any federally listed endangered, threatened, or candidate species are reported to inhabit the project corridor. The USFWS' Information for Planning and Consultation (IPaC) System (USFWS, 2018) reported no federally threatened species. The species resource list from the IPaC query is provided in Appendix B. It is important to note that this resource will need to be re-queried in final design to ensure compliance with the ESA.

New York State Protected Species

A query of the NYSDEC (2018) Nature Explorer website indicated the eastern terminus of the corridor is located in the vicinity of a Natural Community (Beech-maple mesic forest and Hemlock-northern hardwood forest) and Rare Animals not specifically listed by NYS. A copy of the ERM results is provided in Attachment B.

The New York Natural Heritage Program was contacted for information regarding the reported presence of any state-listed endangered species, threatened species, species of special concern, or significant natural communities within or adjacent to the project corridor. A response received on November 20, 2020 indicated that there are no records of state-listed threatened or endangered species for the project corridor. However, a rare beetle, the Appalachian tiger beetle (*Cicindela ancocisconensis*), was documented approximately 0.25 miles south of where the project is proposed to cross the Esopus Creek. It is recommended that impacts to the Esopus Creek be avoided, including from runoff and erosion, to protect the habitat for this species. The Appalachian tiger beetle can be found in Erie, Wyoming and Livingston counties in western New York; Ulster, Sullivan and Greene counties in the Catskills region; and Essex and Warren counties in the eastern Adirondacks. The species is riparian and is found in forest edge streams and prefers to inhabit gravel bars and shaded sand beaches.

Covertypes

The covertypes of the project corridor were also characterized during the site visit.

The corridor is predominantly forested with mature trees including hop hornbeam (*Ostrya virginiana*) ranging from 6-12" diameter at breast height (DBH), American basswood (*Tilia americana*) ranging from 4-6" DBH, black cherry (*Prunus serotina*) ranging from 12 – 14" DBH, white ash (*Fraxinus americana*) ranging from 12 – 16" DBH, sugar maple (*Acer saccharum*) ranging from 8 – 24" DBH, eastern hemlock (*Tsuga canadensis*) and white pines (*Pinus strobus*) ranging from 4" – 24" DBH, with striped maple (*Acer pensylvanicum*) and beech (*Fagus americana*) saplings (<1" DBH) scattered throughout. Witch hazel (*Hamamelis virginiana*) was also present with DBH of 1" – 5".

It is recommended that tree removals be limited to those necessary to ensure proper safety of the trail corridor to preserve the natural communities the corridor passes through. Additionally, all stream work should be completed in accordance with all State and Federal regulations to minimize impacts to these communities and the fauna which inhabit them, including the Appalachian tiger beetle and aquatic organism populations.

3.1.4. Floodplain Analysis

A portion of the corridor surrounding the Esopus Creek is mapped within a Federal Emergency Management Agency (FEMA) 100-year floodplain. Work within this floodplain should be carefully analyzed and fully vetted with the County and the Town of Shandaken. The Town has seen an increase of severe flooding events in the past few decades and the effects of global warming on the frequency of large storm events has been well documented. Designs within the Esopus Creek floodplain should take into consideration the impacts of global warming and the most recent and up to date NYSDOT Bridge design standards and recommendations for new structures within the floodplain.

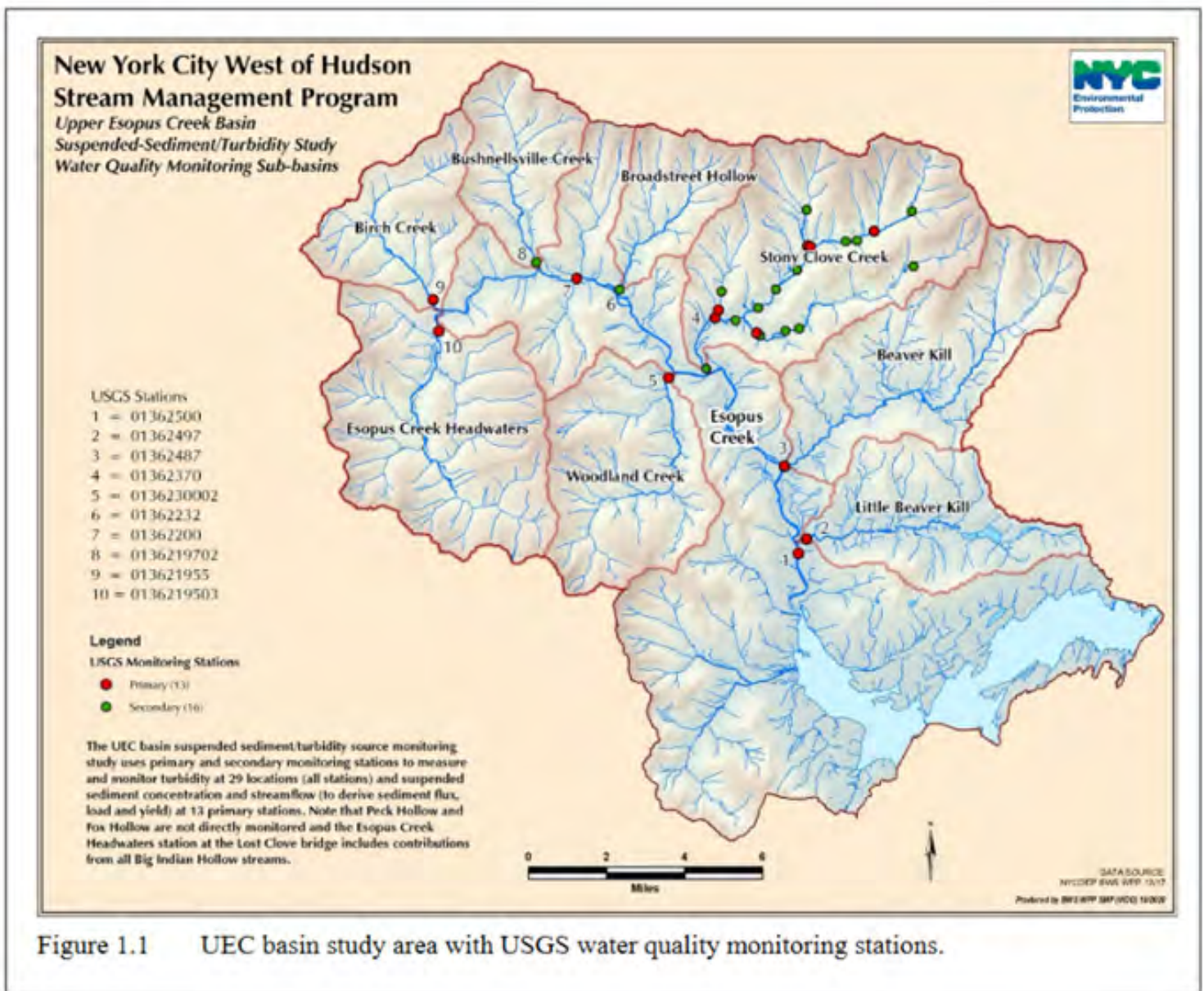


Figure 1.1 UEC basin study area with USGS water quality monitoring stations.

Figure 3-1: NYC DEP Stream Management Program Map & Monitoring Stations

In addition to the Esopus Creek, the Alton Creek (outflow of the Belleayre Mountain snow making pond) and a tributary to the Alton Creek are both FEMA mapped regulatory floodways. The existing and proposed culverts below the trail should be fully analyzed during the design process to determine their existing hydraulic capacity to withstand future flooding events and assess potential improvements to provide improved flood resiliency and longevity of the trail system.

All work within the mapped floodplains should be coordinated with the Town of Shandaken as a floodplain impact permit will be required for any work within the floodplains. Stormwater management needs to account for flood prone areas that receive runoff from the trail corridor. Pine Hill area and culverts should be considered in the overall plan to help mitigate flooding and may be eligible for funding.

The Upper Esopus Creek Watershed Turbidity/Suspended Sediment Monitoring Study: Biennial Status Report was completed by NYC DEP in March 2021 and identifies the project area and associated streams, such as the Birch Creek and Esopus Creek as high gradient/high energy mountain streams. Monitoring stations within the system collect stream data such as flow and turbidity and may be useful to develop a hydraulic analysis during the design of the project. The development of the U&D Trail project should be coordinated with this study and subsequent analyses, such as the Pine Hill Flood Analysis Study, to also provide benefits “downstream” of the project area. The following figure is an excerpt from the report and gives an overview of the study area.

3.1.5. Hazardous materials

It is anticipated that hazardous materials may be encountered along the corridor due to its previous use as a railroad. As such, B&L anticipates the need to sample soils at various locations throughout the corridor to characterize and determine the need for disposal in accordance with State and Federal regulations.

Sampling of composite samples should be spaced throughout the corridor, with focus being on areas where large amounts of fill may be disturbed. The samples should be submitted to a qualified lab for the analysis of semi-volatile organic compounds (SVOCs) using EPA Method 8270D, PCBs using EPA Method 8082A, and RCRA Metals using EPA Method 6010B. Chemical parameter concentrations should be compared to the Part 375 Restricted Residential Use Soil Cleanup Objectives (SCOs).

In accordance with the provisions of NYCRR Part 360.13(c), the on-site reuse and/or disposal of the previously excavated and stockpiled soil material is deemed acceptable as long as the stockpiled soil is placed above the groundwater table and also covered with a minimum 12-inch thick layer of clean fill material or a layer of asphalt or other impermeable material. If possible, it is recommended that contaminated soils be reused on-site for grading purposes. However, should it be determined that any soil material is to be transported off site, additional analytical testing (Toxicity characteristic leaching procedure (TCLP) must be conducted in order to determine if the excavated soil material can be properly transported and disposed of at a permitted solid waste facility in accordance with State and Federal regulations.

3.2 Anticipated Permits

A permit from the USACE under Section 404 of the Clean Water Act will be required for stream or wetland disturbances by the project. In addition, an Article 15 permit would be required from NYSDEC for project work disturbing State-protected streams. All streams that are not mapped by the NYSDEC flow northward into mapped stream Birch Creek (H-171-52), parallel to NYS Route 28. Birch Creek flows into the Esopus Creek, a tributary of the Hudson River, a Traditionally Navigable Water. It is likely that these hydrologic connections qualify all identified stream resources as Waters of the United States (WOTUS). Jurisdictional determinations will be made under future permit assessment efforts, but final jurisdiction is determined by the USACE. It is anticipated that any impacts to these resources will be minimized and qualify for coverage under USACE Nationwide Permit (NWP) 14 for Linear Transportation Projects. Projects authorized in New York streams by the USACE under the NWP Program also require Water Quality Certification from NYSDEC under Section 401 of the Clean Water Act. Due to the classification of Streams 1, 2, 8, and 11, an Article 15 Stream Protection Permit would also be required from NYSDEC for any activities that would affect the bed or banks of these waterbodies. A detailed permit review will be completed during project design to confirm which permits would be required. Permit requests will be submitted to the USACE and NYSDEC using a Joint Application for Permit.

This section of the D&U railroad corridor falls within the New York City Watershed and drains to the Ashokan Reservoir, which is a terminal reservoir that supplies New York City with drinking water through a series of underground aqueducts. The New York City Department of Environmental Protection (“DEP”) manages this drinking water system which includes a series of regulations within the watersheds for their controlled reservoirs. This project will require the preparation of a SWPPP because the project will be disturbing more than one acre of land. This is also a requirement of the NYSDEC’s Statewide Pollution Discharge Elimination System (“SPDES”) permit. The SWPPP for this project will need to be submitted to DEP for their review and approval. However, no additional requirements beyond the NYSDEC requirements are expected from DEP for this project. The construction of bicycle and pedestrian path projects are exempt from the inclusion of post construction stormwater controls. The SWPPP prepared for this project will require erosion and sediment control practices such as silt fencing, fiber logs, temporary seed and mulch, and rolled erosion control blankets.

A Highway Work Permit will be required by the New York State Department of Transportation (“NYSDOT”) if work occurs within the NYSDOT Right of Way of State Route 28. In addition, a County Highway Work Permits or review may be necessary for work occurring within County roadway ROW. As mentioned in Section 3.1.4, a Town of Shandaken floodplain impact permit will be required for impacts to the floodplain.