The Ashokan Rail Trail

Towns of Hurley and Olive
Ulster County, New York

Phase 1:
Stormwater Pollution Prevention Plan

October 2017

Barton & Loguidice

Ashokan Rail Trail

Towns of Hurley and Olive
Ulster County, New York

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Stormwater Pollution Prevention Plan

October 2017

Prepared For:

Ulster County
244 Fair Street
Kingston, NY 12402

Prepared By:

Barton & Loguidice, D.P.C.
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Appendices

1.0 Site Evaluation, Assessment, and Planning

1.1 Project/Site Information

Project/Site Name:	Ashokan Rail Trail
Project Street/Location:	Basin Road to NY Route 28A
City/State/Zip:	Towns of Hurley, Olive and Woodstock, Ulster County, New York
County:	Ulster
Latitude/Longitude	Latitude: 41°58' N Longitude: 74°11' W

Method for determining latitude/longitude:

☐ USGS topographic map (specify scale: _____)
☐ NYSDEC Web Site
☐ GPS
☒ Other (please specify): ESRI ArcMap 10.2

Is the project/site located on Indian country lands, or located on a property of religious or cultural significance to an Indian tribe? ☐ Yes ☒ No

If yes, provide the name of the Indian tribe associated with the area of Indian country (including the name of Indian reservation if applicable), or if not in Indian country, provide the name of the Indian tribe associated with the property_____

Are you applying for permit coverage as a "federal operator" as defined in Appendix A of the 2012 CGP? ☐ Yes ☒ No

SPDES permit number: _____ (fill in number upon receipt of NYSDEC Acknowledgement letter)

1.2 Contact Information/Responsable Parties

Owner:	Ulster County Commissioner of Public Works 313-317 Shamrock Lane Kingston, NY Phone: (845) 340-3100
Project Manager:	Chris White Deputy Director Ulster County Planning Department 244 Fair Street, PO Box 1800 Kingston, NY 12402 Phone: (845) 340-3338
Stormwater Manager and SWPPP Contact:	Thomas C. Baird, P.E. Barton & Loguidice, D.P.C. 10 Airline Drive Suite 200 Albany, New York 12205 Phone: (518) 218-1801 Fax: (518) 218-1805 Email: tbaird@bartonandloguidice.com
Emergency 24-Hour Contact:	Ulster County Commissioner of Public Works 313-317 Shamrock Lane Kingston, NY Phone: (845) 340-3100

1.3 Nature, Description, and Sequence of Construction Activity

Introduction:

The proposed project will construct a recreational trail along the former Ulster & Delaware ("U&D") Railroad corridor extending 11.5 miles from approximately Basin Road in the Town of Hurley to NYS Route 28A in the Town of Olive (the "Ashokan Rail Trail"). The corridor is contains brush and low level vegetation and includes steel rail and deteriorated railroad ties and other miscellaneous railroad infrastructure that is still in place.

This Stormwater Pollution and Prevention Plan (SWPPP) is being submitted for **Phase 1** of the Ashokan Rail Trail Project and only covers the "deconstruction" phase, or the removal of tracks and trees along the existing railroad corridor. An additional full SWPPP covering the planned construction activities for Phase 2 will be submitted for approval for the subsequent phases of construction for the Ashokan Rail Trail project. The two (2) phases of construction are summarized below:

Phase 1

This phase of the project will involve the removal of the existing steel rail, ties, other steel hardware (spikes, plates, etc.), and fallen, dead, and stressed trees that may pose a hazard to trail users and the trail infrastructure. Vegetation and woody debris within the limits of the proposed trail (approximately 14' - 20' centered on the trail) will also be removed. Trees will also be cleared to construct the re-aligned portion of the trail avoiding Wetland O, the elevated Boiceville Trestle, and the new bridge which will daylight Butternut Creek. Specific trees were identified in the field and with GPS to quantify and mark for removal trees that may pose a hazard to the trail. In all, approximately 2,100 hazard trees were identified for removal during a delineation in August of 2017. In addition, the removal of approximately 200 trees and 1.9 acres of clearing will be necessary to construct the bridges and re-aligned segment highlighted above.

All steel railroad rails, creosote containing railroad ties and other related steel hardware (e.g., spikes and plates) will be completely removed from the project corridor and disposed of in an environmentally responsible manner. In many segments, woodchips and sections of felled trees will be left on site to decompose naturally in areas highlighted on the Tree Removal Plans. All

tree debris and remains will be completely removed from wetland and other sensitive areas as shown on the Tree Removal Plans.

Access during Phase 1 of the project will be from the existing NYC DEP reservoir and sportsman access gates designated on the Tree and Track Removal Plans, and from the two proposed trailhead locations near the Woodstock Dike, and Shokan Station (Jones Cove) along Route 28. These trailheads are being designed by NYC DEP and will be constructed separately. Stockpile areas will be limited to the future trailhead areas and potentially the access roads at Gate W-5 and W-7, if the contractor elects to store materials at these locations. Minimal stockpiling of equipment and materials may be allowed on the existing access roadways. The stockpile and access roadways will be monitored and assessed the same as the trail corridor and will conform to the applicable Erosion and Sediment control details outlined in the plans and Chapter 2 of this SWPPP.

Existing sensitive watercourses (streams and wetlands) identified by NYCDEP and B&L will be identified and marked with orange construction fencing or tape in the field prior to the beginning of tree and/or track removals. The contractor will have instructions to avoid these areas and not place or dispose of any materials in these areas as well. At a minimum, weekly inspections by a certified Erosion and Sediment Control inspector or a Professional Engineer will be held to ensure that these areas remain undisturbed. Erosion and Sediment Control measures will always be on site and at the ready for the contractor to deploy at a moment's notice. See Chapter 2 of this SWPPP for the required Erosion and Sediment Control Practices.

If the unanticipated disturbance of soil and other vegetation occurs during the track and tree removal phase, the areas shall be restored to their original condition and erosion and/or sediment controls will be applied where bare soil is at risk of erosion. Straw mulch will be the primary medium to stabilize bare soil and will be installed. Post removal of the existing railroad rails and ties, the contractor will regrade the existing ballast throughout to stabilize the former railbed.

Phase 1 is expected to begin in December 2017 and continue to early summer of 2018.

Phase 2

This phase of the project will consist of the trail construction, including construction of the trail and two bridges spanning the Butternut Creek and Esopus Creek. The trail will be constructed along approximately the same alignment as the existing rails and ties with only one major exception where the trail will be re-routed approximately 800 ft. to avoid B&L delineated Wetland O. The trail was also shifted approximately 3 to 4 ft. from the track centerline in several locations to minimize and avoid any impacts to sensitive watercourses (streams and wetlands). The trail will be constructed on the former railbed and will utilize the remaining ballast as a base course with additional stone added (typically 10" thick) and spread and leveled to provide additional base and a top course for the trail. Drainage patterns and characteristics will generally remain the same as the pre-construction conditions with a few exceptions. The permanent trailheads are proposed for the western end of the project at Route 28A, at the Shokan Station stockpile area and the Woodstock Dike Stockpile area and will be constructed at a later date as part of separate DEP projects. The trailheads will be established in the aforementioned stockpile and staging areas utilized by the contractor for this phase.

Phase 2 will also include the removal of the failed Butternut Creek Culvert, which will be replaced with a new bridge, and the reconstruction of a bridge crossing at the Esopus Creek at the site of the destroyed Boiceville Trestle. The Butternut Creek Culvert will be removed completely and replaced with an approximately 75' long pre-fabricated truss bridge placed on short abutments. This configuration will allow the Butternut Creek to be "daylighted," which will restore the natural flow of the Creek and significantly increase the hydraulic capacity of the crossing. The destroyed four-span Boiceville Railroad Trestle will be replaced with a three-span steel girder bridge that will be rated for trail use and emergency vehicle use only. The bridge design will be such that the 50 year flood event will pass under the bridge with two (2) additional feet of clearance (freeboard), and will be able to withstand the 100 year storm event without failure or inundation. The corridor's network of existing concrete, cast iron, and steel culverts will typically remain "as-is" except for cleaning and minor structural repairs. A few of the existing culverts have deteriorated beyond repair and will be replaced completely. The culverts to be replaced consist of culverts that are shallow when compared to the trail surface (approximately 5 ft. or less below the trail.) Stone aprons designed to reduce

stormwater energy and velocity and dissipate runoff into a sheet flow condition will be installed as needed at the outlet and in some cases the inlet of some culverts. The stone aprons will also fill in scour holes that have formed over the years and will reduce the likelihood of a catastrophic culvert failure. This work is detailed in the Final Trail Construction Plans, which will be included in the phase 2 SWPPP.

Construction access during Phase 2 of the project will be the same as from Phase 1 of the project with the addition of a staging area at Route 28A. This staging area will serve the construction of the new Boiceville Bridge and the western segment of the trail. Access for Phase 1 will be from the existing NYC DEP Reservoir and sportsman access gates designated on the plans, and from the three proposed trailhead locations near the Woodstock Dike, and Shokan Station (Jones Cove) along Route 28. These trailheads are being designed by NYC DEP and will be constructed at a later date. Stockpile areas will be limited to the future trailhead areas and potentially the access roads at Gate W-5 and W-7, if the contractor elects to store materials at these locations. Minimal stockpiling of equipment and materials may be allowed on the existing access roadways. The stockpile and access roadways will be monitored and assessed the same as the trail corridor and will conform to the applicable Erosion and Sediment control details outlined in the plans and Chapter 2 of this SWPPP. Upon completion of the project, sportsman access to the corridor will remain the same and dedicated parking spaces will be allotted at each trailhead.

Phase 2 is expected to begin in the summer of 2018 and extend into the spring of 2019.

In addition to this project, separate projects sponsored by NYCDEP will consist of the construction of the permanent trailheads at Boiceville (western terminus), Shokan Station (middle of trail) and at the Woodstock Dike (eastern Terminus). The Boiceville trailhead is being developed and constructed at the completion of the CAT-252 project, which is the replacement of the 5 arches bridge spanning the Esopus Creek in Boiceville. The project will re-align Route-28A to the south and will construct 2 new bridges, one spanning the Esopus Creek and the other spanning the future trail. The Boiceville trailhead is not expected to begin construction until 2020.

Location Maps:

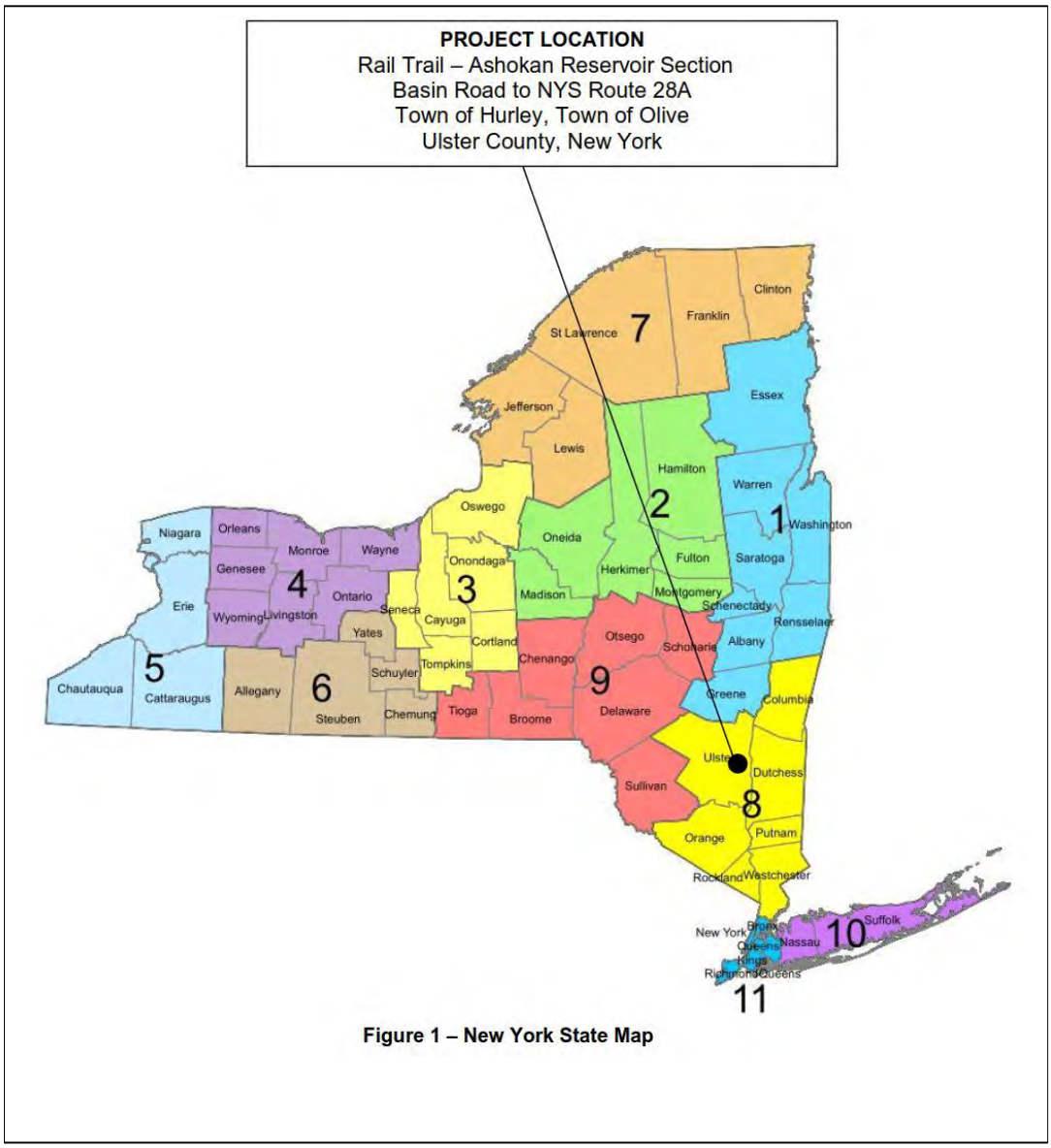


Figure 1 – New York State Map

PROJECT LOCATION
Ulster County Rail Trail Project – Ashokan Reservoir Section
Basin Road to NYS Route 28A
Town of Hurley, Town of Olive
Ulster County, New York

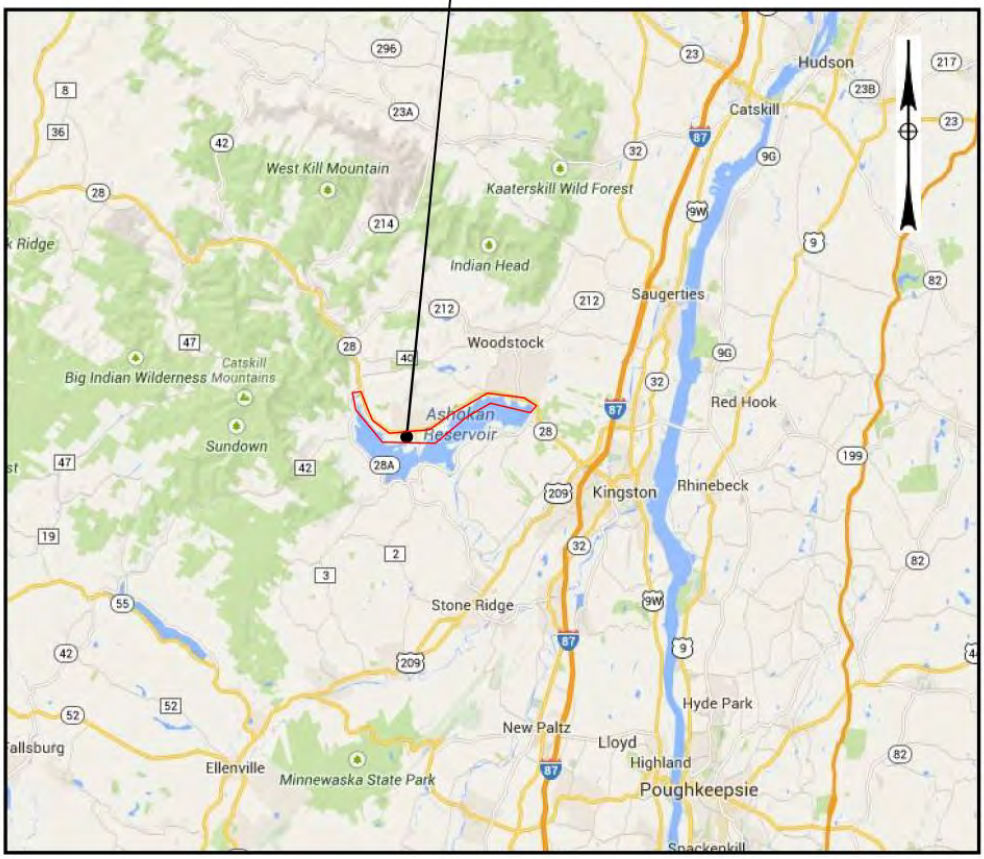


Figure 2 – Project Location Map

PROJECT LOCATION
Ulster County Rail Trail Project – Ashokan Reservoir Section
Basin Road to NYS Route 28A
Town of Hurley, Town of Olive
Ulster County, New York

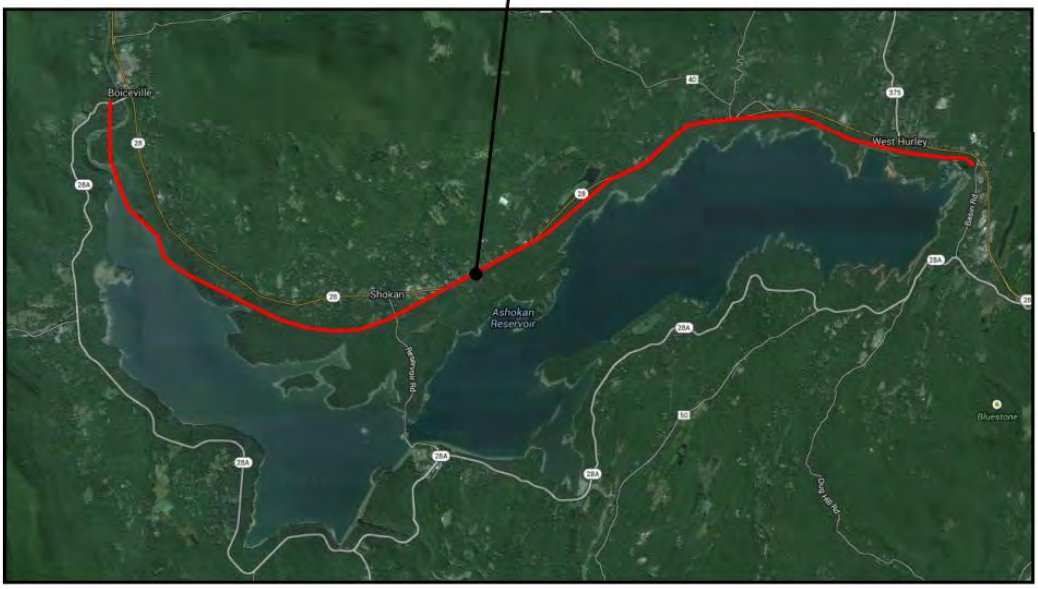


Figure 3 – Project Corridor Map

Suggested Sequence of Construction:

Phase 1 - Track, Tie, and Tree Removal

1. Obtain plan approval and applicable permits.
2. Secure a qualified contractor to complete the work.
3. Hold a preconstruction meeting at least one (1) week prior to starting construction. Erosion and Sediment Control Training for the contractor will take place during this meeting by a NYS Licensed PE with significant erosion and sediment control training and practical application experience.
4. Field delineation and marking of the sensitive areas the contractor shall avoid during this phase.
5. Mobilize to site. Layout established limits of work and buffer areas and laydown areas prior to starting construction.
6. Install erosion and sediment control measures in preparation of the construction. Please note that the project will move along in stages and erosion and sediment control practices will be mobile as well. They will be approved prior to land disturbance throughout the project and in any staging areas.
7. Clear trees, stumps, and all undergrowth to accommodate rail and tie removal and to remove dead, diseased and fallen trees. Excavate all unsuitable material, such as organic soils and dispose of at a waste management facility permitted to take the ties and dispose of soil with creosote material.
8. Remove rails, ties, trees and associated infrastructure.
9. Grade and stabilize the remaining stone ballast.

10. Remove any installed temporary erosion and sediment control measures as the work moves along and as long as the remaining stone ballast is stabilized.

See notes below for further information.

Attention Contractor:

- This project will not consist of large areas of exposed earth. This SWPPP and the contract plans identify and detail methods, materials, and means to controlling erosion and sediment during construction and prior to site stabilization suitable for this specific project. These should be utilized unless directed by the Engineer. The application of the measures will vary greatly from location to location will need to be applied to each specific situation using the details in the plans or slightly modified to meet the intent of the measure.
- The Contractor shall also demonstrate to the engineer and project owner proficiency in the application and understanding of Erosion and Sediment Control measures. The Owner and Engineer will work with the Contractor to ensure the ultimate goal of protecting waters and downstream infrastructure is achieved.
- The Owner or the Owners representative reserves the right to shut down project operations if a significant threat (as determined by the Owner) to the downstream infrastructure, or the surrounding environment is identified as part of the Contractors operations. This shut down will remain in effect until corrective measures to protect the environment are satisfactorily in place as deemed acceptable by the Owner or the Owners representative. No monetary claims shall be allowed due to delays caused by the Contractor's or sub-contractor's non-conformance with this SWPPP or Erosion and Sediment

Control notes, details (included as part of the contract plans), specifications book, or Contractor-submitted and approved Plans and narrative.

- No more than **two (2) acres** disturbed at one time for this project.
- All erosion and sediment control practices will be installed and maintained in accordance with the *Rules and Regulations for the Protection from Contamination, Degradation and Pollution of the New York City Water Supply and its Sources*, *New York State Standards and Specifications for Erosion and Sediment Control* and as necessary to adapt to any unique conditions along the corridor. If full implementation of the contractor's measures do not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source. This shall be the responsibility of the Contractor at no additional cost to the owner.
- All erosion and sediment control practices will be enforced daily through construction inspection and administration. Needed repairs will be addressed immediately and repaired before daily work shutdown.
- **To help ensure permit compliance through timely remedying of identified site deficiencies, Contractor's payment applications will not be processed until SWPPP (and documents inherently incorporated) deficiencies are corrected to the satisfaction of the Owner or the Owners representative.**
- The Contractor shall have, onsite at all times during any disturbance activity, a NYSDEC 4-hr trained contractor representative to oversee disturbance activities and coordinate erosion and sediment control activities. The Contractor may appoint his qualified representative to act on behalf of the sub-contractor. This means he must be present during sub-contractor activities even if Contractor activities are not being conducted during the same working period.

- Permanent vegetation will be established on all disturbed areas**.** Site stabilization will be defined as 90% vegetative cover over the entire site. Following site stabilization, which shall be approved by the Engineer, all temporary erosion and sediment control practices can be removed.
  What is the function of the construction activity?

  ☐ Residential ☐ Commercial ☐ Industrial ☐ Road Construction
  ☐ Linear Utility
  ☒ Other (please specify): Recreational - Bicycle and Hiking trail
  Estimated Project Start Date: December 2017
  Estimated Project Completion Date: June 2018

1**.4 Soils, Slopes, Vegetation, and Current Drainage Patterns**

The following provides a description of soils, slopes, vegetation, and current drainage patterns of the project limits.

1.4.1 Soil Type(s)

The NRCS' SSURGO Database and Web Soil Survey (USDA, 2016) were reviewed to determine the types and characteristics of soils mapped within the limits of the Project Corridor to preliminarily evaluate the presence of hydric soils, one of the required criteria for federally regulated wetlands. Table 1, below, lists the soil symbol, mapping unit name, taxonomic classification, hydric classification and rating, drainage classification, and typical Munsell soil colors information that characterize each soil type mapped along the Project Corridor. As shown in Table 1, four of the soils mapped within the Project Corridor, defined by a hydric rating percent of >50%.

Table 1. NRCS Mapped Soils Data						
Map Unit Name	Soil Symbol	Taxonomic Class	Drainage Class	Hydric Rating (%)	Typical Munsell Soil Horizon Colors	Typical Munsell Redoxymorphic Feature Colors
Alluvial land	AA	Fluvaquents	Poorly drained	65	N/A	N/A
Arnot channery silt loam, 0 to 8 percent slopes	AcB	Lithic Dystrochrepts	Somewhat excessively drained	0	0-6": 10YR 4/2 6-13": 10YR 5/4 13-17": 2.5Y 5/4 17-27": "Gray"	-
Arnot-Oquaga-Rock outcrop complex, very steep	ARF	Lithic Dystrochrepts	Somewhat excessively drained	0	0-6": 10YR 4/2 6-13": 10YR 5/4 13-17": 2.5Y 5/4 17-27": "Gray"	-
Atherton silt loam	At	Aeric Haploquepts	Poorly drained	90	0-9": 10YR 3/1, 9-22": 5Y 5/1	0-9": 2.5YR 3/6, 9-22": 2.5Y 5/4
Canandaigua silt loam	Cc	Mollic Haplaquepts	Very poorly drained	95	0-8": 10YR 3/1 8-12": 10YR 6/2 12-19": 10YR 6/1 19-30": 10YR 6/2	8-12": 10YR 5/6, 7.5YR 5/6 12-19": 10YR 7/2, 7.5YR 5/6 19-30": 7.5YR 6/4, 7.5YR 5/6
Castile gravelly silt loam, 0 to 3 percent slopes	CgA	Aquic Dystrochrepts	Moderately well drained	0	0-13": 10YR 4/2 13-18": 10YR 5/4 18-24": 10YR 5/3	18-24": 10YR 5/1
Castile gravelly silt loam, 3 to 8 percent slopes	CgB	Aquic Dystrochrepts	Moderately well drained	0	0-13": 10YR 4/2 13-18": 10YR 5/4 18-24": 10YR 5/3	18-24": 10YR 5/1
Gravel pit	GP	-	Somewhat excessively drained	5	-	-
Haven loam	He	Typic Dystrochrepts	Well drained	0	0-2": Decomp 2-3": 5YR 2/1 3-6": 10YR 4/2 6-13": 7.5YR 4/4 13-22": 7.5YR 5/6	-
Hoosic gravelly loam, rolling	HgC	Typic Dystrochrepts	Somewhat excessively drained	0	0-6": 10YR 4/2 6-11": 10YR 5/6 11-22": 10YR 5/6	-
Hoosic gravelly loam, 15 to 25 percent slopes	HgD	Typic Dystrochrepts	Somewhat excessively drained	0	0-6": 10YR 4/2 6-11": 10YR 5/6 11-22": 10YR 5/6	-
Hoosic soils, very steep	HSF	Typic Dystrochrepts	Somewhat excessively drained	0	0-6": 10YR 4/2 6-11": 10YR 5/6 11-22": 10YR 5/6	-

Table 1. NRCS Mapped Soils Data						
Map Unit Name	Soil Symbol	Taxonomic Class	Drainage Class	Hydric Rating (%)	Typical Munsell Soil Horizon Colors	Typical Munsell Redoxymorphic Feature Colors
Lackawanna flaggy silt loam, 8 to 15 percent slopes	LaC	Typic Fragiudepts	Well drained	0	0-8": 5YR 3/4 8-13": 5YR 4/4 13-26": 2.5YR 4/4	-
Lackawanna and Swartswood soils, moderately steep, very bouldery	LCD	Typic Fragiudepts	Well drained	0	0-8": 5YR 3/4 8-13": 5YR 4/4 13-26": 2.5YR 4/4	-
Lackawanna and Swartswood soils, very steep, very bouldery	LCF	Typic Fragiudepts	Well drained	0	0-8": 5YR 3/4 8-13": 5YR 4/4 13-26": 2.5YR 4/4	-
Lordstown-Arnot-Rock outcrop complex, sloping	LOC	-	-	0	-	-
Made land	ML	Udorthents	Somewhat excessively drained	5	-	-
Menlo silt loam	Mn	Histic Humaquepts	Very poorly drained	100	0-5": 10YR 2/1 5-16": 10YR 2/1 16-22": 7.5YR 5/1	5-16": 7.5YR 4/6 16-22": 7.5YR 4/6. 10YR 5/6
Morris-Tuller complex, gently sloping, very bouldery	MTB	Aeric Fragiaquepts	Somewhat poorly drained	20	0-8": 5YR 4/2 8-10": 7.5YR 4/4 10-14": 5YR 5/2 14-50": 2.5YR 4/4	10-14": 5YR 4/4, N 5/0 14-50": N 6/0, 7.5YR 5/6, N 5/0
Oquaga channery silt loam, 3 to 8 percent slopes	OgB	Typic Dystrochrepts	Well drained	0	0-4": 5YR 3/3 4-11": 2.5YR 3/6 11-28": 2.5YR 4/4	-
Oquaga and Lordstown channery silt loams, 8 to 15 percent slopes	OlC	Typic Dystrochrepts	Well drained	0	0-4": 5YR 3/3 4-11": 2.5YR 3/6 11-28": 2.5YR 4/4	-
Oquaga-Arnot-Rock outcrop complex, sloping	ORC	Typic Dystrochrepts	Well drained	0	0-4": 5YR 3/3 4-11": 2.5YR 3/6 11-28": 2.5YR 4/4	-
Oquaga-Arnot-Rock outcrop complex, moderately steep	ORD	Typic Dystrochrepts	Well drained	0	0-4": 5YR 3/3 4-11": 2.5YR 3/6 11-28": 2.5YR 4/4	-

Table 1. NRCS Mapped Soils Data						
Map Unit Name	Soil Symbol	Taxonomic Class	Drainage Class	Hydric Rating (%)	Typical Munsell Soil Horizon Colors	Typical Munsell Redoxymorphic Feature Colors
Plainfield-Riverhead complex, very steep	PmF	Typic Udipsamments	Excessively drained	0	0-7": 10YR 3/3 7-16": 7.5YR 4/4 16-28": 7.5YR 5/6	-
Quarry	QU	-	-	5	-	-
Red Hook gravelly silt loam	Re	Aeric Haploquepts	Somewhat poorly drained	5	0-6": 10YR 3/2 6-8": 10YR 4/3 8-13": 10YR 5/3 13-22" 10YR 5/2	6-8": 10YR 5/2 8-13": 10YR 5/2, 4/4 13-22": 7.5YR 4/4, 10YR 5/6
Schoharie silt loam, 3 to 8 percent slopes	SaB	Typic Hapludalfs	Moderately well drained	0	0-8": 7.5YR 3/2 8-11": 10YR 6/3 11-18": 5YR 5/4 18-33":2.5YR 4/4	18-33": 5YR 5/6
Scriba and Morris soils, 0 to 8 percent slopes	SdB	Aeric Fragiaquepts	Somewhat poorly drained	5	0-9": 10YR 3/2 9-13": 10YR 5/2 13-30": 7.5 YR 5/4	9-13": 10YR 5/6, 7.5YR 5/6, 10YR 6/1 13-30": 10YR 4/4, 7.5 YR 5/6, 7.5YR 6/2
Scriba and Morris soils, gently sloping, very bouldery	SEB	Aeric Fragiaquepts	Somewhat poorly drained	5	0-9": 10YR 3/2 9-13": 10YR 5/2 13-30": 7.5 YR 5/4	9-13": 10YR 5/6, 7.5YR 5/6, 10YR 6/1 13-30": 10YR 4/4, 7.5 YR 5/6, 7.5YR 6/2
Suncook loamy fine sand	Su	Typic Udipsamments	Excessively drained	0	0-7": 10YR 3/2 7-14": 10YR 4/2 14-22": 10YR 3/3	-
Tunkhannock gravelly loam, 0 to 3 percent slopes	TkA	Typic Dystrochrepts	Well drained	0	0-8": 10YR 4/3 8-16": 7.5YR 16-26": 5YR 4/4	-
Tunkhannock gravelly loam, 3 to 8 percent slopes	TkB	Typic Dystrochrepts	Well drained	0	0-8": 10YR 4/3 8-16": 7.5YR 16-26": 5YR 4/4	-
Tunkhannock gravelly loam, rolling	TkC	Typic Dystrochrepts	Well drained	0	0-8": 10YR 4/3 8-16": 7.5YR 16-26": 5YR 4/4	-
Valois very bouldery soils, gently sloping	VAB	Typic Dystrochrepts	Well drained	0	0-7": 10YR 4/3 7-30": 7.5YR 5/6	-
Valois very bouldery soils, moderately steep	VAD	Typic Dystrochrepts	Well drained	0	0-7": 10YR 4/3 7-30": 7.5YR 5/7	-

Table 1. NRCS Mapped Soils Data						
Map Unit Name	Soil Symbol	Taxonomic Class	Drainage Class	Hydric Rating (%)	Typical Munsell Soil Horizon Colors	Typical Munsell Redoxymorphic Feature Colors
Wellsboro and Wurtsboro soils, gently sloping, very bouldery	WLB	Typic Fragiochrepts	Moderately well drained	0	0-8": 5YR 4/2 8-18": 5YR 4/4 18-24": 7.5YR 5/4	18-24": 5YR 5/8, 10YR 6/1, 5YR 6/3

Legend

Project Corridor

Soil Series Symbol

- ARF - Arnot-Oquaga-Rock outcrop
- AcB - Arnot Channery silt loam
- LCD - Lackawanna and Swartswood soils, moderately steep
- LaC - Lackawanna flaggy silt loam
- ML - Made land
- MTB - Morris-Tuller complex
- Mn - Menlo silt loam
- ORC - Oquaga-Arnot-Rock outcrop, sloping
- ORD - Oquaga-Arnot-Rock complex, moderately steep
- OgB - Oquaga channery silt loam, 3-8% slopes
- OlC - Oquaga channery sil loam, 8-15% slopes
- QU - Quarry
- SEB - Scriba and Morris soils
- W - Water
- WLB - Wellsboro and Wurtsboro soils

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 1,500 feet

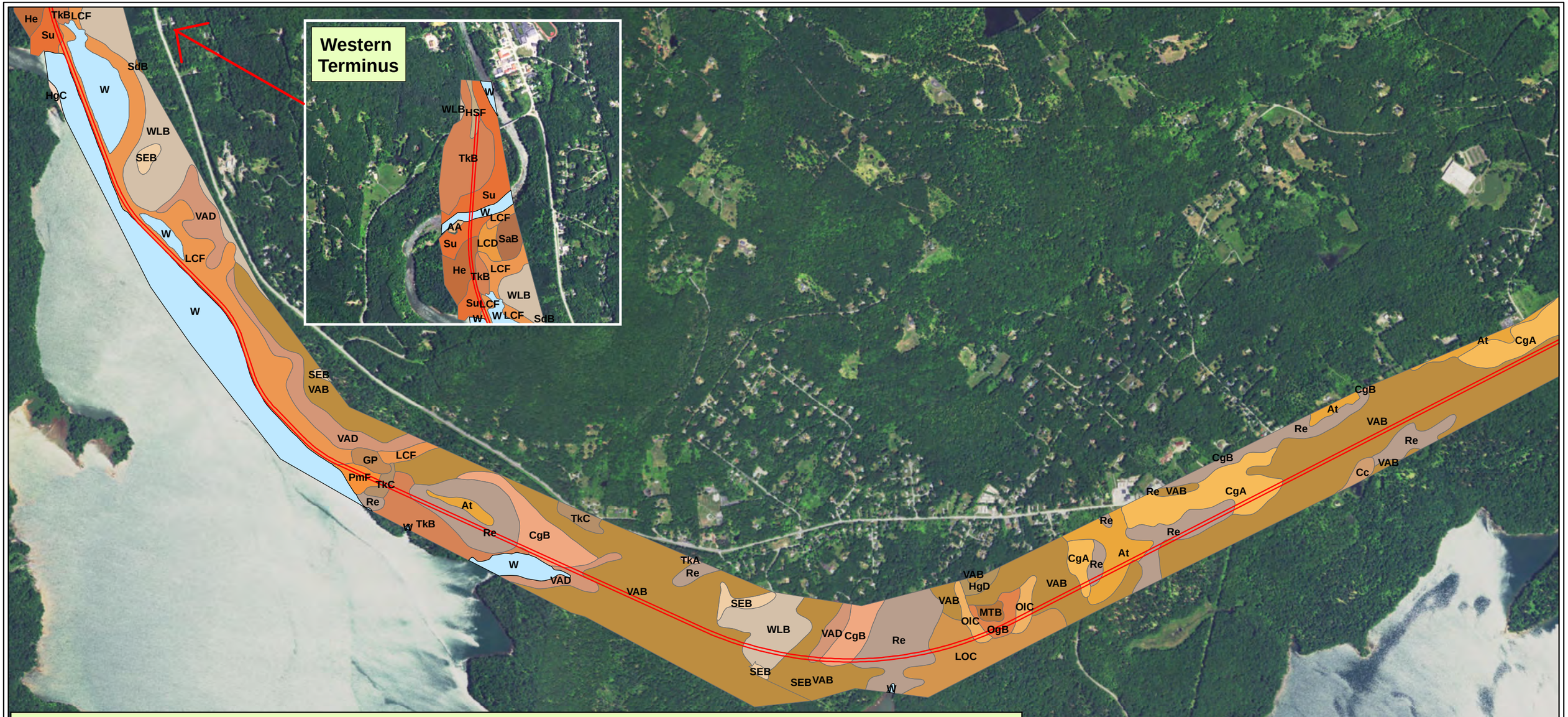
Ulster County

Ashokan Rail Trail - NRCS Soils

Ulster County — March 2017 — New York

Figure 3

Project No. 369.007



Legend

Project Corridor

Soil Series Symbol

- At - Atherton silt loam
- Cc - Canandaigua silt loam
- CgA - Castile gravelly silt loam
- CgB - Castile gravelly silt loam, 3-8% slopes
- GP - Gravel pit
- He - Haven loam
- HgC - Hoosic gravelly loam, rolling
- HgD - Hoosic gravelly loam, 15-25% slopes
- LCF - Lackawanna and Swartswood soils, very steep
- LOC - Lordstown-Arnot-Rock outcrop complex
- MTB - Morris-Tuller complex
- OgB - Oquaga channery silt loam, 3-8% slopes
- OIC - Oquaga channery sil loam, 8-15% slopes
- PmF - Plainfield-Riverhead complex
- Re - Red Hook gravelly silt loam
- SEB - Scriba and Morris soils
- SdB - Scriba and Morris soils, 0-8% slopes
- Su - Suncook loamy fine sand
- TkA - Tunkhannock gravelly loam, 0-3% slopes
- TkB - Tunkhannock gravelly loam, 3-8% slopes
- TkC - Tunkhannock gravelly loam, rolling
- VAB - Valois very bouldery soils
- VAD - Valois very bouldery soils, moderately steep
- W - Water
- WLB - Wellsboro and Wurtsboro soils

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N W E S

1 inch = 1,500 feet

Ulster County

Ashokan Rail Trail - NRCS Soils

Ulster County March 2017 New York

Figure 3A

Project No. 369.007

1.4.2 Slopes, Topography

Existing Conditions:

The existing profile (running slope) of the existing railroad corridor is flat to a maximum of approximately 1% in grade for the majority of the corridor. The sideslopes vary from zero (0) to no greater than 60% slopes. The trail also traverses through several rock cut sections where the rock faces are nearly vertical.

Future Conditions:

The existing grades within the railroad corridor will not be altered as part of Phase 1 of this project. The steep side slopes adjacent to the trail will not be disturbed. The removal of the existing Railroad ties will create minor divots in the existing railroad bed. These divots will be graded and leveled as a part of phase 1 of this project. No other land grading is anticipated.

1.4.3 Drainage Patterns

Existing Conditions:

The existing corridor is primarily comprised of forested land, and area of dense tree cover. The ground is covered with leaves, sticks, and small shrubs, young trees, and bushes. There are areas of exposed rock where sections were removed during the original railroad construction.

Stormwater runoff that does not infiltrate into the ballast is conveyed by sheetflow down the slopes at the edge of the ballast and in some cases is stored in depressions along the edge of the ballast. With the terrain being essentially level, stormwater does not typically flow longitudinally along the tracks and ballast. The water sits in the depressions except in heavier rainfalls where concentrated flows eventually find drainage swales and outlet points onto the sideslopes adjacent to the trail. Various water courses and streams throughout the trail corridor also convey channelized runoff during storm events. Specific information on these streams and tributaries is described in the wetland delineation report for this project.

Future Conditions:

In the post-construction condition of Phase 1, the drainage patterns will not be modified. The existing ballast has a footprint of approximately 10'-12' in width. The ballast will be graded and stabilized after removal of the track and ties. Organic material within the ballast footprint, and ballast heavily laden with soil and/or tie fragments, will be removed and disposed of with the removed ties. As a result of the tree removal activities, tree stumps will remain in place to help maintain soil stability. At the conclusion of this phase, the drainage patterns will remain as they did in the pre-construction condition.

1.4.4 *Vegetation*

Existing Conditions:

The corridor traverses through a forested area with many different types of vegetation present in a low lying understory. The existing railroad tracks are generally clear except for minor growth of small bushes and low lying plants. Immediately adjacent to the tracks, small trees and saplings have grown in due to lack of maintenance activities throughout the project corridor. Types of vegetation present includes: Broom sedge (*Carex scoparia*), shallow sedge (*Carex lurida*), pinkweed (*Persicaria pensylvanica*), American bur-reed (*Sparganium americanum*), speckled alder (*Alnus incana)*, Japanese stilt grass (*Microstegium vimineum*), and prickly sedge (*Carex stipata*), green bulrush (*Scirpus atrovirens*), arrow-leaf tearthumb (*Persicaria sagittata*), jewelweed (*Impatiens capensis*), silver maple (*Acer saccharinum*) and red maple (*Acer rubrum*), white pine (*Pinus strobus*, white ash (*Fraxinus americana*), and American beech (*Fagus grandifolia*), red osier dogwood (*Cornus alba*), rattlesnake grass (*Glyceria canadensis*), common reed (*Phragmites australis*), soft rush (*Juncus effusus*), poison ivy (*Toxicodendron radicans).*

Future Conditions:

The majority of the vegetation removals along the corridor consist of removal of dead or stressed trees that pose an immediate danger to the trial if they were to fall. The removal of select trees is also necessary within the immediate footprint of the track (8' wide) plus 4' on each side for a total of 16'.

In addition to the select tree clearing along the railroad corridor, clearing of specific areas is required at 3 locations. An 800' length by approximately 16' width will be required to reroute the trail around Wetland O, clearing for the daylighting of Butternut Creek, and clearing for the construction of the Boiceville Bridge is also necessary for construction of the trail. The steel rails and wooden ties will also be removed and the ballast graded to a width of approximately 12' in preparation for the second phase of construction. Trees to be removed have been marked by the County.

1.4.5 Disturbed Areas

The expected disturbance to soils area under Phase 1 is approximately 10 ft. wide and centered along the existing rail. This width is necessary for the removal of the existing railroad ties and regrading of the existing ballast. The estimated Rail and Tie removal disturbance is:

(61,120) long x (10') wide = 611,200 SF (14.0 ACRE)
Contractor access and lay-down areas = 153,100 SF (3.5 ACRE)

Phase 1 Total = 764,300 SF (17.5 Acres)

The disturbance caused by the rail and tie removal will be stabilized by the grading of the existing ballast following removal. This will be required as part of the contract plans. The construction documents and this SWPPP will permit no more than 2.0 acres of disturbance at any given time.

1.5 Construction Site Estimates

Phase 1:

Total Site Area:	228.5 acres
Total Area to be disturbed:	17.5 acres
Existing Impervious Area (35,000 rr tie x 6.4 sf/tie)	0.0 acres
Existing Impervious Area to be disturbed:	0.0 acres
Future Impervious Area within disturbed area:	0.0 acres
Percentage impervious area before construction:	0.0 %
Percentage of disturbed area impervious after construction:	0.0 %

1.6 Receiving Waters

Stormwater runoff from the trail surface that does not infiltrate to the stone ballast layer below will be conveyed by sheet flow to the northern edge of the trail (side furthest from the reservoir) where an additional opportunity for runoff to infiltrate into the ballast layer will occur on the stabilized trail shoulder. Runoff that does not infiltrate will be collected and follow the existing drainage patterns throughout the corridor. In areas in cut, runoff will collect in trailside swales that flow into existing streams which eventually discharge into the Ashokan Reservoir, which is classified as an AA standard terminal reservoir and owned and operated by NYC DEP. Sections of the trail that are in fill will have similar drainage characteristics as the sections in cut, however, runoff that does not infiltrate will not be collected in drainage swales. The runoff will flow off the trail edge and will enter into sheet flow down the sideslopes and eventually into more level areas were the stormwater will have the opportunity to infiltrate along the forest floor. The existing leaf litter and vegetation will help to disperse the runoff and allow for greater infiltration and pocket storage. It was noted in the soil survey that the majority of the soils throughout the corridor exhibit well-drained characteristics.

A total of 16 wetlands were identified and delineated within and adjacent to the project corridor as part of the environmental field investigation. Figures 6A through 6I in the Wetland Delineation Report show the locations of the wetlands delineated as well as the location of the 17 observed streams. Table 2, below, provides the approximate coordinates of each wetland and stream located within the project corridor. Identified wetland areas were individually labeled as A through P. Streams observed within the project area were labeled as Stream 1 through Stream 16. Additional details and the Wetland Delineation Report can be found in Appendix H.

Table 2: Wetland and Stream Location

Resource ID	Type of Resource	Lat/Long Coordinates (NAD83)
A	Wetland	41°59'36.01"N, 74° 5'27.64"W
B	Wetland	42° 0'5.23"N, 74° 7'47.75"W
C	Wetland	41°59'42.48"N, 74° 5'32.51"W

Table 2: Wetland and Stream Location		
Resource ID	Type of Resource	Lat/Long Coordinates (NAD83)
D	Wetland	41°59'42.19"N, 74° 5'31.42"W
E	Wetland	41°59'44.24"N, 74° 9'14.53"W
F	Wetland	41°58'49.68"N, 74°10'57.76"W
G	Wetland	41°58'48.99"N, 74°10'59.81"W
H	Wetland	41°58'40.09"N, 74°11'21.86"W
I	Wetland	41°58'35.38"N, 74°11'34.48"W
J	Wetland	41°58'20.23"N, 74°12'15.83"W
K	Wetland	41°58'17.03"N, 74°12'24.42"W
L	Wetland	41°58'17.69"N, 74°12'24.47"W
M	Wetland	41°58'10.89"N, 74°12'40.99"W
N	Wetland	41°58'10.72"N, 74°12'40.71"W
O	Wetland	41°58'20.68"N, 74°14'37.94"W
P	Wetland	42° 0'2.59"N, 74°16'12.76"W
1	Stream	42°0'3.955"N, 74°7'35.846"W
2	Stream	42°0'4.43"N, 74°7'50.57"W
3	Stream	42°0'3.126"N, 74°8'5.448"W
4	Stream	41°59'57.381"N, 74°8'51.728"W
5	Stream	41°59'43.523"N, 74°9'14.097"W
6	Stream	41°59'29.018"N, 74°9'45.409"W
7	Stream	41°58'51.309"N, 74°10'51.827"W
8	Stream	41°58'49.08"N, 74°10'57.858"W
9	Stream	41°58'36.267"N, 74°11'34.791"W
10	Stream	41°58'27.057"N, 74°11'55.15"W
11	Stream	41°58'24.273"N, 74°12'4.192"W
12	Stream	41°58'1.983"N, 74°13'10.877"W
13	Stream	41°58'2.626"N, 74°13'44.729"W
14	Stream	41°58'13.383"N, 74°14'23.43"W
15	Stream	41°58'26.086"N, 74°14'54.98"W
16	Stream	41°58'44.687"N, 74°15'28.768"W

In addition to the resources identified by B&L staff, New York City Department of Environmental Protection has provided the boundaries of 10 wetlands (labeled DEP Wetland A thru J) in the vicinity of the project area based on

delineations they previously conducted for forest management projects. DEP's delineations were conducted pursuant to methods in the 1987 Army Corps of Engineers Wetland Delineation Manual and the Northcentral and Northeast Regional Supplement. DEP Wetlands A through C were delineated in May through July 2012, Dep Wetlands D through H in June of 2013. DEP Wetland J was delineated in 2010, and recently re-delineated in 2017. Most of the wetland polygons provided by DEP are outside of the project limits for the trail project (Wetland B, C, D, E, F and J). The corridor was re-routed to minimize and avoid impacts to wetlands G and I. Two wetlands, DEP Wetlands A and H are coincident with B&L Wetlands H and O, Respectively.

DEP also provided the locations of 20 Watercourses (labeled DEP Streams 1 through 20). These watercourses ultimately connect to tributaries of the Ashokan Reservoir, and as such, are believed to be jurisdictional features. A summary of these features are displayed in Appendix Q.

1.7 Site Features and Sensitive Areas to be protected

- Vegetation: Disturbance of adjacent vegetation will be limited only to what is necessary for construction. These are previously disturbed and maintained areas and shall be revegetated with a seed mixture as specified by NYC DEP. Wetland vegetation that is adjacent to the project limits that is not to be disturbed as part of the construction of the Ashokan Rail Trail will be delineated with orange construction fencing, "Protected Area, Keep Out" signs, and fiber logs to prevent the contractor and sediment from entering the wetland vegetation.
- Slopes: The slopes throughout the project corridor will not be altered as a result of this project. Minor changes to the profile of the trail are anticipated in select areas to eliminate the need to place embankment material on the side slopes.

- Soils: The soils in the project area are typically well drained and offer excellent treatment and infiltration potential. Soil restoration and amendments are not applicable for this project.
- Critical Ecological Habitats: The project is located within areas identified as suitable habitat for the Bald Eagle, Bog Turtle and the
- Northern Long-eared and Indiana Bat. See section 1.9 for an in depth discussion on the existing habitat and the proposed conditions.

1.8 Potential Sources of Pollution

Potential sources of sediment to stormwater runoff:

- Land grading on and immediately adjacent to the trail
- Removal of existing railroad infrastructure
- Soil stabilization activities

Potential pollutants and sources, other than sediment, to stormwater runoff include:

- The introduction of fluids from equipment and construction vehicles to the site. Tools and equipment requiring washing shall be washed in a designated washout location that is appropriately constructed to prevent pollutants from exiting the immediate area around the washout station or the site. This washout shall not, under any circumstances be allowed to enter the drainage ditches, swales, or any body of water. All debris resulting from washouts shall be removed and properly disposed off-site. Potential wastes and products that may be stored on-site include grubbing wastes, packaging materials, building materials, paints and thinners, cleaning solvents, pesticides, petroleum products, and fertilizers. Fluids shall be stored within a lined, berm

location per prevailing Federal, State, and Local regulations. Equipment utilized in construction shall be well-maintained and free of any known leaks of fluids. Those observed to leak will require immediate cleanup of both the equipment and the impacted area. Cleanup materials and waste will require proper disposal. The equipment will need to be removed from any location where contamination of soil or waterbodies may occur. The equipment shall be removed from use either off-site or on-site with appropriate and Owner approved storage methods until repaired and inspected by the Owner or the Owners representative. The onsite 4-hr NYSDEC trained Contractor shall visually inspect for leaks on a daily basis. The Contractor shall also submit, to the Engineer, the proposed wash out and fluids storage areas for approval.

1.9 Endangered Species Certification

Are endangered or threatened species and critical habitats on or near the project area?

☒ **Yes** ☐ **No**

The Corridor has been assessed for impacts to threatened and endangered Species by NYS and federal regulations. The following threatened and endangered species were identified during queries of the federal Information for Planning and Conservation (IPaC) and NYS Natural Heritage Program (NHP) database.

Indiana Bat (*Myotis sodalis*) - Endangered
Northern long-eared bat (*Myotis septentrionalis*) - Threatened
Bog turtle (*Clemmys muhlenbergii*) - Threatened
Bald eagle (*Haliaeetus leucocephalus*) - Threatened (NYS only).

The U.S. Fish and Wildlife Service (USFWS) New York Field Office's website was reviewed to determine whether any federally listed endangered,

threatened, or candidate species are known to inhabit the proposed project area. The USFWS' Information, Planning and Conservation (IPaC) System reported three federally protected species that could potentially inhabit the project corridor: the Indiana bat (Myotis sodalis – Endangered), the northern long-eared bat (Myotis septentrionalis – Threatened), and the bog turtle (Clemmys muhlenbergii – Threatened).

Additionally, The Natural Heritage Program (NHP) was queried for information regarding the reported presence of any endangered species, threatened species, species of special concern, or significant natural communities within or adjacent to the project area. A response was received from the NHP on July 26, 2016, which indicated three records of rare or state-listed animals or plants and significant natural communities at the site or in its immediate vicinity. The bald eagle (Haliaeetus leucocephalus- Threatened) was identified to have nested within 400 feet of the project corridor. An Indiana bat maternity colony was identified within 250 feet of the project corridor. Additionally, a high quality occurrence of an uncommon community type, a bluestone vernal pool, was identified .5 mile east of the corridor.
Indiana and Northern Long-eared Bats

In accordance with the 2016 Range-wide Indiana Bat Summer Survey Guidelines (this document applies to both Indiana bat and northern long-eared bats) most trees greater than 3" DBH are considered potential habitat for the northern long-eared bats, and greater than 4" DBH for the Indiana bat. The dominant tree species observed within the project corridor include: red maple (Acer rubrum), striped maple (Acer pensylvanicum), shagbark hickory (Carya ovata), silver maple (Acer saccharinum), northern red oak (Quercus rubra), eastern white pine (Pinus strobus), and American beech (Fagus grandifolia). Approximately 9.2 acres of woody vegetation, including shrubs <3" intermixed with larger DBH trees, are proposed for clearing throughout the linear length of trail. In accordance with the aforementioned USFWS resources, trees greater than 3" DBH requiring removal are to be cut between November 1st and March 31st during the conservation cutting window timelines. The proposed project is not likely to adversely affect the northern long-eared or Indiana bats, or their suitable habitats, due to the selective clearing to be conducted along a linear corridor and the availability of large tracts of forestland adjacent to the proposed corridor that will remain untouched.

The bog turtle, the smallest of the emydid turtles, spends much of the time buried in the mud and therefore has a reputation for being secretive. While they prefer fens, highly acidic wetlands and areas of soft, deep mud are considered suitable habitat. Several wetland complexes are adjacent to, but not within, the proposed areas of disturbance for the project. Two wetland complexes will be directly impacted as a result of the project. Field delineated Wetlands K and L, identified as correspondent to NYSDEC Mapped wetland AS-20, were emergent in nature but did not contain the deep mucky soils required by this species or microtopographic relief for basking. Additionally, a large patch of common reed (Phragmites australis) was noted as dominant which due to plant density prohibits basking. The other field delineated wetland to be impacted, identified as Wetland O, was also emergent but shaded over by the upland tree canopy, lacking the necessary sunlight and microtopographic relief for basking. Additionally, the soils were restricted at 12 inches with the presence of ballast. No impacts are expected to other wetlands delineated within the corridor.

Bald eagles prefer habitat along large bodies of water and shoreline area. The project corridor is located within close proximity to the Ashokan Reservoir. Additionally, a confirmed nest with young was reported by the BBA as well as the New York City Department of Environmental Protection and the NYNHP. However, during coordination with the NYSDEC, the nest that was originally reported to be within regulation distance of the trail was not successful and is no longer active. Two other territories are active within .5 mile of the trail. It is understood that impacts may occur to this species as a result of loud construction noises during the nesting season. To minimize impacts and necessity for a BGEPA permit, it is recommended that construction that will occur within 660 feet of a nest occur during the non-breeding season, from mid-September to December.

Additionally, NYSDEC and NYCDEP have ongoing coordination to improve bald eagle habitat along the reservoir. As such, “Currently, DEC recommends that no tree removal occur within 200ft of the shoreline, no white pines be removed within 300ft of the shoreline, and no white pines larger than 25 inches are removed at any location within the project site.” Trail construction is designed to limit impacts to the greatest extent possible and will be further refined during construction with full time oversight to avoid impacts to white

pines. No white pines larger than 25 in. dbh will be cut or damaged as a result of this project. White pines to remain will be surrounded with orange construction fencing during construction.

1.10 Historic Preservation

Are there any historic sites on or near the construction site?

☒ **Yes** ☐ **No**

In review of the project, the State Historic Preservation Office (SHPO) has deemed that a portion of the railroad corridor running from Shokan to Phoenicia is listed under the National Register Criterion A for its association with the development of several towns. The adaptive re-use of this resource as a recreational trail will honor the historic nature of the corridor and allow it to live on in the future. In order to preserve the history of the corridor, a preservation plan will be developed that identifies historic structures, and interpretive materials and displays will be included throughout the project that will highlight the history of the corridor. This information is planned at various kiosks and interpretive panels throughout the trail, and sections rail are proposed to be left in place. Coordination has been ongoing with the SHPO to ensure the historic significance will be maintained. A letter of "no adverse impact" is anticipated to be issued by SHPO upon acceptance of the preservation plan and the appropriate interpretative plan is in place.

2.0 Erosion and Sediment Control Practices

All Best Management Practices (BMPs) will be installed and maintained in accordance with the most current version of the New York State Standards and Specifications for Erosion and Sediment, November 2016 and the most current version of the New York State Stormwater Management Design Manual (NYSSMDM). See Section 2.14 for implementation and maintenance schedules for all erosion and sediment control practices.

2.1 Fiber Roll (a.k.a. - Wattles, Fiber logs)

Fiber rolls will be installed downgradient of all soil disturbance activities in order to protect any waters of the US or its conveyance means. The fiber roll will reduce runoff velocity and enable the localized deposition of sediment. All construction specifications will be in accordance with the most current version of the New York State Standards and Specifications for Erosion and Sediment, November 2016. Fiber rolls are a temporary sediment control device, and will require removal or they can be open cut and utilized as mulch following site stabilization.

2.2 Land Grading and Roughening

Land grading and surface roughening shall be conducted in accordance with the New York State Standards and Specifications for Erosion and Sediment, November 2016. All disturbed areas shall be stabilized structurally or with vegetation in compliance with the SPDES permit requirements. All graded areas shall be permanently stabilized immediately following finished grading. Surface roughening shall be conducted on all slopes steeper than 3:1 (H:V). Approved methods include tracking, grooving and stair-stepping.

2.3 Topsoil

Topsoil from excavated areas will be reapplied to graded areas to provide acceptable plant growing conditions, reducing erosion, irrigation needs, and the need for nitrogen fertilizer. Subsoil is to be scarified, and all compacted areas de-compacted to a minimum depth of 12-inches prior to top soil placement. Debris, woody plant parts, and stones over 3 inches in diameter are to be removed prior to application. Topsoil shall be distributed to a

uniform depth and shall not be placed when frozen or saturated or on top of ice, snow, frozen subsoil, or standing water. Topsoil placed on slopes greater than five percent (5%) shall be promptly stabilized by "tracking" and seeded and mulched. Top soil placement standards and specifications will be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, November 2016.

2.4 Protecting Vegetation during Construction

Protection of vegetation during construction may include protection of existing trees, shrubs, ground cover and other vegetation from damage by construction equipment. This will be by way of installing orange warning fence to caution against encroachment around sensitive areas, if identified. Warning fence is a temporary control device, and will require removal following site stabilization.

2.5 Temporary Seeding on All Areas Left Bare for more than three (3) days

All areas that are left bare or in which work has suspended for more than three (3) calendar days will be **seeded and heavily mulched** in accordance with standards and specifications of the most current version of the New York State Standards and Specifications for Erosion and Sediment Control, August 2005.

- Site preparation will include:
  - Scarify, if compacted
  - Maintain a pH of 6.0 to 7.0
  - NO FERTILIZER SHALL BE USED ON THIS PROJECT

- For temporary and permanent seeding, the above site preparation will be conducted and the site will be seeded in accordance with the project specifications. A typical mix contains the following: Mixture of 30% k-31 Tall Fescue, 25% Creeping Red Fescue, 35% Annual Rye Grass, and 10% Kentucky Bluegrass, at 3 lbs. per 1,000 sf.

  However, NYC DEP will provide a specific mixture for this project.

- Irrigation with potable water of temporary and permanent seeding shall be conducted as necessary to encourage the required vegetative stand.
- Final site stabilization will be defined as permanent cover of 90% of the entire project site, and must be approved by the Engineer. **Note that at the conclusion of construction activities, a vegetative cover density of less than 90% of the vegetated area will require the continuation of regular weekly inspections and that a Notice of Termination cannot be submitted if the vegetative stand is less than 90%.**

2.6 Mulching

Mulching will be used on soils subject to erosion and on areas of new seeding. Mulch is to be applied after site preparation, soil amendments and planting is accomplished. Cereal grain straw mulch is to be applied at 90 lbs. per 1,000 sq. ft. (two (2) tons per acre) and anchored with wood fiber hydro-mulch at 11 to 17 lbs. per sq. ft. (500-750 lbs. per acre). Mulching standards and specifications will be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, November 2016.

2.7 Rolled Erosion Control Product (RECP):

A biodegradable erosion control product that is designed for short term to intermediate term erosion protection and vegetation establishment on steep slopes, medium- to high-flow channels, will be utilized. Areas within 50 feet of a surface water feature, areas corresponding to constructed stormwater channels, and areas corresponding to a slope of 15% or greater, must receive RECP. After the blankets degrade, soil erosion is controlled by the mature vegetation's root, stem, and leaf structures. Rolled erosion control product shall be installed in accordance with manufacturer's recommendations and specifications and to the satisfaction of the Engineer and SWPPP Inspector. The *North American Green S75* RECP or similar biodegradable blanket shall be used on this project.

2.8 Equipment and Laydown Areas

Storage of construction equipment will be on the trail since it will not be open to the public during construction. Sensitive areas such as wetlands will be protected from disturbance and include fencing. Silt fencing, Fiber Rolls, or approved equivalent, will be utilized around the equipment lay down areas. These appurtenances will be adhered to impervious surfaces or pinned into pervious surfaces to create a containment area for spills and moved if necessary as equipment laydown areas progress with the project.

The containment appurtenance will be resistant to oils, coolants, and most chemicals. Upon discovery, all contained spills or leaks from the equipment lay down area must be cleaned up and reported to both the Owner and the NYSDEC in accordance with applicable State and Federal regulations (see Appendix K).

2.9 Temporary Stockpile Areas

Temporary stockpile areas shall be surrounded with a layer of fiber roll as necessary to prevent the migration of erodible material onto adjacent property. Erodible stockpiles shall not remain exposed for greater than 7 days unless they are to be utilized or moved within 14 days of last exposure or use. If the stockpiles will not be utilized or moved within 14 days of last exposure or use, they shall be covered. Side slopes of 1:3 (V:H) or flatter

2.10 Erosion and Sediment Control Implementation and Maintenance

The following table provides a summary of erosion and sediment control implementation to be utilized, as a minimum, on this project.

Table 3: Erosion and Sediment Control Implementation Plan

Practice	Duration	Time of Implementation	Time of Removal
Fiber Roll	Temporary	Prior to earth disturbing activities.	Upon upgradient site stabilization.
Land Grading and Roughening	Permanent	Prior to topsoil placement and temporary or permanent seeding	Not to be removed
Topsoil	Permanent	Prior to temporary or permanent seeding	Not to be removed
Protecting Vegetation	Temporary	Prior to construction.	Upon completion of construction
Temporary Seeding	Temporary	Prior to any exposed earth being left for a period of 14 days or more.	Upon reconvening site work in location of temporary seeding.
Mulching	Temporary	After temporary seeding	Not to be removed
RECP	Permanent	After temporary or permanent seeding	Not to be removed
Equipment Laydown Areas	Temporary	Prior to commencement of construction or as part of the constructed areas	Upon completion of construction and just before final stabilization.
Temporary Stockpiles	Temporary	Upon commencement of construction	Upon completion of final grading.
Permanent Seeding	Permanent	Immediately upon final grading of areas to be vegetated	Not to be removed

The following table provides a summary of erosion and sediment control maintenance:

Table 4: Erosion and Sediment Control Maintenance Plan-Maintenance Measures

Practice	Duration	Maintenance Required	Maintenance Frequency	Responsible Party
Fiber Roll	Temporary	Replace upon identification of damaged materials and when sediment reaches half the height of the fiber roll.	Inspect daily and after each runoff event.	Contractor
Temporary Seeding	Temporary	Reseed bare spots and keep free from traffic.	Weekly until stabilization occurs.	Contractor
Mulching	Temporary	Replace bare spots and keep free from traffic.	Weekly until stabilization occurs.	Contractor
RECP	Permanent	Replace upon identification of damaged materials	Weekly until stabilization occurs	Contractor
Equipment Laydown Areas	Temporary	Repair or replacement of barrier. Promptly repair any leaking equipment.	Inspect daily and after each runoff event. If torn or leaking, replace immediately.	Contractor
Temporary Stockpiles	Temporary	Ensure appropriate side slopes and functioning perimeter barriers.	Weekly	Contractor
Permanent Seeding	Permanent	Reseed bare spots, water to establish growth, keep free of vehicular travel.	Weekly until growth is established.	Contractor

Notes:
1) All erosion and sediment control practices will be installed and operation prior to start of work upgradient of the practice.
2) Temporary practices will remain in place and operational until vegetative site stabilization, as directed by the Engineer.
3) Practices will be inspected weekly in accordance with GP-0-15-002.
4) The Contractor is responsible for installation and maintenance until submittal of Notice of Termination.

Table 5: Best Management Practice Category		
Practice	**Duration**	**Category**
Fiber Roll	Temporary	Protect Slopes, Minimize disturbed area and protect natural features and soil. Establish perimeter controls and sediment barriers. Retain sediment on-site.
Temporary Seeding	Temporary	Stabilize soils.
Mulching	Temporary	Retain sediment on-site.
RECP	Permanent	Retain sediment on-site.
Equipment Laydown Areas	Temporary	Retain sediment onsite. Establish perimeter controls.
Temporary Stockpiles	Temporary	Retain sediment onsite
Seeding and Site Stabilization	Permanent	Protect slopes and retain sediment onsite.

3.0 Post-Construction Stormwater Management

Post Construction Stormwater Management is not required for this project as the existing drainage patterns will not be altered and the project will result in a reduction in impervious area. The majority of the project will be constructed on an old railbed where on the existing railroad ballast will be utilized as a base material. Pervious stone will then be installed as a surface course. Stormwater will infiltrate the stone layers during most storm events and if there is any runoff it will be captured on the edge of the stone courses or be conveyed as it is today as sheet flow. There are also depressions along the trail corridor that will store runoff that will eventually be infiltrated into the existing well to moderately drained soils.

4.0 Good Housekeeping BMPs

The following best management practices should be implemented to ensure the proper storage and disposal of construction site wastes:

- Designate waste collection areas that do not receive significant runoff from upland areas and that are not adjacent to water bodies.
- Waste containers should be covered.
- Waste collection should be scheduled at appropriate intervals to prevent overfilling of containers.
- All maintenance and washing of vehicles shall be conducted off-site.
- Any spills should be cleaned up immediately and disposed of in accordance with applicable state and local laws.
- Contractor should have adequate spill prevention materials (i.e., absorbent pads, booms, etc.) on-site.
- Any petroleum products stored on-site should be placed in curbed/diked areas.
- In the event of a spill occurrence, the actions outlined in the NYSDEC's May 1, 1996 Technical Field Guidance for Spill Reporting and Initial Notification Requirements shall be adhered to (see Appendix K).
- Disposal of hazardous waste (non-petroleum) should be conducted as follows:
    a. In accordance with local hazardous waste management authorities, and State and Federal regulations.

b. Containers should be emptied (in accordance with environmental regulations) prior to disposal at an approved location.
c. Product labels from containers should not be removed.
d. All hazardous waste containers should be stored in a dry, curbed/diked area per environmental regulations.

- All sanitary waste generated on-site should disposed of in accordance with local and State regulations.
- Pesticides and fertilizers should be stored in a dry, curbed/diked area. Manufacturer's application rates should be adhered to, and pesticides shall be applied by a licensed or certified personnel where applicable.
- All storage areas and waste containers should be included in the regular inspection program of the site.

Potential wastes and products that may be stored on-site include grubbing wastes, packaging materials, building materials, paints and thinners, cleaning solvents, pesticides, petroleum products, and fertilizers. The Contractor is responsible for implementation of additional best management practices necessary to protect water quality.

5.0 Inspections and Maintenance

5.1 Site Inspections

Inspections are required to be performed by a Qualified Inspector, which is a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), licensed Landscape Architect, or other Department-endorsed individual(s). The qualified inspector must also be working under the direct supervision of the licensed Professional Engineer or licensed Landscape Architect, provided that person has received at least four (4) hours of Department-endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department-endorsed entity as outlined in the General Permit in Appendix A.

Unless otherwise notified by the NYSDEC, the qualified inspector shall conduct site inspections in accordance with the following schedule:

- At least once every seven (7) calendar days.
- For construction sites where soil disturbance activities are ongoing and have NYSDEC approval to disturb greater than five (5) acres of soil at any one (1) time, the qualified inspector shall conduct at least two (2) site inspections every seven (7) calendar days. When performing just two (2) inspections every seven (7) calendar days, the inspections shall be separated by a minimum of two (2) full calendar days.
- For construction sites where soil disturbance activities have been temporarily suspended (e.g., winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the qualified inspector shall conduct a site inspection at least once every thirty (30) calendar days.

For construction sites where soil disturbance activities have been shut down with partial project completion, the qualified inspector can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved final stabilization (in this case 90% establishment) and all post-construction stormwater management practices required for the completed

portion of the project have been constructed in conformance with the SWPPP and are operational.

At a minimum, the qualified inspector shall inspect all erosion and sediment control practices to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved final stabilization, all points of discharge to natural surface water bodies located within or adjacent to the construction site, and all points of discharge from the construction site.

The qualified inspector shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g., dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any discharges of sediment from the construction site. Include discharges from conveyance systems (i.e., pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface water bodies located within or immediately adjacent to the construction site which receive runoff from disturbed areas, including identification of any discharges of sediment to the surface water body;

f. Identification of all erosion and sediment control practices that need repair or maintenance;

g. Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s); and

k. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective action. Color copies of the digital photographs shall be attached to the inspection report maintained on-site within seven (7) calendar days of the date of inspection. The qualified inspector shall also take digital photographs, with date stamp, that clearly show the condition of the practices after the corrective action has been completed, and color copies of the photos shall be attached to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of the date of that inspection.

Within one (1) business day of the completion of an inspection, the qualified inspector shall notify the Owner, appropriate Contractor (or Subcontractor) of any corrective actions that need to be taken. The Contractor (or subcontractor) shall begin implementing the corrective actions within one (1) business day of this notification and shall complete the corrective actions within seven (7) calendar days from initial notification.

All inspection reports shall be signed by the qualified inspector. Sample inspection reports are included as Appendix E.

5.2 Maintenance of Controls

Upon completion of the project, maintenance for the Ashokan Rail Trail will be the responsibility of Ulster County.

5.3 Corrective Action Log

The corrective action log is attached as Appendix F of the SWPPP.

6.0 Recordkeeping and Training

6.1 Recordkeeping

- The following is a list of records to keep onsite, available for inspectors to review:
  - Dates of grading, construction activity, and stabilization.
  - A copy of the construction general permit (attached).
  - The signed and certified NOI form or permit application form (attached).
  - A copy of the letter from the NYSDEC notifying you of their receipt of your complete NOI/application (to be attached upon receipt).
  - Inspection reports (attached – keep all completed reports onsite).
  - Records relating to endangered species and historic preservation (attached).
  - Owner Certification (attached)
  - Contractor/Subcontractor Certification (including NYSDEC trained Contractor Certification – to be attached upon receipt)
  - Verification of 4-hr Contractor Training for on-site Contractor stormwater pollution control representative (to be attached upon receipt)

6.2 Log of Changes to the SWPPP

The SWPPP change/update log is attached as Appendix G.

7.0 Notice of Termination

Following the final inspection, a Notice of Termination (NOT) shall be filed with the NYSDEC in accordance with the SPDES Permit GP-0-15-002. The NOT will include a certification that the permanent stormwater management facilities have been constructed in accordance with the SWPPP. Prior to submittal of the NOT, an Operation and Maintenance Manual is required to be prepared for the permanent stormwater management facilities. The NOT form is included as Appendix L.

8.0 Prime Contractor Certification

Each contractor and subcontractor responsible for implementing the SWPPP, as presented herein, must sign the following:

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings. "

Contractor is responsible for installing additional control measures as needed to prevent water quality violations and to maintain compliance with all applicable permits. Contractor is responsible for any penalties and violations associated with water quality violations or non-compliance with SPDES Permits.

Name	
Title*	Address
Date	Telephone Number

Specific Elements of the SWPPP that Contractor is Responsible for:

Name and Title of Contractor's *Trained Individual(s)* Responsible for SWPPP Implementation:

9.0 Subcontractor Certification

Each contractor and subcontractor responsible for implementing the SWPPP, as presented herein, must sign the following:

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings. "

Contractor is responsible for installing additional control measures as needed to prevent water quality violations and to maintain compliance with all applicable permits. Contractor is responsible for any penalties and violations associated with water quality violations or non-compliance with SPDES Permits.

Name	
Title*	Address
Date	Telephone Number

Specific Elements of the SWPPP that Contractor is Responsible for:

Name and Title of Contractor's *Trained Individual(s)* Responsible for SWPPP Implementation:

10.0 Owner Certification

Refer to Appendix B for the Owner Certification within the Notice of Intent form.

11.0 References

New York Standards and Specifications for Erosion and Sediment Control, NYSDEC, November 2016

New York State Stormwater Management Design Manual, Center for Watershed Protection, August 2010

NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity (Permit No. GP-0-15-002), NYSDEC, January 2015

The Lower Hudson River Basin Waterbody Inventory and Priority Waterbodies List, NYSDEC, July 2008

Developing Your Stormwater Pollution Prevention Plan, USEPA, May 2007

Stormwater Menu of BMPs, USEPA, June 1, 2006

Web Soil Survey, USDA NRCS

Figures

Figure 1

Project Location Map

Appendices

Appendix A

SPDES General Permit 0-15-002

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP-0-15-002

Issued Pursuant to Article 17, Titles 7, 8 and Article 70
of the Environmental Conservation Law

Effective Date: January 29, 2015 Expiration Date: January 28, 2020

Modification Date:
July 14, 2015 – Correction of typographical error in definition of "New Development", Appendix A

November 23, 2016 – Updated to require the use of the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. The use of this standard will be required as of February 1, 2017.

John J. Ferguson
Chief Permit Administrator

Authorized Signature 11-14-16 Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York's *State Pollutant Discharge Elimination System ("SPDES")* is a NPDES-approved program with permits issued in accordance with the *Environmental Conservation Law ("ECL").*

This general permit ("permit") is issued pursuant to Article 17, Titles 7, 8 and Article 70 of the ECL. An *owner or operator* may obtain coverage under this permit by submitting a Notice of Intent ("NOI") to the Department. Copies of this permit and the NOI for New York are available by calling (518) 402-8109 or at any New York State Department of Environmental Conservation ("the Department") regional office (see Appendix G).They are also available on the Department's website at:

http://www.dec.ny.gov/

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a point source and therefore, pursuant to Article 17-0505 of the ECL, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. They cannot wait until there is an actual *discharge* from the construction site to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES
FROM CONSTRUCTION ACTIVITIES

Part I. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the Stormwater Pollution Prevention Plan ("SWPPP") the reason(s) for the deviation or alternative design and provide information

which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s to *minimize* channel and streambank erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted; and

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharge*s from dewatering activities, including *discharge*s

from dewatering of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharge*s.** The following *discharge*s are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion

at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. ***Sizing Criteria* for *New Development***

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv

that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:

(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or

(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) Overbank Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or

(2) A downstream analysis reveals that overbank control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or

(2) A downstream analysis reveals that overbank control is not required.

b. ***Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed**

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or

standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:

(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or

(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) Overbank Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that overbank control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:

(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that overbank control is not required.

c. ***Sizing Criteria* for *Redevelopment Activity***

(Part I.C.2.c.i)

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or
(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or
(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or
(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) Overbank Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(Part I.C.2.c.iv)

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

d. ***Sizing Criteria*** **for Combination of** ***Redevelopment Activity*** **and** ***New Development***

Construction projects that include both *New Development* and *Redevelopment Activity* shall provide post-construction stormwater management controls that meet the *sizing criteria* calculated as an aggregate of the *Sizing Criteria* in Part I.C.2.a. or b. of this permit for the *New Development* portion of the project and Part I.C.2.c of this permit for *Redevelopment Activity* portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or

if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater *discharges* may be authorized by this permit: *discharge*s from firefighting activities; fire hydrant flushings; waters to which cleansers or other components have not been added that are used to wash vehicles or control dust in accordance with the SWPPP, routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated *groundwater* or spring water; uncontaminated *discharge*s from construction site de-watering operations; and foundation or footing drains where flows are not contaminated with process materials such as solvents. For those entities required to obtain coverage under this permit, and who *discharge* as noted in this paragraph, and with the exception of flows from firefighting activities, these *discharges* must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

(Part I.F)

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharge*s that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an endangered or threatened species unless the *owner or operator* has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.C.2 of this permit.

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which disturb one or more acres of land with no existing *impervious cover*; and

   c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture (“USDA”) Soil Survey for the County where the disturbance will occur.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which disturb two or more acres of land with no existing *impervious cover*; and

   c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the USDA Soil Survey for the County where the disturbance will occur.

(Part I.F.8)

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.C.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the construction site within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the construction site within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:
      (i) No Affect
      (ii) No Adverse Affect

(Part I.F.8.c.iii)

(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. OBTAINING PERMIT COVERAGE

A.Notice of Intent (NOI) Submittal

1. An *owner or operator* of a *construction activity* that is <u>not</u> subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the Department in order to be authorized to *discharge* under this permit. An *owner or operator* shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address.

NOTICE OF INTENT
NYS DEC, Bureau of Water Permits
625 Broadway, 4th Floor
Albany, New York 12233-3505

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department. An *owner or operator* shall use either the electronic (eNOI) or paper version of the NOI.

   The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the address in Part II.A.1.

(Part II.A.2)

The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.E. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4*.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

B. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621) have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

   c. the final SWPPP has been prepared, and

   d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.B.2 above

(Part II.B.3)

will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

(ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

(iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. The Department may suspend or deny an *owner's or operator's* coverage

under this permit if the Department determines that the SWPPP does not meet the permit requirements. In accordance with statute, regulation, and the terms and conditions of this permit, the Department may deny coverage under this permit and require submittal of an application for an individual SPDES permit based on a review of the NOI or other information pursuant to Part II.

5. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.B. of this permit.

C. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-15-002), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, and all documentation necessary to demonstrate eligibility with this permit at the construction site until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

   a. The *owner or operator* shall

have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

5. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the *regulated, traditional land use control MS4* in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice

(Part II.D)

D. Permit Coverage for Discharges Authorized Under GP-0-10-001

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-10-001), an *owner or operator* of *a construction activity* with coverage under GP-0-10-001, as of the effective date of GP-0-15-002, shall be authorized to *discharge* in accordance with GP-0-15-002, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-15-002.

E. Change of *Owner or Operator*

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.A.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or operator* was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

(Part III)

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP:

   a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

   b. whenever there is a change in design, construction, or operation at the construction site that has or could have an effect on the *discharge* of *pollutants*; and

   c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority.

5. The Department may notify the *owner or operator* at any time that the

(Part III.A.5)

SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.C.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   > "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

   In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the

trained contractor responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the construction site. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

   a. Background information about the scope of the project, including the location, type and size of project;

   b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

   c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

   d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other

activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the construction site; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design

and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

   b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

   c. A Stormwater Modeling and Analysis Report that includes:

      (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

      (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

      (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

      (iv) Summary table, with supporting calculations, which demonstrates

that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

(v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

(vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

(Part IV)

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

(Part IV.C)

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

   b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

   c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

   d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

   a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

   b. For construction sites where soil disturbance activities are on-going and

the *owner or operator* has received authorization in accordance with Part II.C.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.A.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall

be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of *discharge* from the construction site.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the construction site. This shall include identification of any *discharges* of sediment from the construction site. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

(Part IV.C.4.i)

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.C.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.A.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

(Part V.A.2)

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

   b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

   c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.E. of this permit.

   d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

(Part V.A.5)

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

   a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

   b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

   c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

   d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION OF RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.A.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

   a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

      (i) a president, secretary, treasurer, or vice-president of the

corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named

individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any *owner or operator* authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any *discharge*r authorized by a general permit to apply for an individual SPDES permit, it shall notify the *discharge*r in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from *owner or operator* receipt of the notification letter, whereby the authorization to

discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a construction site which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the *owner's or operator's* premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

(Part VII.N)

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with *construction activity* covered by this permit, the *owner or operator* of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

APPENDIX A

Definitions

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both “sewage” and “stormwater”.

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for “*Construction Activity(ies)*” also.

***Construction Activity*(ies) -** means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a construction site by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a construction site to a separate storm sewer system and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or point source.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied

on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State
or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term “plan” in “larger common plan of development or sale” is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters,

ditches, man-made
channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*

(ii) Designed or used for collecting or conveying stormwater;

(iii) Which is not a *combined sewer*; and

(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; and/or an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York..

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is required to gain coverage under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Stream bank restoration projects (does not include the placement of spoil material),
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that makes the transition between the road shoulder and the ditch or embankment,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or embankment,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), Overbank Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Steep Slope – means land area with a Soil Slope Phase that is identified as an E or F, or

the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture (“USDA”) Soil Survey for the County where the disturbance will occur.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for point source discharges, load allocations (LAs) for nonpoint sources, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part

621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B

Required SWPPP Components by Project Type

Table 1
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other agricultural building, silo, stock yard or pen.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Bike paths and trails
- Sidewalk construction projects that are not part of a road/ highway construction or reconstruction project
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics
- Spoil areas that will be covered with vegetation
- Land clearing and grading for the purposes of creating vegetated open space (i.e. recreational parks, lawns, meadows, fields), excluding projects that *alter hydrology from pre to post development* conditions
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of less than five acres and construction activities that include the construction or reconstruction of impervious area

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

- All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other agricultural building(e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional, includes hospitals, prisons, schools and colleges
- Industrial facilities, includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's and water treatment plants
- Office complexes
- Sports complexes
- Racetracks, includes racetracks with earthen (dirt) surface
- Road construction or reconstruction
- Parking lot construction or reconstruction
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project , wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

APPENDIX C

Watersheds Where Enhanced Phosphorus Removal Standards Are Required

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River **-** Figure 1
- Onondaga Lake Watershed **-** Figure 2
- Greenwood Lake Watershed **-**Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

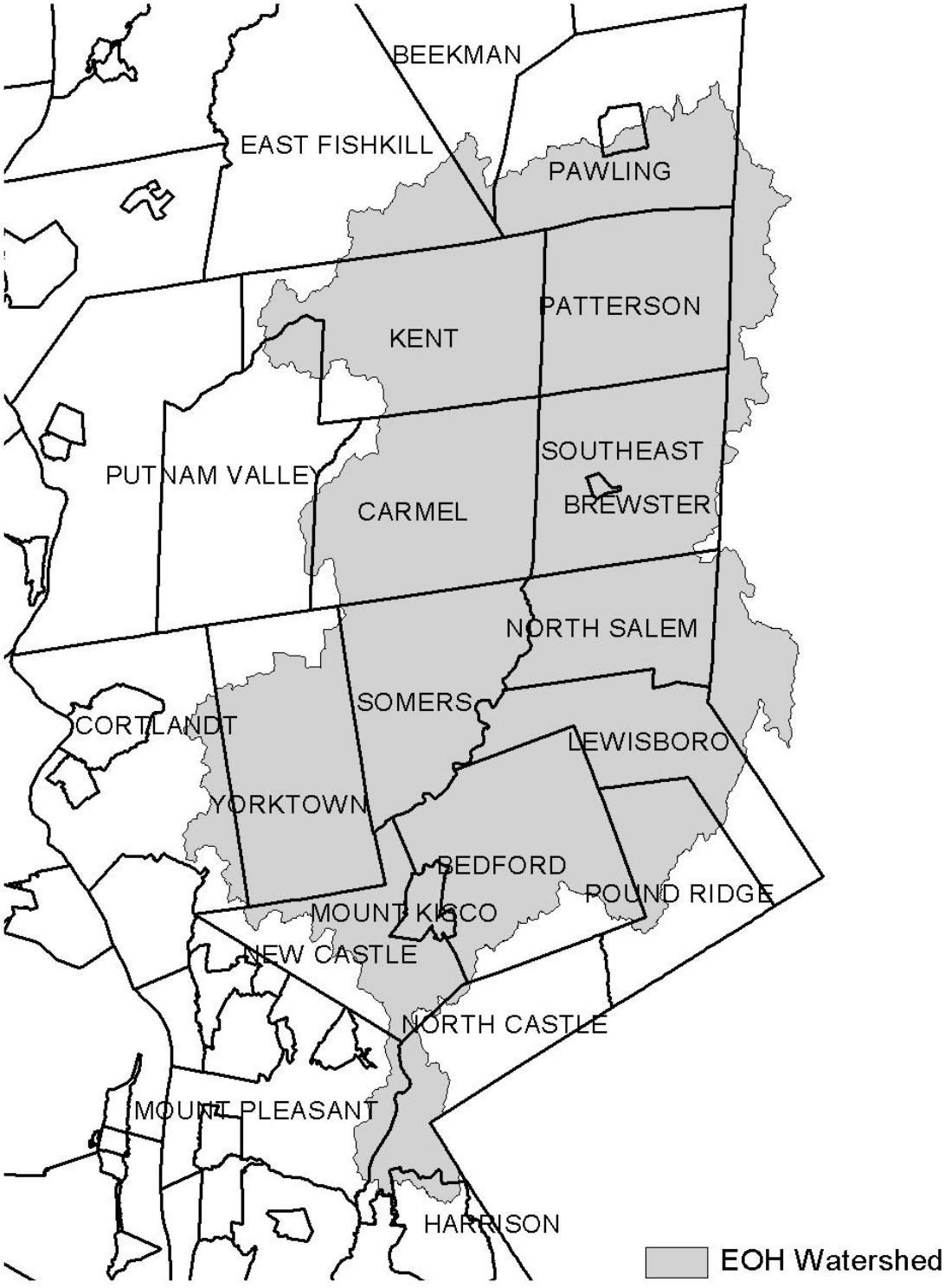


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

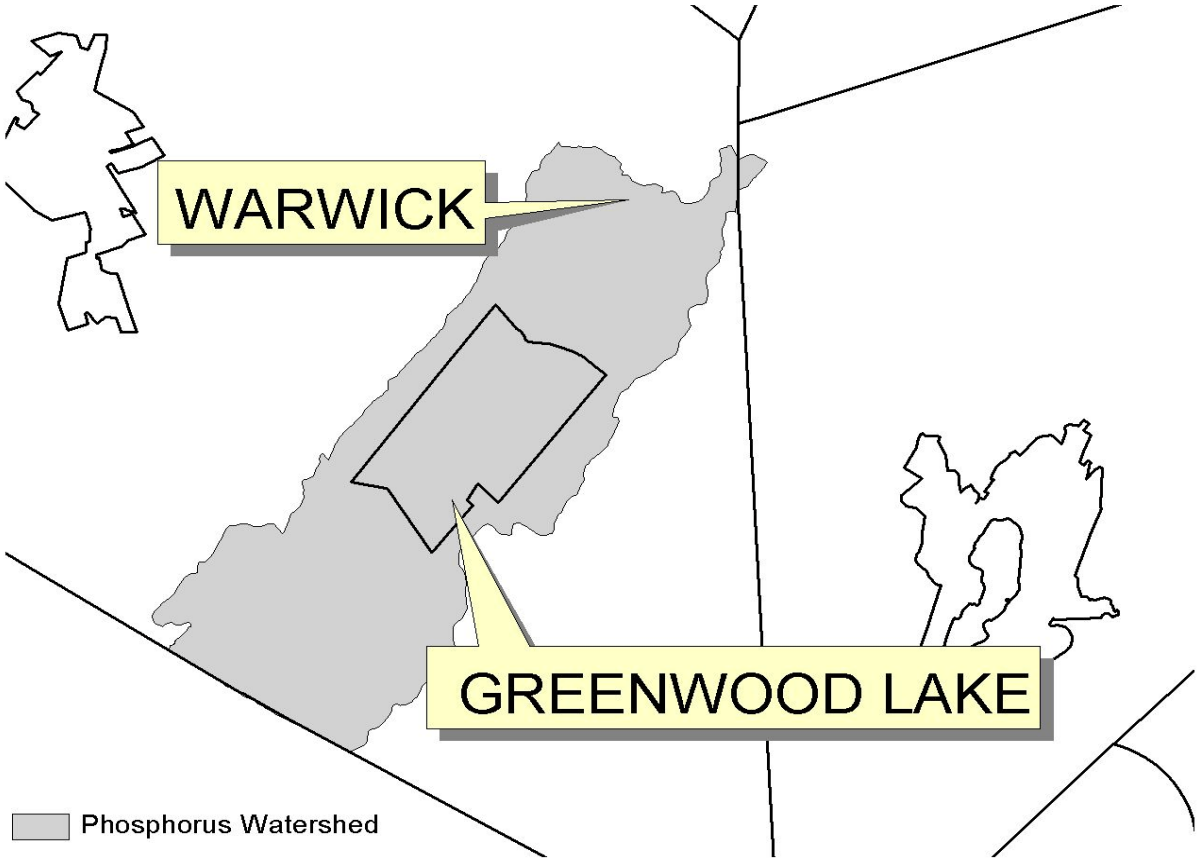


Figure 4 - Oscawana Lake Watershed

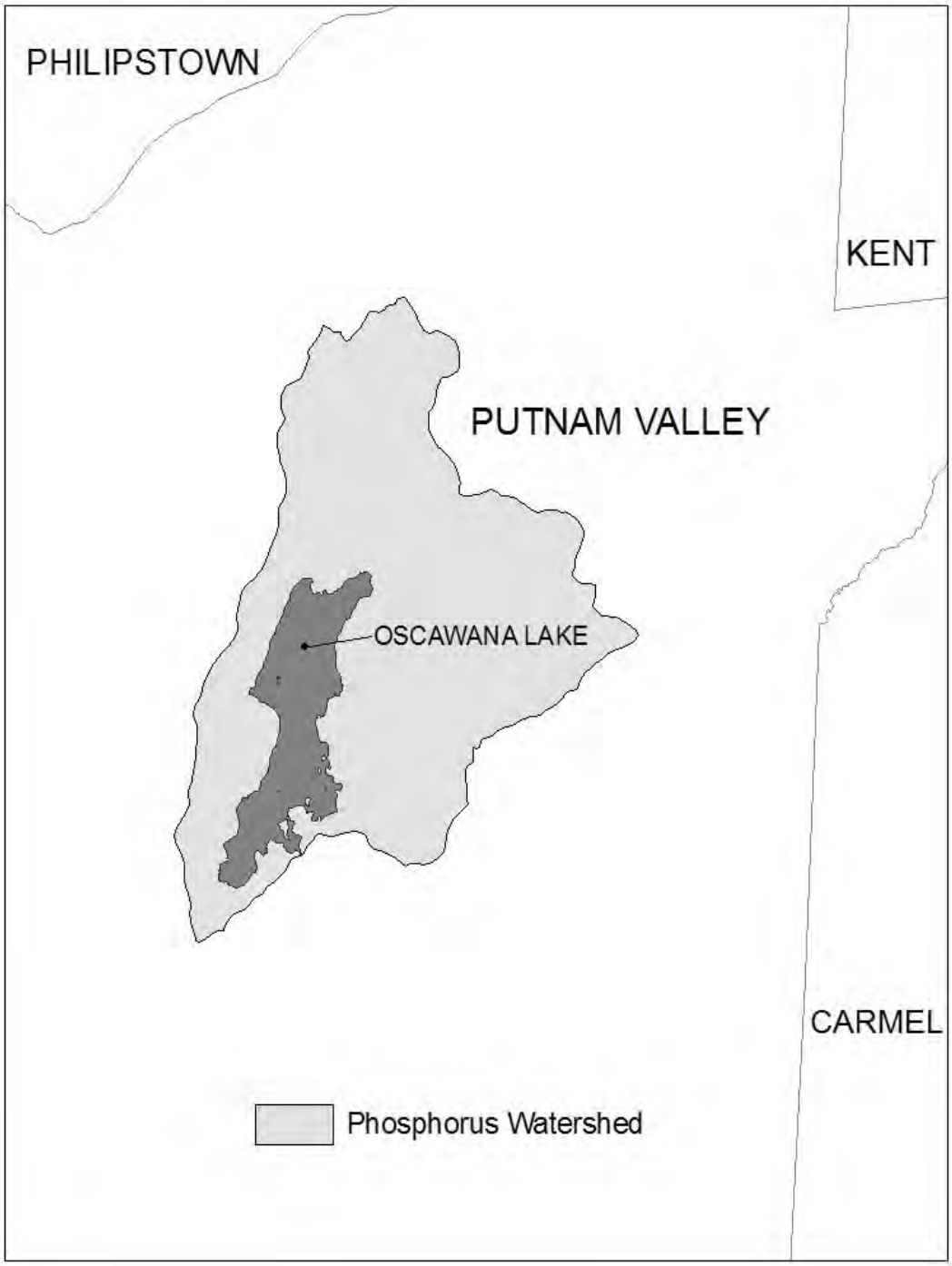
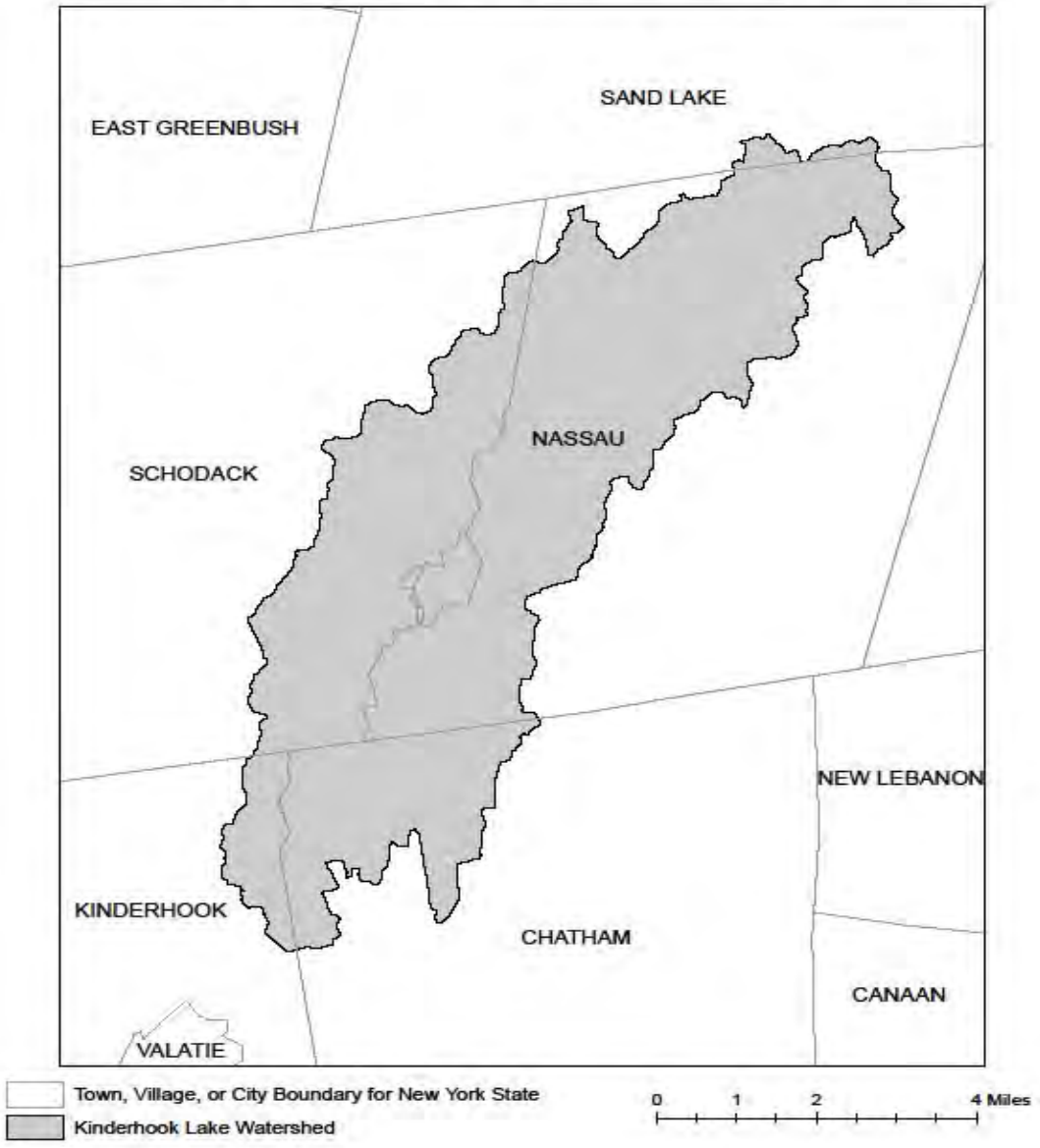


Figure 5: Kinderhook Lake Watershed



APPENDIX D

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River **-** See Figure 1 in Appendix C

APPENDIX E

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	COUNTY	WATERBODY
Albany	Ann Lee (Shakers) Pond, Stump Pond	Greene	Sleepy Hollow Lake
Albany	Basic Creek Reservoir	Herkimer	Steele Creek tribs
Allegheny	Amity Lake, Saunders Pond	Kings	Hendrix Creek
Bronx	Van Cortlandt Lake	Lewis	Mill Creek/South Branch and tribs
Broome	Whitney Point Lake/Reservoir	Livingston	Conesus Lake
Broome	Fly Pond, Deer Lake	Livingston	Jaycox Creek and tribs
Broome	Minor Tribs to Lower Susquehanna (north)	Livingston	Mill Creek and minor tribs
		Livingston	Bradner Creek and tribs
Cattaraugus	Allegheny River/Reservoir	Livingston	Christie Creek and tribs
Cattaraugus	Case Lake	Monroe	Lake Ontario Shoreline, Western
Cattaraugus	Linlyco/Club Pond	Monroe	Mill Creek/Blue Pond Outlet and tribs
Cayuga	Duck Lake	Monroe	Rochester Embayment - East
Chautauqua	Chautauqua Lake, North	Monroe	Rochester Embayment - West
Chautauqua	Chautauqua Lake, South	Monroe	Unnamed Trib to Honeoye Creek
Chautauqua	Bear Lake	Monroe	Genesee River, Lower, Main Stem
Chautauqua	Chadakoin River and tribs	Monroe	Genesee River, Middle, Main Stem
Chautauqua	Lower Cassadaga Lake	Monroe	Black Creek, Lower, and minor tribs
Chautauqua	Middle Cassadaga Lake	Monroe	Buck Pond
Chautauqua	Findley Lake	Monroe	Long Pond
Clinton	Great Chazy River, Lower, Main Stem	Monroe	Cranberry Pond
Columbia	Kinderhook Lake	Monroe	Mill Creek and tribs
Columbia	Robinson Pond	Monroe	Shipbuilders Creek and tribs
Dutchess	Hillside Lake	Monroe	Minor tribs to Irondequoit Bay
Dutchess	Wappinger Lakes	Monroe	Thomas Creek/White Brook and tribs
Dutchess	Fall Kill and tribs	Nassau	Glen Cove Creek, Lower, and tribs
Erie	Green Lake	Nassau	LI Tribs (fresh) to East Bay
Erie	Scajaquada Creek, Lower, and tribs	Nassau	East Meadow Brook, Upper, and tribs
Erie	Scajaquada Creek, Middle, and tribs	Nassau	Hempstead Bay
Erie	Scajaquada Creek, Upper, and tribs	Nassau	Hempstead Lake
Erie	Rush Creek and tribs	Nassau	Grant Park Pond
Erie	Ellicott Creek, Lower, and tribs	Nassau	Beaver Lake
Erie	Beeman Creek and tribs	Nassau	Camaans Pond
Erie	Murder Creek, Lower, and tribs	Nassau	Halls Pond
Erie	South Branch Smoke Cr, Lower, and tribs	Nassau	LI Tidal Tribs to Hempstead Bay
		Nassau	Massapequa Creek and tribs
Erie	Little Sister Creek, Lower, and tribs	Nassau	Reynolds Channel, east
Essex	Lake George (primary county: Warren)	Nassau	Reynolds Channel, west
Genesee	Black Creek, Upper, and minor tribs	Nassau	Silver Lake, Lofts Pond
Genesee	Tonawanda Creek, Middle, Main Stem	Nassau	Woodmere Channel
Genesee	Oak Orchard Creek, Upper, and tribs	Niagara	Hyde Park Lake
Genesee	Bowen Brook and tribs	Niagara	Lake Ontario Shoreline, Western
Genesee	Bigelow Creek and tribs	Niagara	Bergholtz Creek and tribs
Genesee	Black Creek, Middle, and minor tribs	Oneida	Ballou, Nail Creeks
Genesee	LeRoy Reservoir	Onondaga	Ley Creek and tribs
Greene	Schoharie Reservoir	Onondaga	Onondaga Creek, Lower and tribs

APPENDIX E

List of 303(d) segments impaired by pollutants related to construction activity, cont'd.

COUNTY	WATERBODY	COUNTY	WATERBODY
Onondaga	Onondaga Creek, Middle and tribs	Suffolk	Great South Bay, West
Onondaga	Onondaga Creek, Upp, and minor tribs	Suffolk	Mill and Seven Ponds
Onondaga	Harbor Brook, Lower, and tribs	Suffolk	Moriches Bay, East
Onondaga	Ninemile Creek, Lower, and tribs	Suffolk	Moriches Bay, West
Onondaga	Minor tribs to Onondaga Lake	Suffolk	Quantuck Bay
Onondaga	Onondaga Creek, Lower, and tribs	Suffolk	Shinnecock Bay (and Inlet)
Ontario	Honeoye Lake	Sullivan	Bodine, Montgomery Lakes
Ontario	Hemlock Lake Outlet and minor tribs	Sullivan	Davies Lake
Ontario	Great Brook and minor tribs	Sullivan	Pleasure Lake
Orange	Monhagen Brook and tribs	Sullivan	Swan Lake
Orange	Orange Lake	Tompkins	Cayuga Lake, Southern End
Orleans	Lake Ontario Shoreline, Western	Tompkins	Owasco Inlet, Upper, and tribs
Oswego	Pleasant Lake	Ulster	Ashokan Reservoir
Oswego	Lake Neatahwanta	Ulster	Esopus Creek, Upper, and minor tribs
Putnam	Oscawana Lake		
Putnam	Palmer Lake	Ulster	Esopus Creek, Lower, Main Stem
Putnam	Lake Carmel	Ulster	Esopus Creek, Middle, and minor tribs
Queens	Jamaica Bay, Eastern, and tribs (Queens)		
Queens	Bergen Basin	Warren	Lake George
Queens	Shellbank Basin	Warren	Tribs to L.George, Village of L George
Rensselaer	Nassau Lake		
Rensselaer	Snyders Lake	Warren	Huddle/Finkle Brooks and tribs
Richmond	Grasmere, Arbutus and Wolfes Lakes	Warren	Indian Brook and tribs
Rockland	Congers Lake, Swartout Lake	Warren	Hague Brook and tribs
Rockland	Rockland Lake	Washington	Tribs to L.George, East Shr Lk George
Saratoga	Ballston Lake		
Saratoga	Round Lake	Washington	Cossayuna Lake
Saratoga	Dwaas Kill and tribs	Washington	Wood Cr/Champlain Canal, minor tribs
Saratoga	Tribs to Lake Lonely		
Saratoga	Lake Lonely	Wayne	Port Bay
Schenectady	Collins Lake	Wayne	Marbletown Creek and tribs
Schenectady	Duane Lake	Westchester	Lake Katonah
Schenectady	Mariaville Lake	Westchester	Lake Mohegan
Schoharie	Engleville Pond	Westchester	Lake Shenorock
Schoharie	Summit Lake	Westchester	Reservoir No.1 (Lake Isle)
Schuyler	Cayuta Lake	Westchester	Saw Mill River, Middle, and tribs
St. Lawrence	Fish Creek and minor tribs	Westchester	Silver Lake
St. Lawrence	Black Lake Outlet/Black Lake	Westchester	Teatown Lake
Steuben	Lake Salubria	Westchester	Truesdale Lake
Steuben	Smith Pond	Westchester	Wallace Pond
Suffolk	Millers Pond	Westchester	Peach Lake
Suffolk	Mattituck (Marratooka) Pond	Westchester	Mamaroneck River, Lower
Suffolk	Tidal tribs to West Moriches Bay	Westchester	Mamaroneck River, Upp, and tribs
Suffolk	Canaan Lake	Westchester	Sheldrake River and tribs
Suffolk	Lake Ronkonkoma	Westchester	Blind Brook, Lower
Suffolk	Beaverdam Creek and tribs	Westchester	Blind Brook, Upper, and tribs
Suffolk	Big/Little Fresh Ponds	Westchester	Lake Lincolndale
Suffolk	Fresh Pond	Westchester	Lake Meahaugh
Suffolk	Great South Bay, East	Wyoming	Java Lake
Suffolk	Great South Bay, Middle	Wyoming	Silver Lake

Note: The list above identifies those waters from the final New York State "2014 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy", dated January 2015, that are impaired by silt, sediment or nutrients.

APPENDIX F

LIST OF NYS DEC REGIONAL OFFICES

Region	COVERING THE FOLLOWING COUNTIES:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS	DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM
1	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
2	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4997	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4933
3	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696 TEL. (845) 256-3059	100 HILLSIDE AVENUE, SUITE 1W WHITE PLAINS, NY 10603 TEL. (914) 428 - 2505
4	ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE	1150 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2069	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2045
5	CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON	1115 STATE ROUTE 86, PO BOX 296 RAY BROOK, NY 12977-0296 TEL. (518) 897-1234	232 GOLF COURSE ROAD WARRENSBURG, NY 12885-1172 TEL. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROAD AVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVE. BUFFALO, NY 14203-2999 TEL. (716) 851-7070

Appendix B

Notice of Intent

NOI for coverage under Stormwater General Permit for Construction Activity

version 1.18

(Submission #: 2S9-KQPH-V7RR, version 1)

PRINTED ON 10/24/2017

Summary

Submission #:	2S9-KQPH-V7RR	**Date Submitted:**	Not Submitted
Form:	NOI for coverage under Stormwater General Permit for Construction Activity version 1.18 (NOI for Ashokan Rail Trail)	**Status:**	Draft
Applicant:	Chris Hannett	**Active Steps:**	Form Submitted
Reference #:			
Description:	NOI for coverage under Stormwater General Permit for Construction Activity		

Notes
There are currently no Submission Notes.

Details

Owner/Operator Information

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)

Ulster County

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

Ulster County Commissioner of Public Works

Owner/Operator Contact Person First Name

Ulster County Commissioner of Public Works

Owner/Operator Mailing Address

313-317 Shamrock Lane

City

Kingston

State

New York

Zip

12401-2810

Phone

(845) 340-3100

Email

NONE PROVIDED

Federal Tax ID

NONE PROVIDED

Project Location

Project/Site Name

Ashokan Rail Trail

Street Address (Not P.O. Box)

Route 28

Side of Street

South

City/Town/Village (THAT ISSUES BUILDING PERMIT)

Hurley/Olive/Woodstock

State

New York

Zip

12481

County

ULSTER

DEC Region

3

Name of Nearest Cross Street

Route 28A/Reservoir Rd/Basin Rd

Distance to Nearest Cross Street (Feet)

NONE PROVIDED

Project In Relation to Cross Street

Tax Map Numbers Section-Block-Parcel

NONE PROVIDED

Tax Map Numbers

NONE PROVIDED

1. Coordinates

Provide the Geographic Coordinates for the project site. The two methods are: - Navigate to the project location on the map (below) and click to place a marker and obtain the XY coordinates. - The "Find Me" button will provide the lat/long for the person filling out this form. Then pan the map to the correct location and click the map to place a marker and obtain the XY coordinates.

Navigate to your location and click on the map to get the X,Y coordinates

41.97471027766938,-74.19776945202784

Project Details

2. What is the nature of this project?

New Construction

3. Select the predominant land use for both pre and post development conditions.

Pre-Development Existing Landuse

Other

Other

Railroad

Post-Development Future Land Use

Bike Path/Trail

3a. If Single Family Subdivision was selected in question 3, enter the number of subdivision lots.

NONE PROVIDED

4. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage)within the disturbed area. *** ROUND TO THE NEAREST TENTH OF AN ACRE. *

Total Site Area (acres)

228.5

Total Area to be Disturbed (acres)

17.5

Existing Impervious Area to be Disturbed (acres)

0

Future Impervious Area Within Disturbed Area (acres)

0

5. Do you plan to disturb more than 5 acres of soil at any one time?

No

---

6. Indicate the percentage (%) of each Hydrologic Soil Group(HSG) at the site.

A (%)

NONE PROVIDED

B (%)

NONE PROVIDED

C (%)

NONE PROVIDED

D (%)

NONE PROVIDED

7. Is this a phased project?

Yes

8. Enter the planned start and end dates of the disturbance activities.

Start Date

11/01/2017

End Date

06/28/2019

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Ashokan Reservoir,

9a. Type of waterbody identified in question 9?

Lake On Site

Other Waterbody Type Off Site Description

Terminal Reservoir

9b. If "wetland" was selected in 9A, how was the wetland identified?
Delineated by Consultant

10. Has the surface waterbody(ies in question 9 been identified as a 303(d) segment in Appendix E of GP-0-15-002?

No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-15-002?

No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters?

Yes

If No, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey?

Yes

If Yes, what is the acreage to be disturbed?

27.4

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?

Yes

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?

No

16. What is the name of the municipality/entity that owns the separate storm sewer system?

N/A

17. Does any runoff from the site enter a sewer classified as a Combined Sewer?

No

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?

No

19. Is this property owned by a state authority, state agency, federal government or local government?

No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.)

No

Required SWPPP Components

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?

Yes

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?

No

If you answered No in question 22, skip question 23 and the Post-construction Criteria and Post-construction SMP Identification sections.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual?

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

Professional Engineer (P.E.)

SWPPP Preparer

Thomas C. Baird

Contact Name (Last, Space, First)

Baird, Thomas

Mailing Address

10 Airline Drive, Suite 200

City

Albany

State

New York

Zip

12205

Phone

(518) 218-1801

Email

tbaird@bartonandloguidice.com

Download SWPPP Preparer Certification Form

Please take the following steps to prepare and upload your preparer certification form: 1) Click on the link below to download a blank certification form 2) The certified SWPPP preparer should sign this form 3) Scan the signed form 4) Upload the scanned doc

Download SWPPP Preparer Certification Form

Please upload the SWPPP Preparer Certification - Attachment

NONE PROVIDED
Comment: NONE PROVIDED

Erosion & Sediment Control Criteria

25. Has a construction sequence schedule for the planned management practices been prepared?

Yes

26. Select all of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural
Check
Dams

Construction Road Stabilization
Dust Control
Level
Spreader
Sediment Basin
Silt Fence
Stabilized Construction
Entrance
Temporary Access Waterway Crossing
Turbidity
Curtain

Biotechnical
Wattling

Vegetative Measures

Mulching
Protecting Vegetation
Seeding
Topsoiling

Permanent Structural
Land
Grading
Lined Waterway (Rock)
Riprap Slope Protection
Rock Outlet
Protection
Streambank Protection

Other

Fiberlogs

Post-Construction Criteria

* IMPORTANT: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

NONE PROVIDED

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout). (Acre-feet)

NONE
PROVIDED

29. Post-construction SMP Identification

Use the Post-construction SMP Identification section to identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity that were used to reduce the Total WQv Required (#28). Identify the SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice. Note: Redevelopment projects shall use the Post-Construction SMP Identification section

to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29. (acre-feet)

NONE PROVIDED

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28)?

If Yes, go to question 36. If No, go to question 32.

32. Provide the Minimum RRv required based on HSG. [Minimum RRv Required = (P) (0.95) (Ai) / 12, Ai=(s) (Aic)] (acre-feet)

NONE PROVIDED

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

If Yes, go to question 33.

Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP. If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. SMPs

Use the Post-construction SMP Identification section to identify the Standard SMPs and, if applicable, the Alternative SMPs to be used to treat the remaining total WQv (=Total WQv Required in #28 - Total RRv Provided in #30). Also, provide the total impervious area that contributes runoff to each practice selected. NOTE: Use the Post-construction SMP Identification section to identify the SMPs used on Redevelopment proje

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question #29. (acre-feet)

NONE PROVIDED

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).

NONE PROVIDED

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?

If Yes, go to question 36. If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria

36. Provide the total Channel Protection Storage Volume (CPv required and provided or select waiver (#36a), if applicable.

CPv Required (acre-feet)

NONE PROVIDED

CPv Provided (acre-feet)

NONE PROVIDED

36a. The need to provide channel protection has been waived because:

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (#37a), if applicable.

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)

NONE PROVIDED

Post-Development (CFS)

NONE PROVIDED

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)

NONE PROVIDED

Post-Development (CFS)

NONE PROVIDED

37a. The need to meet the Qp and Qf criteria has been waived because:

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?

If Yes, Identify the entity responsible for the long term Operation and Maintenance

NONE PROVIDED

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). (See question #32a) This space can also be used for other pertinent project information.

NONE PROVIDED

Post-Construction SMP Identification

Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs

Identify the Post-construction SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

RR Techniques (Area Reduction)

Round to the nearest tenth

Total Contributing Acres for Conservation of Natural Area (RR-1)

NONE PROVIDED

Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)

NONE PROVIDED

Total Contributing Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)

NONE PROVIDED

Total Contributing Impervious Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)

NONE PROVIDED

Total Contributing Acres for Tree Planting/Tree Pit (RR-3)

NONE PROVIDED

Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)

NONE PROVIDED

Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)

NONE PROVIDED

RR Techniques (Volume Reduction)

Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)

NONE PROVIDED

Total Contributing Impervious Acres for Vegetated Swale (RR-5)

NONE PROVIDED

Total Contributing Impervious Acres for Rain Garden (RR-6)

NONE PROVIDED

Total Contributing Impervious Acres for Stormwater Planter (RR-7)

NONE PROVIDED

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)

NONE PROVIDED

Total Contributing Impervious Acres for Porous Pavement (RR-9)

NONE PROVIDED

Total Contributing Impervious Acres for Green Roof (RR-10)

NONE PROVIDED

Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)

NONE PROVIDED

Total Contributing Impervious Acres for Infiltration Basin (I-2)

NONE PROVIDED

Total Contributing Impervious Acres for Dry Well (I-3)

NONE PROVIDED

Total Contributing Impervious Acres for Underground Infiltration System (I-4)

NONE PROVIDED

Total Contributing Impervious Acres for Bioretention (F-5)

NONE PROVIDED

Total Contributing Impervious Acres for Dry Swale (O-1)

NONE PROVIDED

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)

NONE PROVIDED

Total Contributing Impervious Acres for Wet Pond (P-2)

NONE PROVIDED

Total Contributing Impervious Acres for Wet Extended Detention (P-3)

NONE PROVIDED

Total Contributing Impervious Acres for Multiple Pond System (P-4)

NONE PROVIDED

Total Contributing Impervious Acres for Pocket Pond (P-5)

NONE PROVIDED

Total Contributing Impervious Acres for Surface Sand Filter (F-1)

NONE PROVIDED

Total Contributing Impervious Acres for Underground Sand Filter (F-2)

NONE PROVIDED

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)

NONE PROVIDED

Total Contributing Impervious Acres for Organic Filter (F-4)

NONE PROVIDED

Total Contributing Impervious Acres for Shallow Wetland (W-1)

NONE PROVIDED

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)

NONE PROVIDED

Total Contributing Impervious Acres for Pond/Wetland System (W-3)

NONE PROVIDED

Total Contributing Impervious Acres for Pocket Wetland (W-4)

NONE PROVIDED

Total Contributing Impervious Acres for Wet Swale (O-2)

NONE PROVIDED

Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Total Contributing Impervious Area for Hydrodynamic

NONE PROVIDED

Total Contributing Impervious Area for Wet Vault

NONE PROVIDED

Total Contributing Impervious Area for Media Filter

NONE PROVIDED

"Other" Alternative SMP?

NONE PROVIDED

Total Contributing Impervious Area for "Other"

NONE PROVIDED

Provide the name and manufaturer of the alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

Manufacturer of Alternative SMP

NONE PROVIDED

Name of Alternative SMP

NONE PROVIDED

Other Permits

40. Identify other DEC permits, existing and new, that are required for this project/facility.

Freshwater Wetlands/Article
24
Stream Bed or Bank Protection/Article 15

If SPDES Multi-Sector GP, then give permit ID

NONE PROVIDED

If Other, then identify

NONE PROVIDED

41. Does this project require a US Army Corps of Engineers Wetland Permit?

No

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth

NONE PROVIDED

42. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.

NONE PROVIDED

MS4 SWPPP Acceptance

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?

Yes - Please
attach the MS4 Acceptance form below

If No, skip question 44

44. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?

No

MS4 SWPPP Acceptance Form Download

Download form from the link below. Complete, sign, and upload.

MS4 SWPPP Acceptance Form

MS4 Acceptance Form Upload - Attachment

NONE
PROVIDED
Comment: NONE PROVIDED

Owner/Operator Certification

Owner/Operator Certification Form Download

Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.

Owner/Operator Certification Form (PDF, 45KB)

Upload Owner/Operator Certification Form * - Attachment

NONE
PROVIDED
Comment: NONE PROVIDED

Attachments

Date	Attachment Name	Context
None		

Status History

Date	User	Processing Status
None		

Processing Steps

Step Name	Assigned To/Completed By	Date Completed
Form Submitted		
Deemed Complete	Toni Cioffi	

Appendix C

Drainage Areas and Tc Flowpaths

(not applicable for this project)

This page intentionally left blank.

Appendix D

Water Quantity and Quality Rate and Volume Calculations (not applicable for this project)

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Appendix E

Weekly Inspection Form

Inspection Report

Stormwater Construction Site Inspection Report

General Information			
Project Name			
NPDES Tracking No.		**Location**	
Date of Inspection		**Start/End Time**	
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications			
Describe present phase of construction			
Type of Inspection: q Regular q Pre-storm event q During storm event q Post-storm event			
Weather Information			
Has there been a storm event since the last inspection? q Yes q No **If yes, provide:** Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):			
Weather at time of this inspection? q Clear q Cloudy q Rain q Sleet q Fog q Snowing q High Winds q Other: Temperature:			
Have any discharges occurred since the last inspection? q Yes q No **If yes, describe:**			
Are there any discharges at the time of inspection? q Yes q No **If yes, describe:**			

Site-specific BMPs

- *Number the structural and non-structural BMPs identified in your SWPPP on your site map and list them below (add as many BMPs as necessary). Carry a copy of the numbered site map with you during your inspections. This list will ensure that you are inspecting all required BMPs at your site.*
- *Describe corrective actions initiated, date completed, and note the person that completed the work in the Corrective Action Log.*

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
1		q Yes q No	q Yes q No	
2		q Yes q No	q Yes q No	
3		q Yes q No	q Yes q No	
4		q Yes q No	q Yes q No	
5		q Yes q No	q Yes q No	
6		q Yes q No	q Yes q No	
7		q Yes q No	q Yes q No	
8		q Yes q No	q Yes q No	
9		q Yes q No	q Yes q No	
10		q Yes q No	q Yes q No	

	BMP	BMP Installed?	BMP Maintenance Required?	Corrective Action Needed and Notes
11		q Yes q No	q Yes q No	
12		q Yes q No	q Yes q No	
13		q Yes q No	q Yes q No	
14		q Yes q No	q Yes q No	
15		q Yes q No	q Yes q No	
16		q Yes q No	q Yes q No	
17		q Yes q No	q Yes q No	
18		q Yes q No	q Yes q No	
19		q Yes q No	q Yes q No	
20		q Yes q No	q Yes q No	

Overall Site Issues

Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	q Yes q No	q Yes q No	
2	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	q Yes q No	q Yes q No	
3	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	q Yes q No	q Yes q No	
4	Are discharge points and receiving waters free of any sediment deposits?	q Yes q No	q Yes q No	
5	Are storm drain inlets properly protected?	q Yes q No	q Yes q No	
6	Is the construction exit preventing sediment from being tracked into the street?	q Yes q No	q Yes q No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	q Yes q No	q Yes q No	
8	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	q Yes q No	q Yes q No	

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	q Yes q No	q Yes q No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	q Yes q No	q Yes q No	
11	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	q Yes q No	q Yes q No	
12	(Other)	q Yes q No	q Yes q No	

Non-Compliance

Describe any incidents of non-compliance not described above:

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Print name and title: _____

Signature:_____ Date:_____

Appendix F

Corrective Action Log

BEST MANAGEMENT PRACTICE (BMP)
CORRECTIVE ACTION LOG

Project: _____

Job # _____

Inspectors _____

_____

Inspection Report Date	Date of Action Taken	BMP Corrected	Corrective Action Taken	Party Who Completed Work

By signing above:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

PRE-CONSTRUCTION INSPECTION CHECKLIST

Does the project site contain, or is located adjacent to, any of the following:

	Yes	No	Location	Comments
1. Trees to be protected?				
2. Wetlands?				
3. Steep Slopes?				
4. Waterbodies?				
5. Additional Resources?				

List Erosion and Sediment Control Practices to be installed to protect resources:

	Practices	Location
Trees		
Wetlands		
Steep Slopes		
Waterbodies		
Additional Resources		

Identify locations for the following:	Location
Stabilized Construction Entrance	
Contractor Staging Area	
Limits of Clearing and Grubbing	

	Yes	No
Are other erosion and sediment control practices required?		

If so, list additional Practices:

Inspections shall be conducted by, or under the supervision of a qualified professional, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), or a soil scientist.

EROSION AND SEDIMENT CONTROL INSPECTION LOG

PROJECT: INSPECTOR:
DATE:

REASON FOR INSPECTION: WEEKLY ☐ (See Page 4) RAINFALL > 1/2 IN. ☐ (See Page 4)
PRE-CON ☐ (See Page 3) PROJECT TERM. ☐ (See Page 5)

Date of Last Rainfall: _____ Inches of Rainfall: _____

Attach sketch (utilize sheets in Appendix A) depicting:

1. Disturbed Areas
2. Areas to be disturbed in the next 14 days.
3. Drainage Pathways
3. Areas that have undergone temporary or permanent stabilization

HAVE EROSION AND SEDIMENT CONTROL PRACTICES BEEN INSTALLED PRIOR TO START OF CONSTRUCTION AS REQUIRED?	YES NO	☐ ☐
IS THERE EVIDENCE OF EROSION AT THE SITE?	YES NO	☐ ☐
ARE ADDITIONAL MAINTENANCE PRACTICES REQUIRED TO PREVENT EROSION?	YES NO	☐ ☐

IF SO, EXPLAIN: _____

_____

IS SEDIMENT MIGRATING OFF-SITE (I.E. STREETS, WATERS, ETC.)?	YES NO	☐ ☐
WERE DEFICIENCIES NOTED PERTAINING TO THE SWPPP?	YES NO	☐ ☐

Comments _____

_____

ARE CHANGES REQUIRED TO THE SWPPP?	YES NO	☐ ☐

Comments _____

_____

****COMPLETE THE ATTACHED SITE INSPECTION CHECKLISTS FOR INDIVIDUAL PRACTICES****

Inspections shall be conducted by, or under the supervision of a qualified professional, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), or a soil scientist.

EROSION AND SEDIMENT CONTROL INSPECTION CHECKLIST				
Practice	**Location**	**Condition**	**Need Repair**	**Comments**
Site Preparation				
Stabilized Entrance		G F P	Y N	Is Sediment being tracked off-site? Y or N
Dust Control		- - -	- -	Required? Y or N
Rock Outlet Protection		G F P	Y N	Evidence of Erosion at limits of rock? Y or N
Runoff Control				
Diversion Berm *Berm to be stabilized		G F P	Y N	
Check Dams		G F P	Y N	Evidence of erosion between dams? - Y or N
Swales Circle Type - Grass Rock		G F P	Y N	Evidence of erosion in swale? Y or N
Pipe Slope Drain *Requires outlet protection		G F P	Y N	Evidence of erosion of slope? Y or N
Soil Stabilization - Required if work has ceased in area for more than 14 days				
Seeding Circle: Permanent or Temporary *Requires mulch		G F P	Y N	% of Area stabilized = _____%
Rolled Erosion Control Products *Proper stapling/Overlapping		G F P	Y N	Evidence of erosion along slope? Y or N
Sediment Control				
Sediment Basins/Traps		G F P	Y N	Depth of sediment = _____ in.
Silt Fence *Embed fabric 6" into ground		G F P	Y N	Sediment behind fence = _____ in.
Drop Inlet Protection *Remove accumulated sediment		G F P	Y N	Circle Type - Stone Excavated Fabric
Other Practices		G F P	Y N	

*Denotes Installation Requirements

Inspections shall be conducted by, or under the supervision of a qualified professional, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), or a soil scientist.

NOTICE OF TERMINATION INSPECTION CHECKLIST

	Yes	No	Comments
Is the site at least 90% stabilized? *If NO, then Notice of Termination can not be filed.*	☐	☐	
List Stabilization Methods: Vegetative - Structural -			
Have all temporary erosion and sediment control practices been removed? If NO, remove all temporary practices (i.e. silt fence, etc.)	☐	☐	
List all permanent erosion and sediment control practices that will remain at the site:			
Has an O&M Manual been prepared for permanent practices?	☐	☐	
Who is responsible for maintenance of permanent practices?			_____
Additional Comments:			

Inspections shall be conducted by, or under the supervision of a qualified professional, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), or a soil scientist.

Appendix G

Log of Changes and Updates to SWPPP

STORM WATER POLLUTION PREVENTION PLAN
UPDATE LOG

Project: _____

Job # _____

Inspectors _____

_____

Date	SWPPP Changes/Update	Comments	Signatures		
			Inspector	Contractor	P.E. / CPESC

By signing above:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

PRE-CONSTRUCTION INSPECTION CHECKLIST

Does the project site contain, or is located adjacent to, any of the following:

	Yes	No	Location	Comments
1. Trees to be protected?				
2. Wetlands?				
3. Steep Slopes?				
4. Waterbodies?				
5. Additional Resources?				

List Erosion and Sediment Control Practices to be installed to protect resources:

	Practices	Location
Trees		
Wetlands		
Steep Slopes		
Waterbodies		
Additional Resources		

Identify locations for the following:	Location
Stabilized Construction Entrance	
Contractor Staging Area	
Limits of Clearing and Grubbing	

	Yes	No
Are other erosion and sediment control practices required?		

If so, list additional Practices:

Inspections shall be conducted by, or under the supervision of a qualified professional, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), or a soil scientist.

EROSION AND SEDIMENT CONTROL INSPECTION LOG

PROJECT: INSPECTOR:
DATE:

REASON FOR INSPECTION: WEEKLY ☐ (See Page 4) RAINFALL > 1/2 IN. ☐ (See Page 4)
PRE-CON ☐ (See Page 3) PROJECT TERM. ☐ (See Page 5)

Date of Last Rainfall: _____ Inches of Rainfall: _____

Attach sketch (utilize sheets in Appendix A) depicting:

1. Disturbed Areas
2. Areas to be disturbed in the next 14 days.
3. Drainage Pathways
3. Areas that have undergone temporary or permanent stabilization

HAVE EROSION AND SEDIMENT CONTROL PRACTICES BEEN INSTALLED PRIOR TO START OF CONSTRUCTION AS REQUIRED? YES ☐ NO ☐

IS THERE EVIDENCE OF EROSION AT THE SITE? YES ☐ NO ☐

ARE ADDITIONAL MAINTENANCE PRACTICES REQUIRED TO PREVENT EROSION? YES ☐ NO ☐

IF SO, EXPLAIN: _____

_____

IS SEDIMENT MIGRATING OFF-SITE (I.E. STREETS, WATERS, ETC.)? YES ☐ NO ☐

WERE DEFICIENCIES NOTED PERTAINING TO THE SWPPP? YES ☐ NO ☐

Comments _____

_____

ARE CHANGES REQUIRED TO THE SWPPP? YES ☐ NO ☐

Comments _____

_____

****COMPLETE THE ATTACHED SITE INSPECTION CHECKLISTS FOR INDIVIDUAL PRACTICES****

Inspections shall be conducted by, or under the supervision of a qualified professional, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), or a soil scientist.

EROSION AND SEDIMENT CONTROL INSPECTION CHECKLIST				
Practice	**Location**	**Condition**	**Need Repair**	**Comments**
Site Preparation				
Stabilized Entrance		G F P	Y N	Is Sediment being tracked off-site? Y or N
Dust Control		- - -	- -	Required? Y or N
Rock Outlet Protection		G F P	Y N	Evidence of Erosion at limits of rock? Y or N
Runoff Control				
Diversion Berm *Berm to be stabilized		G F P	Y N	
Check Dams		G F P	Y N	Evidence of erosion between dams? - Y or N
Swales Circle Type - Grass Rock		G F P	Y N	Evidence of erosion in swale? Y or N
Pipe Slope Drain *Requires outlet protection		G F P	Y N	Evidence of erosion of slope? Y or N
Soil Stabilization - Required if work has ceased in area for more than 14 days				
Seeding Circle: Permanent or Temporary *Requires mulch		G F P	Y N	% of Area stabilized = _____%
Rolled Erosion Control Products *Proper stapling/Overlapping		G F P	Y N	Evidence of erosion along slope? Y or N
Sediment Control				
Sediment Basins/Traps		G F P	Y N	Depth of sediment = _____ in.
Silt Fence *Embed fabric 6" into ground		G F P	Y N	Sediment behind fence = _____ in.
Drop Inlet Protection *Remove accumulated sediment		G F P	Y N	Circle Type - Stone Excavated Fabric
Other Practices		G F P	Y N	

*Denotes Installation Requirements

Inspections shall be conducted by, or under the supervision of a qualified professional, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), or a soil scientist.

NOTICE OF TERMINATION INSPECTION CHECKLIST

	Yes	No	Comments
Is the site at least 90% stabilized? *If NO, then Notice of Termination can not be filed.*	☐	☐	
List Stabilization Methods: Vegetative - Structural -			
Have all temporary erosion and sediment control practices been removed? If NO, remove all temporary practices (i.e. silt fence, etc.)	☐	☐	
List all permanent erosion and sediment control practices that will remain at the site:			
Has an O&M Manual been prepared for permanent practices?	☐	☐	
Who is responsible for maintenance of permanent practices?			_____
Additional Comments:			

Inspections shall be conducted by, or under the supervision of a qualified professional, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), or a soil scientist.

Appendix H

Endangered Species / Wetland / Historic Preservation Documentation

Barton & Loguidice, D.P.C.

Memo To: Project File **Date:** September 22, 2017

From: Thomas Baird, P.E. and Corinne I. Steinmuller, Environmental Scientist II **Project No.:** 369.007.001

Subject: Threatened and Endangered Species Habitat Assessment
Ashokan Rail Trail

Project Area and Description

Barton & Loguidice, D.P.C. (B&L), has been retained by Ulster County to provide preliminary and final design services for the proposed Ashokan recreational trail located along the County-owned 11.5 mile abandoned railroad corridor on the northern shore of the Ashokan Reservoir spanning from Milepost K10 (Basin Road in West Hurley) to Milepost K21.5 (Route 28A overpass in Boiceville).

The project includes repurposing of the existing ballast, removal of rail, rail hardware, and deteriorated creosote rail ties, construction of two pedestrian bridges, and maintenance to existing culvert structures. The location of the project area is shown on the enclosed Figures 1 and 2, aerial and topographic mapping respectively. The project corridor can also be found on the USGS 7 ½-minute Kingston West, Ashokan, West Shokan, Bearsville, and Phoenicia quadrangles between 42° 0'20.87"N, 74°16'16.63"W and 41°59'5.60"N, 74° 5'13.93"W (NAD 83).

Areas adjacent to the project corridor consist of residential and commercial property to the north associated with NYS Route 28. To the south of the corridor, the Ashokan Reservoir serves as a drinking water source for New York City and is recreationally limited to fishing and non-motorized boat usage. The railway itself travels through mature mid-successional forest and will cross the Esopus Creek on a new bridge on the western end of the proposed trail.

Federally Protected Species

The U.S. Fish and Wildlife Service (USFWS) New York Field Office's website was reviewed to determine whether any federally listed endangered, threatened, or candidate species are known to inhabit the proposed project area. The USFWS' Information for Planning and Consulation (IPaC) System reported three federally protected species that could potentially inhabit the project corridor: the Indiana bat (*Myotis sodalis* – Endangered), the northern long-eared bat (*Myotis septentrionalis* – Threatened), and the bog turtle (*Clemmys muhlenbergii* – Threatened). A printout of the IPaC results is included as Attachment A.

Critical Habitat

A review of designated critical habitat areas within New York State was completed. No such areas exist within or adjacent to the project area.

New York State Protected Species

The Natural Heritage Program (NHP) was contacted for information regarding the reported presence of any endangered species, threatened species, species of special concern, or significant natural communities within or adjacent to the project corridor. A response was received from the NHP on July 26, 2016, which indicated three records of rare or state-listed animals or plants and significant natural communities at the site or in its immediate vicinity. The bald eagle (*Haliaeetus leucocephalus*- Threatened) was identified to have nested within 400 feet of the project corridor. An Indiana bat maternity colony was identified within 250 feet of the project corridor. Additionally, a high quality occurrence of an uncommon community type, a bluestone vernal pool, was identified .5 miles east of the corridor. The NHP's response letter is included for review as Attachment B.

Availability of Suitable Habitat

A habitat assessment of the project corridor was completed by staff of B&L's Ecology Group on June 28-29 and July 7, 2016. Proposed access road sites were assessed on May 17, 2017. The main objective of this habitat assessment was to identify the presence of any state or federally protected species within or adjacent to the project corridor, or the presence of suitable habitat for any of the reported species.

Northern long-eared and Indiana bats

These bat species select roosting trees based on the tree's location, position within the landscape, bark characteristics, and ability to provide cavities or crevices. Suitable roosting and foraging habitat for the bats includes mixed age stands of trees greater than 3" diameter at breast height (DBH), with foraging habitat containing areas of open water. These habitat requirements were observed within and adjacent to the proposed project corridor. In accordance with the 2016 Range-wide Indiana Bat Summer Survey Guidelines (this document applies to both Indiana bat and northern long-eared bats), most trees greater than 3" DBH are considered potential habitat for the northern long-eared bats, and greater than 4" DBH for the Indiana bat. The dominant tree species observed within the project corridor include: red maple (*Acer rubrum*), striped maple (*Acer pensylvanicum*), shagbark hickory (*Carya ovata*), silver maple (*Acer saccharinum*), northern red oak (*Quercus rubra*), eastern white pine (*Pinus strobus*), and American beech (*Fagus grandifolia*). Approximately 9.2 acres of woody vegetation, including shrubs <3" intermixed with larger DBH trees, are proposed for clearing. In accordance with the aforementioned USFWS resources, trees greater than 3" DBH requiring removal are to be cut between October 1st and March 31st during the conservation cutting window timelines. Project photographs showing the characteristics of the Ashokan Rail Trail project corridor are included as Attachment C.

Bald Eagle Review

The bald eagle was removed from the federal Endangered Species list in 2007, but is still afforded federal protection under the Bald and Golden Eagle Protection Act (BGEPA) and state protection under the Environmental Conservation Law. Accordingly, the project areas were assessed to determine whether potential impacts to this species may occur. During coordination with the NHP, breeding bald eagles were reported within 400 feet of the project corridor. A review of the 2000-2005 New York State Breeding Bird Atlas Survey (BBA) was also completed. Historical sightings of bald eagles were reported for the project corridor. A pair holding territory were reported for block 5664B, a singing male present in block 5664A, and nest with young in 5564B. Results of this record review are included as Attachment D. See Discussion and Effect Determination for further information.

Breeding Bird Atlas

During the review of Survey Blocks 5764A, 5664B, 5665D, 5664A, and 5564B of the 2000-2005 BBA, one NYS Threatened species and six NYS Species of Special Concern were identified as being observed near the project corridor. Table 1, below, lists bird species identified by the BBA Survey Blocks mentioned above to potentially inhabit the project corridor. Results of the Breeding Bird Atlas query are included as Attachment D.

NYSDEC Nature Explorer

Review of the NYSDEC Nature Explorer query resulted in restricted species. It is presumed these species are those reported by the NYNHP. Results of the Nature Explorer query are included as Attachment E.

Table 1: 2000-2005 New York State Breeding Bird Atlas Results- Ashokan Rail Trail

Species Name	Survey Block	Behavior Code*	NYS Legal Status	Suitable Habitat	Suitable Habitat Within proposed areas of disturbance?
Osprey (*Pandeon haliaetus*)	5764A, 5664B	X1	Special Concern	Fish dependent; located near Adirondack lakes, rivers, and wetlands. Nest at the top of dead trees or artificial nesting platforms. While these characteristics are abundant surrounding these project areas, only limited impacts are expected to these habitats due to noise during construction.	Yes
Bald eagle (*Haliaeetus leucocephalus*)	5664B, 5664A, 5564B	T2, S2, NY	Threatened	Bald eagles require large, undisturbed open-water areas such as rivers or lakes. Nests are typically built along the edge of these large waterbodies, in conifer or deciduous trees with large branches and open crowns. Observed within 400' of proposed disturbed area.	Yes
Red-shouldered hawk (*Buteo lineatus)*	5764A, 5664B, 5665D, 5564B	T2, D2, FY, X1	Special Concern	Forest birds that prefer an open sub-canopy for hunting. Can be found in suburban areas with mixed forest and housing.	Yes
American bittern (*Botaurus lentiginosus)*	5664B	P2	Special Concern	Shallow, freshwater marshes. Tend to stay hidden among dense vegetation. Freshwater wetland / marshes avoided by re-alignment of trail	No
Sharp-shinned hawk (*Accipiter striatus)*	5664B, 5564B	T2, X1	Special Concern	Birds of the forest and forest edge and are not found in areas where trees are scarce, except during migration. During the breeding season this hawk can be found in dense protected, forested stands which often contain conifers.	Yes
Whip-poor-will (*Caprimulgus vociferos*)	5664B, 5664A	D2, S2	Special Concern	Forests with open understory. Found in both deciduous and deciduous pine mix. Nest on forest floor and are strictly nocturnal.	No
Common nighthawk (*Chordeiles minor*)	5664B	X1	Special Concern	Nest on bare soil and/or rock in forest clearings, but have also been known to nest on gravel rooftops.	No

* X1= Species observed in possible nesting habitat, but no other indication of breeding noted; singing male(s) present (or breeding calls heard) in breeding season. T2= Pair apparently holding territory. In addition to territorial singing, chasing of other individuals of same species often marks a territory. S2= Singing male present (or breeding calls heard). NY= Nest with young. FY= Adults with food for young. D2= Courtship and display, agitated behavior or anxiety calls suggesting probable presence of nearby nest or young.

Discussion and Effect Determinations

Based on the site observations documented during the habitat assessment for the proposed Ashokan Rail Trail, potential effects to suitable habitats for the state or federal protected species listed for the project corridor are anticipated as discussed below.

Indiana and northern long-eared bats

Suitable bat roosting habitat was identified adjacent to the project corridor. Tree removal will be required in certain overgrown sections of trail, to remove dead and stressed Ash trees, and several areas where trees inhibit drainage or pose a threat to trail users. Tree removal required as part of this project will be completed during the Time of Year Conservation Cutting Window: October 1st to March 31st. To assist with USFWS' coordination, Phase 1 Summer Habitat Assessment forms are included in Attachment F. By adhering to the Conservation Cutting Window timelines as a protective measure, the proposed project is recommended to have a determination of May Affect, Not Likely to Adversely Affect the Indiana or northern long-eared bats. Additional Best Management Practices (BMPs) will be utilized during the duration of the project to limit impacts to freshwater resources adjacent to the project areas.

Bog turtle

The bog turtle, the smallest of the emydid turtles, spends much of the time buried in the mud and therefore has a reputation for being secretive. While they prefer fens, highly acidic wetlands and areas of soft, deep mud are considered suitable habitat. Several wetland complexes are adjacent to, but not within, the proposed areas of disturbance for the project. Two wetland complexes will be directly impacted as a result of the project. Field delineated Wetlands K and L, identified as correspondent to NYSDEC Mapped wetland AS-20, were emergent in nature but did not contain the deep mucky soils required by this species or microtopographic relief for basking. Additionally, a large patch of common reed (*Phragmites australis*) was noted as dominant which due to plant density prohibits basking. The other field delineated wetland to be impacted, identified as Wetland O, was also emergent but shaded over by the upland tree canopy, lacking the necessary sunlight and microtopographic relief for basking. Additionally, the soils were restricted at 12 inches with the presence of ballast. No impacts are expected to other wetlands delineated within the corridor. Therefore, a determination of No Effect is recommended for this threatened species.

Bald Eagle

Bald eagles prefer habitat along large bodies of water and shoreline area. The project corridor is located within close proximity to the Ashokan Reservoir. Additionally, a confirmed nest with young was reported by the BBA as well as the New York City Department of Environmental Protection and the NYNHP. It is understood that impacts may occur to this species as a result of construction noises during the nesting season. Therefore, a determination of May Affect, Not Likely to Adversely Affect is recommended for this threatened species. To avoid impact and

necessity for a BGEPA permit, it is recommended that construction that will occur within sight or 660 feet of a nest occur during the non-breeding season, from mid-September to December.

Breeding Bird Atlas Species

As described in Table 1, suitable habitat was identified for all species identified by the BBA within the corridor except for the whip poor will and common nighthawk. Both species rely on an open understory and/or clearings for nesting habitat. The corridor was largely grown up with a shrubby understory and a determination of No Effect is recommended for these species due to lack of suitable habitat.

The remaining species may be impacted by construction noise and disturbance. However, this will be temporary in nature and will not affect the habitat quality long term. A May Affect, Not Likely to Adversely Affect determination is recommended for these species.

In addition, no observations of other protected species, unique plant assemblages, or significant natural communities were noted within or adjacent to the project limits. A Species Conclusion Table is included as Attachment G to summarize the results and determinations of this assessment.

CIS/
Attachments

Figure 1

Aerial Project Corridor Map

COLDBROOK RD
YERRY HILL RD
PARK DR
WITCHTREE RD
NISSEN RD
PINEY POINT RD
OHAYO MOUNTAIN RD
STATE ROUTE 375
RYAN DR
VAN DALE RD
SHOP RD
THE RDG
BOYCE RD
MAVERICK RD
PINE ST
BOSTOCK RD
DESEO DR
PECK RD
CHASE RD
PITCAIRN RD
BOULEVARD RD
BASIN RD
PATRICK DR
BEAR RUN
WIEDY LN
BLACK RD
RUNGE RD
LONGYEAR RD
RIDGE RD
RESERVOIR RD
STATE ROUTE 28
B W S RD
SPILLWAY RD
SKEA RD
MORGAN HILL RD
SHULTIS LN
STATE ROUTE 28A
WHISPELL RD
MCMILLAN RD
BRODHEAD RD
BAKERS RD
STONE LN
FRONERS RD
INGRID LN
B W S RD
STATE HWY 28A
CHRIS LN
STONE RD
CROFTS RD
BEAVERKILL RD
UPLAND RD
REICHEL RD
DUG HILL RD
HIGH POINT RD
CROSS RD
MILL RD
STATE ROUTE 213
ATWOOD RD
STILLWATER RD
GERWIN RD
ASHOKAN RD
LAPLA RD
QUARRY RD

Legend

- Project Corridor
- Roads

Sources:----------

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

N W E S

1 inch = 4,250 feet

Ulster County

Ashokan Rail Trail Aerial Imagery

Ulster County 6/16/2016 New York

Figure -

Project No. 000.000

Figure 2

Topographic Project Corridor Map

Barton & Loguidice, D.P.C.

Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 4,250 feet

Ulster County

Ashokan Rail Trail Topographic Imagery

Ulster County 6/16/2016 New York

Figure 2

Project No. 369.007

Attachment A

U.S. Fish and Wildlife Service
Information for Planning and Consultation (IPaC)
System Results

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9349
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo/es/section7.htm

In Reply Refer To: April 25, 2017
Consultation Code: 05E1NY00-2016-SLI-1925
Event Code: 05E1NY00-2017-E-05302
Project Name: Ashokan Rail Trail

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

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: http://www.fws.gov/northeast/nyfo/es/section7.htm

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (

http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the Services wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9349
(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2016-SLI-1925

Event Code: 05E1NY00-2017-E-05302

Project Name: Ashokan Rail Trail

Project Type: TRANSPORTATION

Project Description: Barton & Loguidice, D.P.C. (B&L) has been retained by Ulster County for engineering design services for the proposed Ashokan Rail Trail. The proposed action includes the creation of an 11.5 mile recreational trail corridor on a former rail line north of the Ashokan Reservoir. The project includes repurposing the existing ballast, removal of rail ties, creation of trailheads, and maintenance to existing culvert structures.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/41.983830714078586N74.26007196592603W

Counties: Ulster, NY

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
Indiana Bat *(Myotis sodalis)* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *(Myotis septentrionalis)* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Reptiles

NAME	STATUS
Bog Turtle *(Clemmys muhlenbergii)* Population: Wherever found, except GA, NC, SC, TN, VA No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6962	Threatened

Critical habitats

There are no critical habitats within your project area.

Attachment B

Natural Heritage Program (NHP) Response

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **Fax:** (518) 402-8925
Website: www.dec.ny.gov

July 26, 2016

Corinne I. Steinmuller
Barton & Loguidice, D.P.C.
10 Airline Drive, Suite 200
Albany, NY 12205

Re: Ashokan Rail Trail (File: 369.007.001)
Town/City: Hurley, Olive. County: Ulster.

Dear Corinne Steinmuller:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur, or may occur, on your site or in the immediate vicinity of your site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

Our database is continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

Sincerely,

Andrea Chaloux

Andrea Chaloux
Environmental Review Specialist
New York Natural Heritage Program

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The following state-listed animals have been documented at your project site, or in its vicinity.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed or are candidates for federal listing.

For information about any permit considerations for your project, please contact the Permits staff at the NYSDEC Region 3 Office at dep.r3@dec.ny.gov, (845) 256-3054. For information about potential impacts of your project on these species, and how to avoid, minimize, or mitigate any impacts, contact the Region 3 Wildlife staff at Wildlife.R3@dec.ny.gov, (845) 256-3098.

The following species have been documented at your project site, or within 1 mile of the project site. Individual animals may travel 1 mile from documented locations.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Birds				
Bald Eagle	*Haliaeetus leucocephalus*	Threatened		1715, 14038, 10989
Breeding -- Breeding Bald Eagles are using an area through which the project site is proposed, and several Bald Eagle nests have been documented near the proposed project site, including one nest within 400 feet of the proposed project site.				

The following species have been documented within 250 feet of the project site. Individual animals may travel 2.5 miles from documented locations.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*FEDERAL LISTING*	
Mammals				
Indiana Bat	*Myotis sodalis*	Endangered	Endangered	11652
Maternity colony				

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.

The following rare plants, rare animals, and significant natural communities have been documented in the vicinity of your project site.

We recommend that potential onsite and offsite impacts of the proposed project on these species or communities be addressed as part of any environmental assessment or review conducted as part of the planning, permitting and approval process, such as reviews conducted under SEQR. Field surveys of the project site may be necessary to determine the status of a species at the site, particularly for sites that are currently undeveloped and may still contain suitable habitat. Final requirements of the project to avoid, minimize, or mitigate potential impacts are determined by the lead permitting agency or the government body approving the project.

The following significant natural communities are considered significant from a statewide perspective by the NY Natural Heritage Program. They are either occurrences of a community type that is rare in the state, or a high-quality example of a more common community type. By meeting specific, documented criteria, the NY Natural Heritage Program considers these community occurrences to have high ecological and conservation value.

COMMON NAME	*SCIENTIFIC NAME*	*NY STATE LISTING*	*HERITAGE CONSERVATION STATUS*
Wetland/Aquatic Communities			
Vernal Pool			High-quality Occurrence of Uncommon Community Type

Bluestone, 0.5 mi east of the project site: This is a moderate-size vernal pool complex in good condtion within a large natural landscape in very good condition. 13052

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, from NatureServe Explorer at www.natureserve.org/explorer, and from USDA's Plants Database at http://plants.usda.gov/index.html (for plants).

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. For descriptions of all community types, go to www.dec.ny.gov/animals/97703.html for Ecological Communities of New York State.

Attachment C

Project Corridor Photographs

Photo 1. Typical forested section adjacent to corridor.

Photo 2. Corridor looking west.

Photo 3. Corridor looking south.

Photo 4. Ashokan Reservoir, looking south.

Photo 5. Bank of Reservoir immediately south of corridor.

Photo 6. Corridor looking north to causeway.

Photo 7. Various tracks in mud at causeway; toe of slope from corridor.

Photo 8. View downslope looking north of corridor.

Photo 9. View looking west at proposed Espopus crossing. “Boiceville Trestle” destroyed by Tropical Storms Irene and Lee.

Photo 10. Wetland resource north of corridor, just east of Espopus crossing. Outside of ROW/proposed work.

Photo 11. Looking southeast from corridor at Reservoir.

Photo 12. Wetland K/L (NYSDEC AS-20), to be impacted.

Photo 13. Wetland K/L to be impacted. Corridor continues straight through (see people). Note large Phragmites patch on right hand side.

Photo 14. Wetland O, to be impacted. Note heavy canopy.

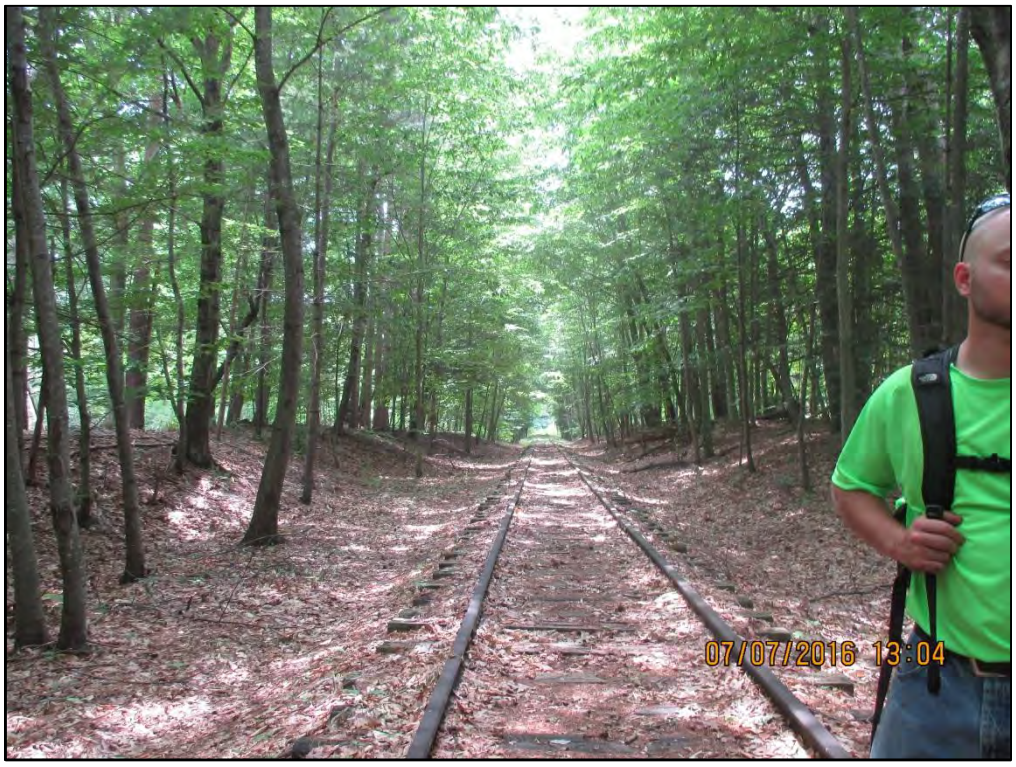

Photo 15. Corridor on western side of Espopus, looking east.

Photo 16. Patch of knotweed on western bank of Esopus at crossing.

Photo 17. Existing access road, to receive a layer of stone dust.

Photo 18. Existing access road, to receive a layer of stone dust.

Photo 19. Potential access site, looking toward NYS Route 28.

Photo 20. Potential access site, looking toward rail.

Photo 21. Former access road to be improved.

Photo 22. Former access road to be improved.

Photo 23. Potential business access site (Hotel Dylan).

Photo 24. Potential business access site (Hotel Dylan).

Photo 25. Potential business access site (Hotel Dylan).

Attachment D

2000-2005 New York State Breeding Bird Atlas Survey Results

List of Species Breeding in Atlas Block 5764A				
Common Name	Scientific Name	Behavior Code	Date	NY Legal Status
Canada Goose	*Branta canadensis*	FL	6/30/2003	Game Species
Wood Duck	*Aix sponsa*	FL	7/12/2003	Game Species
Mallard	*Anas platyrhynchos*	FL	6/17/2004	Game Species
Ruffed Grouse	*Bonasa umbellus*	X1	7/12/2003	Game Species
Wild Turkey	*Meleagris gallopavo*	FL	8/9/2002	Game Species
Great Blue Heron	*Ardea herodias*	NY	7/7/2002	Protected
Green Heron	*Butorides virescens*	NY	6/17/2004	Protected
Turkey Vulture	*Cathartes aura*	NY	6/30/2004	Protected
Osprey	*Pandion haliaetus*	X1	//2004	Protected-Special Concern
Red-shouldered Hawk	*Buteo lineatus*	X1	7/5/2002	Protected-Special Concern
Broad-winged Hawk	*Buteo platypterus*	X1	6/30/2003	Protected
Red-tailed Hawk	*Buteo jamaicensis*	FL	6/17/2004	Protected
Killdeer	*Charadrius vociferus*	NE	6/3/2003	Protected
Spotted Sandpiper	*Actitis macularius*	X1	6/30/2003	Protected
American Woodcock	*Scolopax minor*	D2	4/28/2003	Game Species
Mourning Dove	*Zenaida macroura*	FL	6/30/2003	Protected
Yellow-billed Cuckoo	*Coccyzus americanus*	S2	//2004	Protected
Black-billed Cuckoo	*Coccyzus erythropthalmus*	T2	8/15/2003	Protected
Great Horned Owl	*Bubo virginianus*	X1	6/26/2003	Protected
Chimney Swift	*Chaetura pelagica*	P2	6/30/2003	Protected
Ruby-throated Hummingbird	*Archilochus colubris*	P2	6/17/2004	Protected
Belted Kingfisher	*Megaceryle alcyon*	P2	7/5/2002	Protected
Red-bellied Woodpecker	*Melanerpes carolinus*	FL	6/17/2004	Protected
Downy Woodpecker	*Picoides pubescens*	B2	6/17/2004	Protected

Hairy Woodpecker	*Picoides villosus*	X1	7/5/2002	Protected
Northern Flicker	*Colaptes auratus*	FY	7/3/2002	Protected
Pileated Woodpecker	*Dryocopus pileatus*	B2	4/28/2003	Protected
Eastern Wood-Pewee	*Contopus virens*	D2	8/9/2002	Protected
Acadian Flycatcher	*Empidonax virescens*	P2	6/3/2003	Protected
Alder Flycatcher	*Empidonax alnorum*	X1	8/9/2002	Protected
Willow Flycatcher	*Empidonax traillii*	X1	8/15/2003	Protected
Least Flycatcher	*Empidonax minimus*	ON	6/30/2003	Protected
Eastern Phoebe	*Sayornis phoebe*	D2	8/9/2002	Protected
Great Crested Flycatcher	*Myiarchus crinitus*	D2	6/17/2004	Protected
Eastern Kingbird	*Tyrannus tyrannus*	FY	6/30/2003	Protected
Yellow-throated Vireo	*Vireo flavifrons*	S2	//2004	Protected
Blue-headed Vireo	*Vireo solitarius*	X1	7/5/2002	Protected
Warbling Vireo	*Vireo gilvus*	T2	6/30/2003	Protected
Red-eyed Vireo	*Vireo olivaceus*	T2	6/3/2003	Protected
Blue Jay	*Cyanocitta cristata*	FL	7/8/2003	Protected
American Crow	*Corvus brachyrhynchos*	FL	7/12/2003	Game Species
Tree Swallow	*Tachycineta bicolor*	P2	6/17/2004	Protected
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	FL	7/12/2003	Protected
Bank Swallow	*Riparia riparia*	NY	7/12/2003	Protected
Black-capped Chickadee	*Poecile atricapillus*	FY	7/12/2003	Protected
Tufted Titmouse	*Baeolophus bicolor*	FY	6/3/2003	Protected
White-breasted Nuthatch	*Sitta carolinensis*	S2	7/7/2002	Protected
Carolina Wren	*Thryothorus ludovicianus*	S2	6/17/2004	Protected
House Wren	*Troglodytes aedon*	NY	6/17/2004	Protected
Winter Wren	*Troglodytes troglodytes*	X1	6/26/2003	Protected

Blue-gray Gnatcatcher	*Polioptila caerulea*	FL	8/15/2003	Protected
Hermit Thrush	*Catharus guttatus*	X1	7/12/2003	Protected
Wood Thrush	*Hylocichla mustelina*	D2	7/3/2002	Protected
American Robin	*Turdus migratorius*	FY	6/26/2003	Protected
Gray Catbird	*Dumetella carolinensis*	FY	7/3/2002	Protected
Northern Mockingbird	*Mimus polyglottos*	B2	6/17/2004	Protected
Brown Thrasher	*Toxostoma rufum*	X1	7/12/2003	Protected
European Starling	*Sturnus vulgaris*	FL	6/17/2004	Unprotected
Cedar Waxwing	*Bombycilla cedrorum*	FL	7/3/2002	Protected
Yellow Warbler	*Dendroica petechia*	T2	6/17/2004	Protected
Black-throated Green Warbler	*Dendroica virens*	S2	6/26/2003	Protected
Pine Warbler	*Dendroica pinus*	S2	//2004	Protected
Prairie Warbler	*Dendroica discolor*	FL	7/8/2003	Protected
Black-and-white Warbler	*Mniotilta varia*	S2	7/7/2002	Protected
American Redstart	*Setophaga ruticilla*	P2	6/3/2003	Protected
Worm-eating Warbler	*Helmitheros vermivorum*	FL	7/5/2002	Protected
Ovenbird	*Seiurus aurocapilla*	FL	6/26/2003	Protected
Louisiana Waterthrush	*Seiurus motacilla*	X1	6/3/2003	Protected
Common Yellowthroat	*Geothlypis trichas*	FY	7/3/2002	Protected
Eastern Towhee	*Pipilo erythrophthalmus*	FL	8/15/2003	Protected
Chipping Sparrow	*Spizella passerina*	FY	7/12/2003	Protected
Clay-colored Sparrow	*Spizella pallida*	FL	7/12/2003	Protected
Song Sparrow	*Melospiza melodia*	FY	6/17/2004	Protected
Scarlet Tanager	*Piranga olivacea*	T2	7/8/2003	Protected
Northern Cardinal	*Cardinalis cardinalis*	FL	7/12/2003	Protected
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	T2	7/3/2002	Protected

Indigo Bunting	*Passerina cyanea*	FY	7/12/2003	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	FL	7/12/2003	Protected
Common Grackle	*Quiscalus quiscula*	FL	6/17/2004	Protected
Brown-headed Cowbird	*Molothrus ater*	D2	6/26/2003	Protected
Baltimore Oriole	*Icterus galbula*	FL	7/5/2002	Protected
Purple Finch	*Carpodacus purpureus*	X1	6/30/2003	Protected
House Finch	*Carpodacus mexicanus*	FL	7/12/2003	Protected
American Goldfinch	*Spinus tristis*	ON	7/31/2003	Protected
House Sparrow	*Passer domesticus*	ON	7/8/2003	Unprotected

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List of Species Breeding in Atlas Block 5664B

Common Name	Scientific Name	Behavior Code	Date	NY Legal Status
Canada Goose	*Branta canadensis*	FL	6/20/2002	Game Species
Wood Duck	*Aix sponsa*	FL	//2003	Game Species
American Black Duck	*Anas rubripes*	X1	6/20/2002	Game Species
Mallard	*Anas platyrhynchos*	FL	7/10/2002	Game Species
Common Merganser	*Mergus merganser*	P2	//2003	Game Species
Ruffed Grouse	*Bonasa umbellus*	FL	6/10/2002	Game Species
Wild Turkey	*Meleagris gallopavo*	FL	7/22/2002	Game Species
American Bittern	*Botaurus lentiginosus*	P2	8/15/2003	Protected-Special Concern
Great Blue Heron	*Ardea herodias*	T2	5/15/2004	Protected
Green Heron	*Butorides virescens*	S2	//2003	Protected
Turkey Vulture	*Cathartes aura*	X1	6/10/2002	Protected
Osprey	*Pandion haliaetus*	X1	6/7/2003	Protected-Special Concern
Bald Eagle	*Haliaeetus*	T2	7/21/2003	Threatened

	leucocephalus			
Sharp-shinned Hawk	*Accipiter striatus*	T2	7/16/2003	Protected-Special Concern
Red-shouldered Hawk	*Buteo lineatus*	D2	3/24/2002	Protected-Special Concern
Broad-winged Hawk	*Buteo platypterus*	P2	4/11/2002	Protected
Red-tailed Hawk	*Buteo jamaicensis*	D2	5/15/2003	Protected
American Kestrel	*Falco sparverius*	X1	5/31/2003	Protected
Virginia Rail	*Rallus limicola*	FL	7/13/2003	Game Species
Killdeer	*Charadrius vociferus*	T2	4/27/2002	Protected
Spotted Sandpiper	*Actitis macularius*	S2	//2003	Protected
American Woodcock	*Scolopax minor*	D2	3/17/2003	Game Species
Mourning Dove	*Zenaida macroura*	B2	4/26/2004	Protected
Yellow-billed Cuckoo	*Coccyzus americanus*	S2	6/10/2002	Protected
Eastern Screech-Owl	*Megascops asio*	X1	4/2/2003	Protected
Great Horned Owl	*Bubo virginianus*	S2	1/20/2002	Protected
Barred Owl	*Strix varia*	FL	8/9/2004	Protected
Common Nighthawk	*Chordeiles minor*	X1	5/23/2003	Protected-Special Concern
Whip-poor-will	*Caprimulgus vociferus*	D2	5/4/2002	Protected-Special Concern
Chimney Swift	*Chaetura pelagica*	B2	5/24/2003	Protected
Ruby-throated Hummingbird	*Archilochus colubris*	ON	//2002	Protected
Belted Kingfisher	*Megaceryle alcyon*	P2	//2002	Protected
Red-bellied Woodpecker	*Melanerpes carolinus*	B2	4/27/2002	Protected
Yellow-bellied Sapsucker	*Sphyrapicus varius*	X1	6/8/2001	Protected
Downy Woodpecker	*Picoides pubescens*	P2	//2003	Protected
Hairy Woodpecker	*Picoides villosus*	ON	4/26/2004	Protected
Northern Flicker	*Colaptes auratus*	T2	5/10/2003	Protected
Pileated Woodpecker	*Dryocopus pileatus*	N2	4/29/2002	Protected

Eastern Wood-Pewee	*Contopus virens*	T2	5/24/2003	Protected
Least Flycatcher	*Empidonax minimus*	X1	6/20/2002	Protected
Eastern Phoebe	*Sayornis phoebe*	NY	6/10/2002	Protected
Great Crested Flycatcher	*Myiarchus crinitus*	P2	5/1/2002	Protected
Eastern Kingbird	*Tyrannus tyrannus*	P2	6/10/2002	Protected
Yellow-throated Vireo	*Vireo flavifrons*	X1	6/8/2001	Protected
Blue-headed Vireo	*Vireo solitarius*	X1	6/8/2001	Protected
Warbling Vireo	*Vireo gilvus*	X1	//2003	Protected
Red-eyed Vireo	*Vireo olivaceus*	S2	//2003	Protected
Blue Jay	*Cyanocitta cristata*	FL	6/30/2004	Protected
American Crow	*Corvus brachyrhynchos*	N2	4/29/2002	Game Species
Fish Crow	*Corvus ossifragus*	X1	//2003	Protected
Common Raven	*Corvus corax*	FL	6/20/2002	Protected
Tree Swallow	*Tachycineta bicolor*	NE	6/10/2002	Protected
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	X1	//2003	Protected
Cliff Swallow	*Petrochelidon pyrrhonota*	X1	//2003	Protected
Barn Swallow	*Hirundo rustica*	P2	6/10/2002	Protected
Black-capped Chickadee	*Poecile atricapillus*	ON	//2002	Protected
Tufted Titmouse	*Baeolophus bicolor*	T2	3/24/2002	Protected
Red-breasted Nuthatch	*Sitta canadensis*	P2	5/15/2003	Protected
White-breasted Nuthatch	*Sitta carolinensis*	P2	4/26/2004	Protected
Brown Creeper	*Certhia americana*	B2	5/1/2002	Protected
Carolina Wren	*Thryothorus ludovicianus*	ON	7/27/2004	Protected
House Wren	*Troglodytes aedon*	ON	//2002	Protected
Winter Wren	*Troglodytes troglodytes*	S2	5/1/2002	Protected

Blue-gray Gnatcatcher	*Polioptila caerulea*	FY	7/20/2002	Protected
Eastern Bluebird	*Sialia sialis*	FL	7/9/2004	Protected
Veery	*Catharus fuscescens*	S2	//2002	Protected
Hermit Thrush	*Catharus guttatus*	S2	4/29/2002	Protected
Wood Thrush	*Hylocichla mustelina*	T2	5/1/2002	Protected
American Robin	*Turdus migratorius*	FY	6/10/2002	Protected
Gray Catbird	*Dumetella carolinensis*	ON	//2002	Protected
Northern Mockingbird	*Mimus polyglottos*	T2	4/29/2002	Protected
European Starling	*Sturnus vulgaris*	NY	5/15/2003	Unprotected
Cedar Waxwing	*Bombycilla cedrorum*	S2	//2003	Protected
Yellow-rumped Warbler	*Dendroica coronata*	X1	6/8/2001	Protected
Pine Warbler	*Dendroica pinus*	T2	7/28/2001	Protected
Black-and-white Warbler	*Mniotilta varia*	X1	6/8/2001	Protected
American Redstart	*Setophaga ruticilla*	T2	5/1/2002	Protected
Worm-eating Warbler	*Helmitheros vermivorum*	P2	6/10/2002	Protected
Ovenbird	*Seiurus aurocapilla*	B2	5/15/2004	Protected
Louisiana Waterthrush	*Seiurus motacilla*	X1	//2003	Protected
Kentucky Warbler	*Oporornis formosus*	B2	7/12/2003	Protected
Common Yellowthroat	*Geothlypis trichas*	ON	6/10/2002	Protected
Canada Warbler	*Wilsonia canadensis*	X1	6/8/2001	Protected
Eastern Towhee	*Pipilo erythrophthalmus*	T2	7/10/2002	Protected
Chipping Sparrow	*Spizella passerina*	FY	6/10/2002	Protected
Field Sparrow	*Spizella pusilla*	ON	6/10/2002	Protected
Song Sparrow	*Melospiza melodia*	S2	3/24/2002	Protected
White-throated Sparrow	*Zonotrichia albicollis*	X1	//2003	Protected
Scarlet Tanager	*Piranga olivacea*	ON	7/10/2002	Protected

Northern Cardinal	*Cardinalis cardinalis*	B2	5/30/2003	Protected
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	T2	6/19/2004	Protected
Indigo Bunting	*Passerina cyanea*	D2	7/14/2002	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	ON	5/15/2004	Protected
Common Grackle	*Quiscalus quiscula*	X1	5/25/2003	Protected
Brown-headed Cowbird	*Molothrus ater*	D2	5/1/2002	Protected
Orchard Oriole	*Icterus spurius*	T2	5/27/2004	Protected
Baltimore Oriole	*Icterus galbula*	FS	6/10/2002	Protected
Purple Finch	*Carpodacus purpureus*	S2	4/29/2002	Protected
House Finch	*Carpodacus mexicanus*	D2	6/16/2003	Protected
American Goldfinch	*Spinus tristis*	FL	6/22/2003	Protected
House Sparrow	*Passer domesticus*	ON	5/24/2003	Unprotected

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List of Species Breeding in Atlas Block 5665D

Common Name	Scientific Name	Behavior Code	Date	NY Legal Status
Canada Goose	*Branta canadensis*	FL	6/3/2001	Game Species
Mallard	*Anas platyrhynchos*	FL	6/5/2001	Game Species
Wild Turkey	*Meleagris gallopavo*	FL	7/19/2001	Game Species
Great Blue Heron	*Ardea herodias*	FY	6/13/2001	Protected
Red-shouldered Hawk	*Buteo lineatus*	FY	7/3/2001	Protected-Special Concern
Red-tailed Hawk	*Buteo jamaicensis*	N2	7/15/2001	Protected
American Kestrel	*Falco sparverius*	X1	6/25/2001	Protected
Rock Pigeon	*Columba livia*	ON	7/2/2001	Unprotected
Mourning Dove	*Zenaida macroura*	P2	7/19/2001	Protected
Eastern Screech-	*Megascops asio*	X1	5/20/2001	Protected

Owl				
Great Horned Owl	*Bubo virginianus*	S2	5/30/2001	Protected
Barred Owl	*Strix varia*	X1	5/20/2001	Protected
Chimney Swift	*Chaetura pelagica*	FL	6/25/2001	Protected
Ruby-throated Hummingbird	*Archilochus colubris*	FY	7/22/2001	Protected
Red-bellied Woodpecker	*Melanerpes carolinus*	FY	7/22/2001	Protected
Yellow-bellied Sapsucker	*Sphyrapicus varius*	FY	6/5/2001	Protected
Downy Woodpecker	*Picoides pubescens*	FL	6/12/2001	Protected
Hairy Woodpecker	*Picoides villosus*	FL	7/20/2001	Protected
Northern Flicker	*Colaptes auratus*	N2	6/25/2001	Protected
Pileated Woodpecker	*Dryocopus pileatus*	S2	7/2/2001	Protected
Eastern Wood-Pewee	*Contopus virens*	X1	6/25/2001	Protected
Eastern Phoebe	*Sayornis phoebe*	NE	7/3/2001	Protected
Great Crested Flycatcher	*Myiarchus crinitus*	NY	7/3/2001	Protected
Eastern Kingbird	*Tyrannus tyrannus*	S2	6/25/2001	Protected
Red-eyed Vireo	*Vireo olivaceus*	FL	7/15/2001	Protected
Blue Jay	*Cyanocitta cristata*	FY	7/15/2001	Protected
American Crow	*Corvus brachyrhynchos*	FL	7/28/2001	Game Species
Tree Swallow	*Tachycineta bicolor*	FY	6/5/2001	Protected
Cliff Swallow	*Petrochelidon pyrrhonota*	FY	7/2/2001	Protected
Barn Swallow	*Hirundo rustica*	FL	7/2/2001	Protected
Black-capped Chickadee	*Poecile atricapillus*	FY	7/20/2001	Protected
Tufted Titmouse	*Baeolophus bicolor*	NY	6/5/2001	Protected
Red-breasted Nuthatch	*Sitta canadensis*	ON	6/21/2001	Protected

White-breasted Nuthatch	*Sitta carolinensis*	FY	6/25/2001	Protected
Carolina Wren	*Thryothorus ludovicianus*	FY	6/21/2001	Protected
House Wren	*Troglodytes aedon*	NE	6/18/2001	Protected
Eastern Bluebird	*Sialia sialis*	FL	6/5/2001	Protected
Veery	*Catharus fuscescens*	X1	6/25/2001	Protected
Wood Thrush	*Hylocichla mustelina*	NY	6/25/2001	Protected
American Robin	*Turdus migratorius*	FL	5/30/2001	Protected
Gray Catbird	*Dumetella carolinensis*	ON	6/16/2001	Protected
Northern Mockingbird	*Mimus polyglottos*	S2	5/30/2001	Protected
Brown Thrasher	*Toxostoma rufum*	FL	7/19/2001	Protected
European Starling	*Sturnus vulgaris*	FL	6/10/2001	Unprotected
Yellow Warbler	*Dendroica petechia*	N2	6/25/2001	Protected
American Redstart	*Setophaga ruticilla*	S2	6/28/2001	Protected
Ovenbird	*Seiurus aurocapilla*	S2	6/25/2001	Protected
Common Yellowthroat	*Geothlypis trichas*	FY	6/25/2001	Protected
Eastern Towhee	*Pipilo erythrophthalmus*	S2	6/28/2001	Protected
Chipping Sparrow	*Spizella passerina*	NE	7/15/2001	Protected
Field Sparrow	*Spizella pusilla*	FY	6/28/2001	Protected
Song Sparrow	*Melospiza melodia*	ON	6/28/2001	Protected
Dark-eyed Junco	*Junco hyemalis*	NE	6/28/2001	Protected
Scarlet Tanager	*Piranga olivacea*	S2	6/28/2001	Protected
Northern Cardinal	*Cardinalis cardinalis*	FL	7/19/2001	Protected
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	P2	7/22/2001	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	FY	7/19/2001	Protected
Common Grackle	*Quiscalus quiscula*	FL	7/15/2001	Protected
Brown-headed	*Molothrus ater*	FL	7/15/2001	Protected

Cowbird				
Baltimore Oriole	*Icterus galbula*	S2	6/15/2001	Protected
Purple Finch	*Carpodacus purpureus*	X1	6/5/2001	Protected
House Finch	*Carpodacus mexicanus*	FY	7/19/2001	Protected
American Goldfinch	*Spinus tristis*	FY	8/25/2001	Protected
House Sparrow	*Passer domesticus*	ON	7/19/2001	Unprotected

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List of Species Breeding in Atlas Block 5664A

Common Name	Scientific Name	Behavior Code	Date	NY Legal Status
Canada Goose	*Branta canadensis*	FL	6/2/2000	Game Species
Wood Duck	*Aix sponsa*	FL	6/2/2000	Game Species
American Black Duck	*Anas rubripes*	X1	//2002	Game Species
Mallard	*Anas platyrhynchos*	FL	6/2/2000	Game Species
Common Merganser	*Mergus merganser*	FL	6/2/2000	Game Species
Wild Turkey	*Meleagris gallopavo*	X1	6/2/2000	Game Species
Great Blue Heron	*Ardea herodias*	X1	6/2/2000	Protected
Green Heron	*Butorides virescens*	FL	6/2/2000	Protected
Bald Eagle	*Haliaeetus leucocephalus*	S2	//2002	Threatened
Spotted Sandpiper	*Actitis macularius*	X1	//2002	Protected
Mourning Dove	*Zenaida macroura*	S2	//2002	Protected
Barred Owl	*Strix varia*	X1	//2004	Protected
Whip-poor-will	*Caprimulgus vociferus*	S2	//2004	Protected-Special Concern
Chimney Swift	*Chaetura pelagica*	X1	//2004	Protected
Ruby-throated Hummingbird	*Archilochus colubris*	X1	//2002	Protected
Belted Kingfisher	*Megaceryle alcyon*	X1	6/2/2000	Protected

Red-bellied Woodpecker	*Melanerpes carolinus*	S2	//2002	Protected
Yellow-bellied Sapsucker	*Sphyrapicus varius*	X1	6/2/2000	Protected
Downy Woodpecker	*Picoides pubescens*	S2	//2004	Protected
Hairy Woodpecker	*Picoides villosus*	X1	5/29/2001	Protected
Northern Flicker	*Colaptes auratus*	P2	6/2/2000	Protected
Pileated Woodpecker	*Dryocopus pileatus*	S2	//2002	Protected
Eastern Wood-Pewee	*Contopus virens*	S2	//2002	Protected
Least Flycatcher	*Empidonax minimus*	S2	//2004	Protected
Eastern Phoebe	*Sayornis phoebe*	X1	5/29/2001	Protected
Great Crested Flycatcher	*Myiarchus crinitus*	S2	//2002	Protected
Eastern Kingbird	*Tyrannus tyrannus*	X1	//2004	Protected
Blue-headed Vireo	*Vireo solitarius*	X1	5/29/2001	Protected
Warbling Vireo	*Vireo gilvus*	S2	//2004	Protected
Red-eyed Vireo	*Vireo olivaceus*	S2	//2002	Protected
Blue Jay	*Cyanocitta cristata*	X1	6/2/2000	Protected
American Crow	*Corvus brachyrhynchos*	X1	6/2/2000	Game Species
Fish Crow	*Corvus ossifragus*	X1	//2004	Protected
Tree Swallow	*Tachycineta bicolor*	FL	6/27/2003	Protected
Cliff Swallow	*Petrochelidon pyrrhonota*	X1	//2002	Protected
Black-capped Chickadee	*Poecile atricapillus*	S2	//2002	Protected
Tufted Titmouse	*Baeolophus bicolor*	S2	//2002	Protected
White-breasted Nuthatch	*Sitta carolinensis*	S2	//2002	Protected
Brown Creeper	*Certhia americana*	S2	//2002	Protected
House Wren	*Troglodytes aedon*	X1	6/2/2000	Protected
Blue-gray Gnatcatcher	*Polioptila caerulea*	X1	//2004	Protected
Veery	*Catharus*	S2	//2002	Protected

	fuscescens			
Wood Thrush	*Hylocichla mustelina*	S2	//2002	Protected
American Robin	*Turdus migratorius*	FY	//2004	Protected
Gray Catbird	*Dumetella carolinensis*	X1	6/2/2000	Protected
Cedar Waxwing	*Bombycilla cedrorum*	S2	//2002	Protected
Yellow Warbler	*Dendroica petechia*	X1	6/2/2000	Protected
Yellow-rumped Warbler	*Dendroica coronata*	X1	6/2/2000	Protected
Black-throated Green Warbler	*Dendroica virens*	X1	//2002	Protected
Blackburnian Warbler	*Dendroica fusca*	X1	//2002	Protected
Black-and-white Warbler	*Mniotilta varia*	X1	//2004	Protected
American Redstart	*Setophaga ruticilla*	S2	//2004	Protected
Worm-eating Warbler	*Helmitheros vermivorum*	S2	//2002	Protected
Ovenbird	*Seiurus aurocapilla*	S2	//2002	Protected
Louisiana Waterthrush	*Seiurus motacilla*	X1	6/27/2003	Protected
Common Yellowthroat	*Geothlypis trichas*	X1	6/2/2000	Protected
Chipping Sparrow	*Spizella passerina*	X1	//2002	Protected
Song Sparrow	*Melospiza melodia*	NE	6/2/2000	Protected
Scarlet Tanager	*Piranga olivacea*	S2	//2002	Protected
Northern Cardinal	*Cardinalis cardinalis*	X1	//2002	Protected
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	X1	6/2/2000	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	P2	6/2/2000	Protected
Common Grackle	*Quiscalus quiscula*	FY	//2004	Protected
Brown-headed Cowbird	*Molothrus ater*	X1	6/2/2000	Protected
Baltimore Oriole	*Icterus galbula*	S2	//2004	Protected

American Goldfinch	*Spinus tristis*	X1	//2002	Protected

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List of Species Breeding in Atlas Block 5564B

Common Name	Scientific Name	Behavior Code	Date	NY Legal Status
Canada Goose	*Branta canadensis*	FL	//2004	Game Species
Mallard	*Anas platyrhynchos*	X1	6/15/2004	Game Species
Common Merganser	*Mergus merganser*	FL	6/15/2001	Game Species
Wild Turkey	*Meleagris gallopavo*	FL	6/15/2004	Game Species
Great Blue Heron	*Ardea herodias*	X1	5/6/2000	Protected
Green Heron	*Butorides virescens*	X1	6/24/2004	Protected
Turkey Vulture	*Cathartes aura*	X1	6/24/2004	Protected
Bald Eagle	*Haliaeetus leucocephalus*	NY	//2002	Threatened
Sharp-shinned Hawk	*Accipiter striatus*	X1	//2004	Protected-Special Concern
Red-shouldered Hawk	*Buteo lineatus*	X1	6/15/2004	Protected-Special Concern
Broad-winged Hawk	*Buteo platypterus*	FL	7/3/2005	Protected
Red-tailed Hawk	*Buteo jamaicensis*	FL	7/2/2004	Protected
American Kestrel	*Falco sparverius*	X1	5/6/2000	Protected
Killdeer	*Charadrius vociferus*	X1	6/21/2005	Protected
Spotted Sandpiper	*Actitis macularius*	X1	7/5/2002	Protected
Rock Pigeon	*Columba livia*	X1	7/5/2002	Unprotected
Mourning Dove	*Zenaida macroura*	FL	6/21/2005	Protected
Yellow-billed Cuckoo	*Coccyzus americanus*	X1	7/3/2005	Protected
Black-billed Cuckoo	*Coccyzus erythropthalmus*	X1	6/15/2004	Protected
Ruby-throated Hummingbird	*Archilochus colubris*	X1	6/24/2004	Protected

Belted Kingfisher	*Megaceryle alcyon*	X1	//2004	Protected
Red-bellied Woodpecker	*Melanerpes carolinus*	FY	6/15/2001	Protected
Yellow-bellied Sapsucker	*Sphyrapicus varius*	NY	7/3/2005	Protected
Downy Woodpecker	*Picoides pubescens*	X1	5/6/2000	Protected
Hairy Woodpecker	*Picoides villosus*	FL	6/24/2004	Protected
Northern Flicker	*Colaptes auratus*	FL	7/18/2004	Protected
Pileated Woodpecker	*Dryocopus pileatus*	X1	5/6/2000	Protected
Eastern Wood-Pewee	*Contopus virens*	S2	7/2/2004	Protected
Least Flycatcher	*Empidonax minimus*	S2	6/21/2005	Protected
Eastern Phoebe	*Sayornis phoebe*	UN	6/15/2004	Protected
Great Crested Flycatcher	*Myiarchus crinitus*	T2	7/18/2004	Protected
Eastern Kingbird	*Tyrannus tyrannus*	DD	6/24/2004	Protected
Yellow-throated Vireo	*Vireo flavifrons*	X1	5/6/2000	Protected
Blue-headed Vireo	*Vireo solitarius*	P2	5/6/2000	Protected
Warbling Vireo	*Vireo gilvus*	DD	6/21/2005	Protected
Red-eyed Vireo	*Vireo olivaceus*	FL	7/3/2005	Protected
Blue Jay	*Cyanocitta cristata*	FY	6/20/2004	Protected
American Crow	*Corvus brachyrhynchos*	FL	6/15/2004	Game Species
Common Raven	*Corvus corax*	X1	5/6/2000	Protected
Tree Swallow	*Tachycineta bicolor*	FL	6/15/2004	Protected
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	X1	6/21/2005	Protected
Cliff Swallow	*Petrochelidon pyrrhonota*	ON	6/21/2005	Protected
Barn Swallow	*Hirundo rustica*	NY	6/15/2004	Protected
Black-capped Chickadee	*Poecile atricapillus*	FL	6/24/2004	Protected
Tufted Titmouse	*Baeolophus bicolor*	FL	6/15/2004	Protected
Red-breasted Nuthatch	*Sitta canadensis*	X1	5/6/2000	Protected

White-breasted Nuthatch	*Sitta carolinensis*	FL	6/20/2004	Protected
Brown Creeper	*Certhia americana*	S2	//2004	Protected
Carolina Wren	*Thryothorus ludovicianus*	D2	7/12/2004	Protected
House Wren	*Troglodytes aedon*	DD	6/21/2005	Protected
Blue-gray Gnatcatcher	*Polioptila caerulea*	X1	7/12/2004	Protected
Eastern Bluebird	*Sialia sialis*	FL	7/18/2004	Protected
Veery	*Catharus fuscescens*	S2	//2004	Protected
Hermit Thrush	*Catharus guttatus*	S2	7/12/2004	Protected
Wood Thrush	*Hylocichla mustelina*	FY	6/21/2005	Protected
American Robin	*Turdus migratorius*	FL	6/15/2004	Protected
Gray Catbird	*Dumetella carolinensis*	FY	6/15/2004	Protected
Brown Thrasher	*Toxostoma rufum*	X1	6/15/2004	Protected
European Starling	*Sturnus vulgaris*	FL	6/15/2004	Unprotected
Cedar Waxwing	*Bombycilla cedrorum*	B2	6/15/2004	Protected
Blue-winged Warbler	*Vermivora pinus*	X1	5/6/2000	Protected
Yellow Warbler	*Dendroica petechia*	S2	6/20/2004	Protected
Chestnut-sided Warbler	*Dendroica pensylvanica*	X1	7/12/2004	Protected
Black-throated Blue Warbler	*Dendroica caerulescens*	X1	7/5/2002	Protected
Yellow-rumped Warbler	*Dendroica coronata*	FY	7/3/2005	Protected
Black-throated Green Warbler	*Dendroica virens*	FY	7/2/2004	Protected
Blackburnian Warbler	*Dendroica fusca*	S2	7/12/2004	Protected
Pine Warbler	*Dendroica pinus*	X1	6/15/2001	Protected
Black-and-white Warbler	*Mniotilta varia*	S2	//2004	Protected
American Redstart	*Setophaga ruticilla*	S2	6/24/2004	Protected
Ovenbird	*Seiurus aurocapilla*	T2	7/2/2004	Protected

Northern Waterthrush	*Seiurus noveboracensis*	X1	6/15/2001	Protected
Louisiana Waterthrush	*Seiurus motacilla*	FY	7/3/2005	Protected
Common Yellowthroat	*Geothlypis trichas*	FL	7/18/2004	Protected
Eastern Towhee	*Pipilo erythrophthalmus*	P2	7/18/2004	Protected
Chipping Sparrow	*Spizella passerina*	FL	6/15/2004	Protected
Song Sparrow	*Melospiza melodia*	DD	7/12/2004	Protected
White-throated Sparrow	*Zonotrichia albicollis*	X1	5/6/2000	Protected
Dark-eyed Junco	*Junco hyemalis*	X1	5/6/2000	Protected
Scarlet Tanager	*Piranga olivacea*	S2	6/24/2004	Protected
Northern Cardinal	*Cardinalis cardinalis*	S2	6/24/2004	Protected
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	P2	7/18/2004	Protected
Indigo Bunting	*Passerina cyanea*	DD	7/3/2005	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	FL	6/15/2004	Protected
Common Grackle	*Quiscalus quiscula*	FY	6/15/2004	Protected
Brown-headed Cowbird	*Molothrus ater*	FL	7/3/2005	Protected
Baltimore Oriole	*Icterus galbula*	FY	6/21/2005	Protected
Purple Finch	*Carpodacus purpureus*	X1	7/12/2004	Protected
House Finch	*Carpodacus mexicanus*	FL	6/21/2005	Protected
American Goldfinch	*Spinus tristis*	P2	7/12/2004	Protected
House Sparrow	*Passer domesticus*	ON	6/15/2004	Unprotected

Current Date: 6/22/2016

Attachment E

NYS Department of Environmental Conservation (NYSDEC) Nature Explorer Results

USER DEFINED SEARCH RESULTS

Map | Filter | Print Report

Legend

- Major Cities
- Interstates
- Streets
- Natural Communities
- Rare Plants and Animals (Generalized)
- Counties
- Streams and Rivers
  - Stream, River
- Waterbodies - Small

Criteria: Selected Map Area

Refine Search | Export Results | Create PDF Report

Common Name / *Scientific Name*	Subgroup	Town Distribution Status	Town Year Last Documented	Protection Status		Conservation Rank	
				State	Federal	State	Global
No Records Found							

Note: Restricted plants and animals have also been documented in one or more of the Towns or Cities in which your user-defined area is located, **but are not listed in these results.** This application does **not** provide information at the level of Town or City on state-listed animals and on other sensitive animals and plants. See a list of the restricted animals and plants documented from the following counties: Ulster. **Any individual plant or animal on this county's restricted list may or may not occur in this particular user-defined area.**

This list only includes records of rare species and significant natural communities from the databases of the NY Natural Heritage Program. This list is not a definitive statement about the presence or absence of all plants and animals, including rare or state-listed species, or of all significant natural communities. For most areas, comprehensive field surveys have not been conducted, and this list should not be considered a substitute for on-site surveys.

Attachment F

Bat Habitat Assessment Form

APPENDIX A
PHASE 1 SUMMER HABITAT ASSESSMENTS

INDIANA BAT HABITAT ASSESSMENT DATASHEET

Project Name: Ashokan Rail Trail
Date: 6/28-6/29/16, 7/7/16, 5/17/17
Township/Range/Section: Hurley and Olive
Lat Long/UTM/ Zone: Between 42° 0'20.87"N, 74°16'16.63"W and 41°59'5.60"N, 74° 5'13.93"W (NAD 83).
Surveyor: Johanna Duffy, CWB
Corinne Steinmuller

Brief Project Description

Ulster County is proposing the construction of an 11.5-mile pedestrian and bicycle trail which will run from Basin Road in the Town of Hurley to NYS Route 28A in the Town of Olive. The proposed action includes the creation of a recreational trail corridor on a former rail line north of the Ashokan Reservoir.

Project Area

	Total Acres	Forest Acres	Open Acres
Project	56	40	16

Proposed Tree Removal (ac)	Completely cleared	Partially cleared (will leave trees)	Preserve acres- no clearing
		9.2	

Vegetation Cover Types

Pre-Project	Post-Project
Forested	Forested

Landscape within 5 mile radius

Flight corridors to other forested areas?
Yes

Describe Adjacent Properties (e.g. forested, grassland, commercial or residencial development, water sources)
Ashokan Reservoir, commercial and residential development

Proximity to Public Land

What is the distance (mi.) from the project area to forested public lands (e.g., national or state forests, national or state parks, conservation areas, wildlife management areas)?
Project is on forested public land

APPENDIX A
PHASE 1 SUMMER HABITAT ASSESSMENTS

Use additional sheets to assess discrete habitat types at multiple sites in a project area
Include a map depicting locations of sample sites if assessing discrete habitats at multiple sites in a project area
A single sheet can be used for multiple sample sites if habitat is the same

Sample Site Description
Sample Site No.(s): 1

Water Resources at Sample Site				
Stream Type (# and length)	Ephemeral: Multiple	Intermittent: Multiple	Perennial: Multiple	Describe existing condition of water sources: Water is high quality and is used for public drinking
Pools/Ponds (# and size)	Reservoir >8,000 acres	Open and accessible to bats? Yes		
Wetlands (approx. ac.)	Permanent: Multiple	Seasonal: Multiple		

Forest Resources at Sample Site				
Closure/Density	Canopy (> 50'): 0	Midstory (20-50'): 5	Understory (<20'): 5	1=1-10%, 2=11-20%, 3=21-40%, 4=41-60%, 5=61-80%, 6=81-100%
Dominant Species of Mature Trees	red maple, striped maple, shagbark hickory, silver maple, northern red oak, eastern white pine, and American beech			
% Trees w/ Exfoliating Bark		30		
Size Composition of Live Trees (%)	Small (3-8 in): 50	Med (9-15 in): 30	Large (>15 in): 20	
No. of Suitable Snags				

Standing dead trees with exfoliating bark, cracks, crevices, or hollows. Snags without these characteristics are not considered suitable.

IS THE HABITAT SUITABLE FOR INDIANA BATS? Yes

Additional Comments:
Size of trees qualifies them for potential use as roost trees.

Attach aerial photo of project site with all forested areas labeled and a general description of the habitat

Photographic Documentation: habitat shots at edge and interior from multiple locations; understory/midstory/canopy; examples of potential suitable snags and live trees; water sources

Attachment G

Species Conclusion Table

Species Conclusions Table Project Name: Ashokan Rail Trail Date: 7/14/16				
Species Name	Potential Habitat Present?	Critical Habitat Present?	ESA/Eagle Act Determination	Notes / Documentation Summary (include full rationale in your report)
Northern long-eared bat *(Myotis septentrionalis) and* Indiana Bat (*Myotis sodalis*)	Yes	No	May effect, not likely to Adversely Affect	Although a small portion of the project area will require removal of trees (2 total) greater than 3 inches DBH, the habitat impact will be minimal. Changes in lighting will also occur as a result of the project, due to increases in mast lighting the proposed project is recommended to have a "May Effect not Likely to Adversely Affect" on these protected bat species.
Bog turtle *(Clemmys muhlenbergii*)	No	No	No Effect	The delineated wetlands to be impacted lacked deep mucky soils, contained common reed, were shaded by upland overstory, and lacked the microtopographic features important to this species.
Bald eagle (*Haliaeetus leucocephalus)*	Yes	No	May Affect, Not Likely to Adversely Affect. No BGEPA permit required.	Suitable habitat and nest with young identified by BBA and NYSDEP. To avoid impact and necessity for a BGEPA permit, it is recommended that construction that will occur within sight or 660 feet of a nest occur during the non-breeding season, from mid-September to December.
Sharp-Shinned Hawk (*Accipiter striatus*)	Yes	No	No Effect	Birds breed in deep forests. In winter, will utilize forest edge and open habitat for hunting.
Osprey (*Pandion haliaetus*)	Yes	No	No Effect	Common around shorelines and waterways. Habitat includes rivers, lakes, reservoirs, lagoons, swamps, and marshes. Nests are usually elevated and within a short distance (12 miles) of an adequate supply of fish.
Red-shouldered hawk (*Buteo lineatus)*	Yes	No	No Effect	Forest birds that prefer an open sub-canopy for hunting. Can be found in suburban areas with mixed forest and housing. Suitable foraging habitat was identified within the corridor. However, impacts will be temporary and limited to noise during construction.
American bittern (*Botaurus lentiginosus)*	Yes	No	No Effect	Shallow, freshwater marshes. Tend to stay hidden among dense vegetation. Suitable habitat was identified immediately adjacent the corridor. However, impacts will be temporary and limited to noise during construction. No direct impacts will occur to suitable wetlands for this species.
Whip-poor-will (*Caprimulgus vociferos*)	No	No	No Effect	Forests with open understory. Found in both deciduous and deciduous pine mix. Nest on forest floor and are strictly nocturnal. No open understory was identified within the project corridor.
Common nighthawk (*Chordeiles minor*)	No	No	No Effect	Nest on bare soil and/or rock in forest clearings, but have also been known to nest on gravel rooftops. No bare soil and/or rock clearings were identified within the project corridor.

Ashokan Rail Trail
Towns of Hurley and Olive
Ulster County, New York

Wetland Delineation Report

May 2017

Barton & Loguidice

Ashokan Rail Trail
Towns of Hurley and Olive
Ulster County, New York

Wetland Delineation Report

May 2017

Ashokan Rail Trail

Towns of Hurley and Olive
Ulster County, New York

Wetland Delineation Report

May 2017

Prepared For:

Ulster County Planning Department
244 Fair Street
Kingston, New York 12401

Prepared By:

Barton & Loguidice, D.P.C.
10 Airline Drive
Albany, NY 12205

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Appendices

1.0 Introduction

This report describes the wetland resources located along portions of the proposed Ashokan Rail Trail located in the Towns of Olive and Hurley, Ulster County, New York. Ulster County is proposing construction of an 11.5-mile pedestrian and bicycle trail which will run from Basin Road in the Town of Hurley to Route 28A in the Town of Olive. The proposed action includes the creation of a recreational trail corridor on a former Ulster & Delaware (U&D) rail line, north of the Ashokan Reservoir on an Ulster County-owned corridor. The project is located within New York City Watershed Lands, which are regulated by the New York City Department of Environmental Protection (NYCDEP). The project includes repurposing the existing ballast, removal of rail and ties, creation of trailheads, installation of two pedestrian bridges and maintenance to/replacement of existing culvert structures. The limits of survey along the corridor, identified as the Project Corridor, were approximately 20 feet from the center of the railway in the Ulster County Right of Way (ROW).

A wetland and stream delineation was conducted by Barton & Loguidice, D.P.C. (B&L) throughout the Project Corridor (see Figures 1 and 2) on June 28 and 29, 2016 and July 7, 2016, in accordance with the Routine Delineation Method set forth in the *Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region Version 2.0* (U.S. Army Corps of Engineers [USACE], 2011). These methods were used to identify wetland and water resources within the Project Corridor.

This report summarizes agency resource information obtained for the Project Corridor, details the methods used to identify and delineate the field observed resources, and presents the results of the field wetland boundary delineation. Wetland delineation field data sheets and photographs of the wetland resources located within and adjacent to the Project Corridor are included as Appendices A and B of this report, respectively.

2.0 Site Description

2.1 Location

Located in the Ulster County Towns of Hurley and Olive, the Ashokan Rail Trail will re-purpose an abandoned railway owned by Ulster County within the Catskill Park. This abandoned railroad travels north of, and parallel to, the NYCDEP-regulated Ashokan Reservoir. Portions of the eastern section of railway were recently used by the Catskill Mountain Railway as a tourist attraction. This use ceased in May 2016. The remainder of the U&D railroad has been neglected for many years.

2.2 Site Use

Areas immediately adjacent to the Project Corridor consist primarily of residential and commercial properties to the north developed along NYS Route 28. To the south of the Corridor, the Ashokan Reservoir serves as a drinking water source for New York City and is recreationally limited to fishing and non-motorized boat use. The Project Corridor travels through mature and mid-successional forests, primarily deciduous, and crosses the Esopus Creek at the western end of the proposed trail.

3.0 Agency Resource Information

Prior to undertaking the field wetland delineation, a desktop information search was completed to review the site topography, mapped soils, and mapped wetlands associated with the Project Corridor. This desktop review included the U.S. Geological Survey's (USGS) topographic mapping, soils information from the Natural Resources Conservation Service's (NRCS) Soil Survey Geographic (SSURGO) Database and Web Soil Survey, the National Wetland Inventory (NWI) mapping, and the New York State Department of Environmental Conservation's (NYSDEC) freshwater wetland mapping.

3.1 Topographic Mapping

The Project Corridor is included on the USGS' 7.5-minute Ashokan, Bearsville, Kingston West, Phoenicia, and West Shokan quadrangle maps (Figure 2). Descriptions of the topographic features noted along the Project Corridor within each of these quadrangles are included below.

Ashokan: The northern quarter of the map portrays an elevation ranging from 600 feet above mean sea level (amsl) to approximately 660 feet amsl. The landscape to the north is steeply sloped with a peak of over 2,200 feet amsl adjacent to the "Little Tonshi Mountain" label. To the south of the Project Corridor, the elevation levels out to less than 600 feet amsl at the Ashokan Reservoir. On the other side of the Reservoir (further south), the landscape is undulating with peaks around 800 to 1000 feet amsl.

Bearsville: The southwest corner of the quadrangle was reviewed for a small portion of the Project Corridor. Topographic elevations are consistent with the Ashokan quadrangle.

Kingston West: Showing the eastern most section of the Project Corridor, the topography remains consistent with the same average elevation. To the east of the Project Corridor's eastern terminus, the undulating hills continue with peaks around 700 feet amsl. The Project Corridor's elevations flatten and drop to the southeast, at the Esopus Creek, to around 160 feet amsl.

Phoenicia: The southwest corner of the map was reviewed for the western terminus of the Project Corridor. A benchmark directly adjacent to the intersection of the railway and NYS Route 28A was labelled 651 feet amsl. Lands north and west of the Project Corridor are steeply mountainous, with elevations rising to above 3,500 feet amsl in the Catskill State Park.

West Shokan: The map shows the Project Corridor immediately east of the western end of the Ashokan Reservoir. There is a fairly steep bank between this section of the railway and NYS Route 28, and the alignment shifts from east-west to north-south. Elevation ranges are consistent with those observed from the Ashokan Quadrangle.

3.2 Soils Information

The NRCS' SSURGO Database and Web Soil Survey (WSS) (USDA, 2016) were reviewed to determine the types and characteristics of soils mapped within the limits of the Project Corridor to preliminarily evaluate the presence of hydric soils, one of the required criteria for federally regulated wetlands. Figure 3 displays the soil types mapped within the Project Corridor. Table 1, below, lists the soil symbol, mapping unit name, taxonomic classification, hydric classification and rating, drainage classification, and typical Munsell soil colors information that characterize each soil type mapped along the Project Corridor. As shown in Table 1, four of the soils mapped within the Project Corridor are defined as hydric soils since the WSS indicates they have hydric ratings greater than 50%. The four hydric soil units (Alluvial Land (AA), Atherton silt loam (At), Canandaigua silt loam (Cc), and Menlo silt loam (Mn)) are bolded in Table 1, below.

Table 1. NRCS Mapped Soils Data						
Map Unit Name	**Soil Symbol**	**Taxonomic Class**	**Drainage Class**	**Hydric Rating (%)**	**Typical Munsell Soil Horizon Colors**	**Typical Munsell Redoxymorphic Feature Colors**
Alluvial land	**AA**	**Fluvaquents**	**Poorly drained**	**65**	**N/A**	**N/A**
Arnot channery silt loam, 0 to 8 percent slopes	AcB	Lithic Dystrochrepts	Somewhat excessively drained	0	0-6": 10YR 4/2 6-13": 10YR 5/4 13-17": 2.5Y 5/4 17-27": "Gray"	-
Arnot-Oquaga-Rock outcrop complex, very steep	ARF	Lithic Dystrochrepts	Somewhat excessively drained	0	0-6": 10YR 4/2 6-13": 10YR 5/4 13-17": 2.5Y 5/4 17-27": "Gray"	-
Atherton silt loam	**At**	**Aeric Haploquepts**	**Poorly drained**	**90**	**0-9": 10YR 3/1, 9-22": 5Y 5/1**	**0-9": 2.5YR 3/6, 9-22": 2.5Y 5/4**
Canandaigua silt loam	**Cc**	**Mollic Haplaquepts**	**Very poorly drained**	**95**	**0-8": 10YR 3/1 8-12": 10YR 6/2 12-19": 10YR 6/1 19-30": 10YR 6/2**	**8-12": 10YR 5/6, 7.5YR 5/6 12-19": 10YR 7/2, 7.5YR 5/6 19-30": 7.5YR 6/4, 7.5YR 5/6**
Castile gravelly silt loam, 0 to 3 percent slopes	CgA	Aquic Dystrochrepts	Moderately well drained	0	0-13": 10YR 4/2 13-18": 10YR 5/4 18-24": 10YR 5/3	18-24": 10YR 5/1
Castile gravelly silt loam, 3 to 8 percent slopes	CgB	Aquic Dystrochrepts	Moderately well drained	0	0-13": 10YR 4/2 13-18": 10YR 5/4 18-24": 10YR 5/3	18-24": 10YR 5/1
Gravel pit	GP	-	Somewhat excessively drained	5	-	-
Haven loam	He	Typic Dystrochrepts	Well drained	0	0-2": Decomp 2-3": 5YR 2/1 3-6": 10YR 4/2 6-13": 7.5YR 4/4 13-22": 7.5YR 5/6	-
Hoosic gravelly loam, rolling	HgC	Typic Dystrochrepts	Somewhat excessively drained	0	0-6": 10YR 4/2 6-11": 10YR 5/6 11-22": 10YR 5/6	-
Hoosic gravelly loam, 15 to 25 percent slopes	HgD	Typic Dystrochrepts	Somewhat excessively drained	0	0-6": 10YR 4/2 6-11": 10YR 5/6 11-22": 10YR 5/6	-
Hoosic soils, very steep	HSF	Typic Dystrochrepts	Somewhat excessively drained	0	0-6": 10YR 4/2 6-11": 10YR 5/6 11-22": 10YR 5/6	-
Lackawanna flaggy silt loam, 8 to 15 percent slopes	LaC	Typic Fragiudepts	Well drained	0	0-8": 5YR 3/4 8-13": 5YR 4/4 13-26": 2.5YR 4/4	-
Lackawanna and Swartswood soils, moderately steep, very bouldery	LCD	Typic Fragiudepts	Well drained	0	0-8": 5YR 3/4 8-13": 5YR 4/4 13-26": 2.5YR 4/4	-
Lackawanna and Swartswood soils, very steep, very bouldery	LCF	Typic Fragiudepts	Well drained	0	0-8": 5YR 3/4 8-13": 5YR 4/4 13-26": 2.5YR 4/4	-
Lordstown-Arnot-Rock outcrop complex, sloping	LOC	-	-	0	-	-

Table 1. NRCS Mapped Soils Data

Map Unit Name	Soil Symbol	Taxonomic Class	Drainage Class	Hydric Rating (%)	Typical Munsell Soil Horizon Colors	Typical Munsell Redoxymorphic Feature Colors
Made land	ML	Udorthents	Somewhat excessively drained	5	-	-
Menlo silt loam	**Mn**	**Histic Humaquepts**	**Very poorly drained**	**100**	**0-5": 10YR 2/1 5-16": 10YR 2/1 16-22": 7.5YR 5/1**	**5-16": 7.5YR 4/6 16-22": 7.5YR 4/6. 10YR 5/6**
Morris-Tuller complex, gently sloping, very bouldery	MTB	Aeric Fragiaquepts	Somewhat poorly drained	20	0-8": 5YR 4/2 8-10": 7.5YR 4/4 10-14": 5YR 5/2 14-50": 2.5YR 4/4	10-14": 5YR 4/4, N 5/0 14-50": N 6/0, 7.5YR 5/6, N 5/0
Oquaga channery silt loam, 3 to 8 percent slopes	OgB	Typic Dystrochrepts	Well drained	0	0-4": 5YR 3/3 4-11": 2.5YR 3/6 11-28": 2.5YR 4/4	-
Oquaga and Lordstown channery silt loams, 8 to 15 percent slopes	OlC	Typic Dystrochrepts	Well drained	0	0-4": 5YR 3/3 4-11": 2.5YR 3/6 11-28": 2.5YR 4/4	-
Oquaga-Arnot-Rock outcrop complex, sloping	ORC	Typic Dystrochrepts	Well drained	0	0-4": 5YR 3/3 4-11": 2.5YR 3/6 11-28": 2.5YR 4/4	-
Oquaga-Arnot-Rock outcrop complex, moderately steep	ORD	Typic Dystrochrepts	Well drained	0	0-4": 5YR 3/3 4-11": 2.5YR 3/6 11-28": 2.5YR 4/4	-
Plainfield-Riverhead complex, very steep	PmF	Typic Udipsamments	Excessively drained	0	0-7": 10YR 3/3 7-16": 7.5YR 4/4 16-28": 7.5YR 5/6	-
Quarry	QU	-	-	5	-	-
Red Hook gravelly silt loam	Re	Aeric Haploquepts	Somewhat poorly drained	5	0-6": 10YR 3/2 6-8": 10YR 4/3 8-13": 10YR 5/3 13-22" 10YR 5/2	6-8": 10YR 5/2 8-13": 10YR 5/2, 4/4 13-22": 7.5YR 4/4, 10YR 5/6
Schoharie silt loam, 3 to 8 percent slopes	SaB	Typic Hapludalfs	Moderately well drained	0	0-8": 7.5YR 3/2 8-11": 10YR 6/3 11-18": 5YR 5/4 18-33":2.5YR 4/4	18-33": 5YR 5/6
Scriba and Morris soils, 0 to 8 percent slopes	SdB	Aeric Fragiaquepts	Somewhat poorly drained	5	0-9": 10YR 3/2 9-13": 10YR 5/2 13-30": 7.5 YR 5/4	9-13": 10YR 5/6, 7.5YR 5/6, 10YR 6/1 13-30": 10YR 4/4, 7.5 YR 5/6, 7.5YR 6/2
Scriba and Morris soils, gently sloping, very bouldery	SEB	Aeric Fragiaquepts	Somewhat poorly drained	5	0-9": 10YR 3/2 9-13": 10YR 5/2 13-30": 7.5 YR 5/4	9-13": 10YR 5/6, 7.5YR 5/6, 10YR 6/1 13-30": 10YR 4/4, 7.5 YR 5/6, 7.5YR 6/2
Suncook loamy fine sand	Su	Typic Udipsamments	Excessively drained	0	0-7": 10YR 3/2 7-14": 10YR 4/2 14-22": 10YR 3/3	-
Tunkhannock gravelly loam, 0 to 3 percent slopes	TkA	Typic Dystrochrepts	Well drained	0	0-8": 10YR 4/3 8-16": 7.5YR 16-26": 5YR 4/4	-

Table 1. NRCS Mapped Soils Data

Map Unit Name	Soil Symbol	Taxonomic Class	Drainage Class	Hydric Rating (%)	Typical Munsell Soil Horizon Colors	Typical Munsell Redoxymorphic Feature Colors
Tunkhannock gravelly loam, 3 to 8 percent slopes	TkB	Typic Dystrochrepts	Well drained	0	0-8": 10YR 4/3 8-16": 7.5YR 16-26": 5YR 4/4	-
Tunkhannock gravelly loam, rolling	TkC	Typic Dystrochrepts	Well drained	0	0-8": 10YR 4/3 8-16": 7.5YR 16-26": 5YR 4/4	-
Valois very bouldery soils, gently sloping	VAB	Typic Dystrochrepts	Well drained	0	0-7": 10YR 4/3 7-30": 7.5YR 5/6	-
Valois very bouldery soils, moderately steep	VAD	Typic Dystrochrepts	Well drained	0	0-7": 10YR 4/3 7-30": 7.5YR 5/7	-
Wellsboro and Wurtsboro soils, gently sloping, very bouldery	WLB	Typic Fragiochrepts	Moderately well drained	0	0-8": 5YR 4/2 8-18": 5YR 4/4 18-24": 7.5YR 5/4	18-24": 5YR 5/8, 10YR 6/1, 5YR 6/3

3.3 New York State Department of Environmental Conservation Freshwater Wetlands Mapping

Desktop reviews of NYSDEC's freshwater wetland mapping resources (NYSDEC, 2016) were completed prior to a field inspection of the Project Corridor. As shown on Figure 4, several NYSDEC wetland polygons are mapped adjacent to or within the Corridor. NYSDEC regulated Wetland AS-20 is mapped approximately 100-260 feet to the south of the Project Corridor for the majority of its proposed length. A separate polygon, also part of Wetland AS-20, is located just east of Reservoir Road, and is bisected by the proposed Project Corridor. Wetland AS-20 is a Class 1 state-regulated wetland, which is listed as 139 acres in size. Wetland AS-19, a Class 2 wetland of 25.2 mapped acres, is shown immediately north of and overlapping the railway. No other NYSDEC wetlands were mapped within or adjacent to the Corridor.

3.4 National Wetland Inventory Mapping

Multiple wetland polygons were mapped by the U.S. Fish and Wildlife Services' (USFWS) National Wetland Inventory (NWI) along the Project Corridor (Figure 4). Table 2, below, summarizes the characteristics of these NWI mapped wetlands.

Table 2. NWI Mapped Wetlands

Classification Code	Wetland Type	Total Mapped Size (Acres)	Distance and Direction from Corridor
PUBH	Palustrine, unconsolidated bottom, permanently flooded (pond)	2.55	20' south of railway in Hurley, west of Basin Road
PEM1E	Palustrine, scrub-shrub, broad-leaved deciduous, seasonally flooded /saturated	1.34	Crosses railway; corresponds to NYSDEC Wetland AS-20 to north.
PFO1E	Palustrine, forested, broad-leaved deciduous, seasonally flooded /saturated	0.88	Crosses railway; corresponds to NYSDEC Wetland AS-20 to south.
PSS1/EM1C	Palustrine, scrub-shrub, broad-leaved deciduous/ emergent, persistent, seasonally flooded	2.11	Overlaps railway; corresponds to NYSDEC Wetland AS-19
PUBHh	Palustrine, unconsolidated bottom, permanently flooded, diked/impounded (pond)	1.7	60' north of railway, western end near Esopus inlet. (Causeway)
PUBHh	Palustrine, unconsolidated bottom, permanently flooded, diked/impounded (pond)	18.63	60' north of railway, western end near Esopus inlet. (Causeway)
PFO1C	Palustrine, forested, broad-leaved deciduous, seasonally flooded	5.65	Passes through Corridor along northern bank of Esopus Creek.

3.5 Surface Water Resources

The Project Corridor is located within the Lower Hudson Drainage Basin, recognized under Title 6, Chapter 10, Article 10, Part 862 in the New York Codes, Rules, and Regulations (NYCRR). NYSDEC stream mapping indicates that eight streams cross the Project Corridor. Table 3, below, provides the project assigned stream crossing identification number, the watercourse name, the NYSDEC Water Index Number, and the water quality classification/standard for the stream resource.

Stream resources mapped within the Project Corridor are shown on Figure 5. Surface water resources mapped within the Project Corridor drain into the Ashokan Reservoir (Waters Index Number H-171-P 848). This waterbody is designated as a Class AA water with AA(T) Standards, and supplies the City of New York by way of the Catskill Aqueduct to the Kensico Reservoir for distribution.

Table 3. NYSDEC Mapped Stream Resources

Watercourse Name	NYSDEC Waters Index Number	Water Quality (Class, Standard)
Esopus Creek	H-171	A,A(TS)
Tributary 8 of the Ashokan Reservoir	H-171-P 848-8	A,A(T)
Butternut Creek (Trib. 9 of Ashokan Reservoir)	H-171-P 848-9	A,A(T)
Tributary 9a of the Ashokan Reservoir	H-171-P 848-9a	A,A(T)
Tributary 1 of Butternut Creek	H-171-P 848-9-1	A,A(T)
Tributary 10 of the Ashokan Reservoir	H-171-P 848-10	A,A(T)
Tributary 11 of the Ashokan Reservoir	H-171-P 848-11	A,A(T)
Tributary 12 of the Ashokan Reservoir	H-171-P 848-12	A,A

3.6 Results of Background Information Review

A review of the background information conducted prior to the wetland field delineation indicated the potential for federal and state wetlands to be located within or adjacent to the Project Corridor based on the presence of mapped wetlands and prevalence of hydric soil. A field-based wetland identification and delineation was conducted to confirm these preliminary findings and identify the boundaries of wetland and surface water resources within the Project Corridor.

4.0 Site Ecology

4.1 General Cover Types

This section presents a summary of ecological information that is publicly available for the Project Corridor. The Project Corridor is located within mature and mid-successional forests with some scrub shrub patches interspersed throughout.

4.2 Ecological Zone

The proposed Project Corridor is located within the Appalachian Plateau Major Ecological Zone (Zone A) and the Neversink Highlands Minor Zone (NYSDEC, 2008). Characteristics of these ecological zones are provided in Table 4, below.

Table 4. Characteristics of the Ecological Zones

Feature	Appalachian Plateau / Neversink Highlands
Topography	Typical plateau structure with horizontal rock formations
Elevation	Well over 1,000 feet in most of the zone. / Most of the Highlands are above 1,200 feet. Relief is low in relation to sub-zones to the north.
Soils	Over most of the Plateau the soils are generally medium textured, acid, usually with fragipans, developed on glacial till and tend to be shallow and moderately well or poorly drained. The valley soils brought in by the glaciers are more fertile.
Vegetation	This zone is situated in the oak-northern hardwood and the northern hardwood natural vegetation zones. / The forests consist of northern hardwoods with substantial amounts of black cherry and ash. Hemlock and white pine are found in the ravines.
Land Use	The Highlands is the site of the numerous, famous Catskill resorts. Farming contributes to the economy, with a fairly recent shift from dairy to poultry farms taking place.
Mean Summer Temperature	65 to 70 degrees Fahrenheit
Mean Winter Temperature	20 to 25 degrees Fahrenheit
Mean Annual Snowfall	40 to 60 inches (60 to 85 inches in northern portions)
Growing Season	100-160 days

4.3 Wetland Cover Types

General wetland types identified within the Project Corridor are of the palustrine and lacustrine systems (Cowardin, 1979). The palustrine wetlands are dominated by emergent (PEM) and/or forested (PFO) classes. The lacustrine wetlands demonstrated a littoral subsystem and met criteria for an emergent wetland class. The Ashokan Reservoir is classified as a lacustrine system with a limnetic subsystem and a permanently flooded class. Brief descriptions of the two dominant wetland cover types noted within the Project Corridor are presented below, as most of the wetlands delineated within the Corridor are classified as such:

Emergent: Erect, rooted, herbaceous hydrophytic plants characterize emergent wetlands. This vegetation can be observed throughout most of the growing season. These wetlands typically have standing water above the soil surface for a portion of the year and often include fringe communities on open water edges.

Forested: Forested wetlands are dominated by woody vegetation with a diameter at breast height (DBH) greater than 3-inches and where soil is at least periodically saturated or inundated. Forested wetlands within the Project Corridor commonly included deciduous trees with an understory of hydrophytic herbaceous vegetation. The density of the understory varies by location and forest type.

5.0 Wetland Delineation Methodology

The background desktop data described in Section 3.0 was reviewed prior to undertaking the wetland field delineation. The *Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Northeast/Northcentral Regional Supplement to the 1987 Corps of Engineers' Manual Version 2.0* (USACE, 2011) were followed during the 2016 wetland identification and delineation effort to identify wetlands located within the Project Corridor that are subject to federal jurisdiction by the USACE. B&L performed data collection and delineation of wetland boundaries on June 28-29 and July 7, 2016. Observations of vegetative communities, soils, and hydrological characteristics were documented and used to determine the extent of wetland boundaries in the field.

The first step of the wetland field delineation was to determine whether normal conditions were present at each identified wetland location. Each site was then examined for evidence of natural or human induced alteration of vegetation, soils, or hydrology. These investigations were followed by analyzing the surrounding area and determining the location of the wetland/upland interface. Selected points were sampled for vegetation, hydrology, and soil characteristics to determine the location of this boundary. The following sub-sections describe the *2012 Northeast/Northcentral Regional Supplement Version 2.0* (USACE, 2011) delineation methodology, which was followed during the June/July 2016 field delineation effort.

5.1 Vegetation

The presence of wetland vegetation was determined by evaluating the indicator status of dominant plant species in each vegetative stratum (i.e., herbaceous layer, shrub/sapling layer, tree layer, and woody vine layer). Dominant plant species were determined using percent aerial coverage estimates. Plant identification was made using plant keys such as *Newcomb's Wildflower Guide* (Newcomb, 1977). The plant species that immediately exceeded 50% of the total percent cover for a given stratum (when ranked in descending order of abundance and cumulatively totaled), plus any additional species comprising 20% or more of the total cover for that stratum (called the 50/20 rule), were considered to be the dominant vegetative species for the data plot.

The wetland indicator status (obligate - OBL, facultative wetland - FACW, facultative - FAC, facultative upland - FACU, or upland - UPL) for dominant plant species identified in the sample plots were determined from *The Northcentral and Northeast, Regional Wetland Plant List* (Lichvar, et al., 2016).

The Routine Method outlined in the USACE's Regional Supplement requires a sequence of four tests to establish the presence or absence of a dominance of hydrophytic vegetation. The four tests are done in a sequence on an if/then logic test basis. Proceeding to the next indicator

level should only be completed if the preceding indicator did not determine a dominance of hydrophytic vegetation at the sampling location. Indicator one is the rapid test for hydrophytic vegetation. This indicator is applied if all dominant species across all vegetation strata are rated OBL or FACW.

Indicator two is the dominance test. Vegetation is considered to be hydrophytic if more than 50% of the dominant plant species across all strata are rated OBL, FACW, or FAC. The dominance test and rapid test use the 50/20 rule to determine the dominant species within a vegetative plot.

The third indicator of hydrophytic vegetation is linked to the prevalence index. The prevalence index is a weighted-average of wetland indicator statuses of all plant species in the sampling plot. The wetland indicator status of each species is assigned a value according to the following scale: OBL-1, FACW-2, FAC-3, FACU-4, and UPL-5. These assigned values are multiplied by the absolute percent cover of all species with that particular indicator status. The product of each indicator value is then summed and divided by the total percent cover, resulting in the prevalence index for that vegetation plot. The equation is as follows:

$$\text{Prevalence Index} = \frac{A_{OBL}+2*A_{FACW}+3*A_{FAC}+4*A_{FACU}+5*A_{UPL}}{A_{OBL}+A_{FACW}+A_{FAC}+A_{FACU}+A_{UPL}}$$

where A_X is the absolute percent cover

In order for a sample area to contain hydrophytic vegetation, the plot must have a prevalence index of 3 or less.

Indicator four consists of morphological adaptations. Certain plant species exhibit morphological changes in order to survive in areas that are saturated or flooded for prolonged periods of time. Some common vegetative morphological adaptations in the northeast consist of adventitious roots, hypertrophic lenticels, multi-stemmed trunks, and shallow root systems.

Plant community data recorded from each sample plot are included on the wetland delineation field data sheets provided as Appendix A.

5.2 Hydrology

The presence of primary hydrologic indicators (such as surface inundation (indicator A1), a high water table (indicator A2), soil saturation (indicator A3), or secondary hydrologic indicators (such as drainage patterns (indicator B10) or geomorphic position (indicator D2) was determined through visual observations at the data plot locations, the immediately surrounding areas, and within the soil profile. Soil saturation was determined by sampling the soils at each plot to a minimum depth of 20-inches, if possible. The depth of water was observed within

boreholes. Hydrologic data gathered in the field at each sample plot is included on the wetland delineation field data sheets provided as Appendix A.

5.3 Soils

The presence of hydric soil indicators was determined by extracting soil samples with a soil auger up to a minimal depth of 12-inches, if possible. A Munsell Soil Color Chart (2009 Edition) was used to determine soil color for observed horizons within the soil profile, including different layers within the same horizon, if observed. Soil profiles were compared to hydric soil indicators for the USDA Subregion Land Resource Region (LRR R) – Northeastern Forests, included within the Northcentral and Northeast Regional Supplement (USACE, 2011). Soil characteristics and other observations made at each sample plot are included on the wetland delineation field data sheets provided as Appendix A.

5.4 Mapping

A wetland determination was made at each sample plot after characterizing the vegetation, hydrologic indicators, and soil. If the hydrophytic vegetation, hydrology, and hydric soil criteria were met, the area was determined to be a wetland. If the criterion for one or more of the three-wetland indicators was not met, the area was determined to not be a wetland, unless unusual circumstances were observed at the data plot location.

The boundaries of each wetland location were surveyed in the field using a handheld Global Positioning System (GPS), Trimble GeoXH model (Trimble Navigation Limited, Sunnyvale, CA). This GPS model is capable of sub-foot accuracy and was used to gather each point location and map each wetland boundary along the proposed trail route. The wetland boundaries were later added to the geographic information system (GIS) base mapping for the project.

6.0 Results

6.1 Delineated Wetlands

Vegetative, soil, and hydrologic characteristics of each delineated wetland can be viewed on the corresponding field data sheets in Appendix A. The field collected information for each delineated wetland has also been summarized below. Sixteen wetland resources were identified and delineated in the field. The boundary of many of these wetlands was only partially delineated due to the continuation of the wetland limits outside of the Project Corridor. Locations where the wetland continues outside of the project limits (labelled "open") are identified on the Wetland Delineation Figures, 6A through 6J.

Wetland A (Figure 6A) is classified as a palustrine emergent (PEM) wetland and is located approximately 20 feet south of the railway. At the Wetland A data plot, broom sedge (*Carex scoparia*), shallow sedge (*Carex lurida*), and pinkweed (*Persicaria pensylvanica*) were the dominant plant species observed. A dominance of hydrophytic vegetation was indicated within Wetland A based on the dominance test and the prevalence index. Wetland hydrology indicators observed within Wetland A consisted of high water table (A2), saturation (A3) at the soil surface, geomorphic position (D2), and the FAC-neutral test (D5). The observed hydric soil indicator within the wetland soil data plot was sandy mucky mineral (S1). All observed soil layers exhibited muck/mucky sand textured soil. Wetland datasheets documenting the characteristics of Wetland A from the field visit are included in Appendix A.

Wetland B (Figure 6B) is classified as PEM wetland located at the toe of slope south of the railway. Stream 2 (Section 6.2) flows through the wetland, oriented north-south. The delineated wetland boundary is open to the south. At the Wetland B data plot, shallow sedge and broom sedge were the dominant plant species observed. A dominance of hydrophytic vegetation was indicated within Wetland B based on the dominance test and the prevalence index. Observed wetland hydrology indicators within Wetland B consisted of high water table (A2) at a depth of eight inches, saturation (A3) at three inches, stunted or stressed plants – dead trees – (D1) and the FAC-neutral test (D5). The hydric soil indicator observed within the wetland soil data plot was redox dark surface (F6). Observed soil layers exhibited loamy/clay textured soils. Wetland datasheets documenting the characteristics of Wetland B from the field visit are included in Appendix A.

Wetland C (Figure 6A) is a PEM wetland that was observed adjacent to an access roadway off of NYS Route 28. The delineated Wetland C boundary is open to the west. At the Wetland C data plot, American bur-reed (*Sparganium americanum*) was the dominant plant species observed. A dominance of hydrophytic vegetation was indicated within Wetland C based on the dominance test and the prevalence index. Observed wetland hydrology indicators consisted, high water table (A2) at the two inches, saturation (A3) at soil surface, geomorphic

position (D2), and the FAC-neutral test (D5). Observed hydric soil indicators consisted of depleted matrix (F3). A muck and mucky loam/clay texture were observed until 12 inches in depth, where the soil texture shifted to loam/clay. Wetland datasheets documenting the characteristics of Wetland C from the field visit are included in Appendix A.

Wetland D (Figure 6A) is a PEM wetland that was observed along the east side of the Woodford Dike access roadway. The delineated Wetland D boundary is open east. Dominant plant species within the wetland plot were speckled alder (*Alnus incana)*, Japanese stilt grass (*Microstegium vimineum*), and prickly sedge (*Carex stipata*). A dominance of hydrophytic vegetation was indicated within Wetland D based on the dominance test and the prevalence index. Wetland hydrology indicators, high water table (A2) at the two inches, saturation (A3) at soil surface, geomorphic position (D2) and the FAC-neutral test (D5). Hydric soil indicators met at the plot location for Wetland D consisted of depleted matrix (F3). Mucky loam/clay texture was noted until 14 inches, where it became loamy/clay. Wetland datasheets documenting the characteristics of Wetland D from the field visit are included in Attachment B.

Wetland E (Figure 6C) is a PEM wetland that is located to the south of the railway. This wetland is hydrologically fed by an upland runoff that passes from the north and through a cross culvert under the rail. At the time of the survey, water was flowing in the rocky cobble channel at about two to three inches deep (Stream 5). Within the data plot, this wetland was dominated by green bulrush (*Scirpus atrovirens*), arrow-leaf tearthumb (*Persicaria sagittata*), and Japanese stilt grass. A dominance of hydrophytic vegetation was indicated within Wetland E based on the dominance test and the prevalence index. Wetland hydrology indicators observed within Wetland E consisted of saturation (A3) at four inches, drainage patterns (B10), geomorphic position (D2), and the FAC-neutral test (D5). The hydric soil indicator redox dark surface (F6) was observed within the Wetland E soil plot. Wetland datasheets documenting the characteristics of Wetland E from the field visit are included in Appendix A.

Wetland F (Figure 6E) is a PEM wetland that was observed within a low spot influenced by a stream (Stream 8) entering from the west on the north side of the railway. Vegetation in this wetland was dominated by jewelweed (*Impatiens capensis*), pink weed, silver maple (*Acer saccharinum*) and red maple (*Acer rubrum*). A dominance of hydrophytic vegetation was indicated within Wetland F based on the dominance test and the prevalence index. Wetland hydrology indicators observed within Wetland F consisted of, high water table (A2) at approximately one inch from the soil surface, saturation (A3) at soil surface, geomorphic position (D2), and the FAC-neutral test (D5). The hydric soil indicator redox dark surface (F6) was observed within the Wetland F soil plot. Wetland datasheets documenting the characteristics of Wetland F from the field visit are included in Appendix A.

Wetland G (Figure 6E) is a PEM wetland that was observed along a drainage feature south of the railway, beginning where Wetland F ends. Vegetation in Wetland G was dominated

by jewelweed, prickly sedge, red maple (*Acer rubrum*), white ash (*Fraxinus americana*), and American beech (*Fagus grandifolia*). A dominance of hydrophytic vegetation was indicated within Wetland G based on the dominance test and the prevalence index. Wetland hydrology indicators observed within Wetland G consisted of high water table (A2) at approximately two inches from the soil surface, saturation (A3) at soil surface, drainage patterns (B10), geomorphic position (D2) and the FAC-neutral test (D5). The hydric soil indicator redox dark surface (F6) was observed within the Wetland G soil plot. Wetland datasheets documenting the characteristics of Wetland G from the field visit are included in Appendix A.

Wetland H (Figure 6E) is a PEM wetland that was observed along a drainage feature south of the railway. The Wetland H boundary was delineated and left open to the south. Vegetation in this wetland was dominated by jewelweed, Japanese stilt grass, and red maple. A dominance of hydrophytic vegetation was indicated within Wetland H based on the dominance test and the prevalence index. Wetland hydrology indicators observed within Wetland H consisted of saturation (A3) at approximately four inches from the soil surface, drainage patterns (B10), geomorphic position (D2), and the FAC-neutral test (D5). The hydric soil indicator redox dark surface (F6) was observed within the Wetland H soil plot. Wetland datasheets documenting the characteristics of Wetland H from the field visit are included in Appendix A.

Wetland I (Figure 6E), a PEM wetland, is located at the toe of slope on the north side of the railway. The Wetland I boundary was left open to the north. Stream 9 was identified flowing northeast from the wetland and exiting south through a culvert under the railway. Dominant vegetation observed within Wetland I was jewelweed. A dominance of hydrophytic vegetation was indicated within Wetland I based on the dominance test and the prevalence index. Wetland hydrology indicators observed within Plot 1 data plot consisted of saturation (A3) at the soil surface, drainage patterns (B10), geomorphic position (D2) and the FAC-neutral test (D5). The hydric soil indicator redox dark surface (F6) was observed within the Wetland I data plot. Wetland datasheets documenting the characteristics of Wetland I from the field visit are included in Appendix A.

Wetland J (Figure 6F) is a palustrine scrub-shrub/forested (PSS/PFO) wetland to the north of the railway. The wetland was delineated within the Project Corridor and is open to the north. Dominant vegetation observed within Wetland J was red osier dogwood (*Cornus alba*), rattlesnake grass (*Glyceria canadensis*), and shallow sedge. A dominance of hydrophytic vegetation was indicated within Wetland J based on the dominance test and the prevalence index. Wetland hydrology indicators observed within Wetland J consisted of high water table (A2) present at three inches below soil surface, saturation (A3) at two inches below soil surface, and the FAC-neutral test (D5). The hydric soil indicator redox dark surface (F6) was observed within the Wetland J data plot. Wetland datasheets documenting the characteristics of Wetland J from the field visit are included in Appendix A.

Wetland K (Figure 6F) is a PEM wetland, located to the south, north, and within the limits of the abandoned railway. This wetland was delineated across the Project Corridor and is open to the west, north, and south. It is associated with NYSDEC mapped Wetland AS-20. Dominant vegetation observed within Wetland K was common reed (*Phragmites australis*). A dominance of hydrophytic vegetation was indicated within Wetland K based on the dominance test and the prevalence index. Wetland hydrology indicators observed within Wetland K, high water table (A2) present at one inch below soil surface , saturation (A3) at the soil surface, geomorphic position (D2) and the FAC-neutral test (D5). The hydric soil indicator redox dark surface (F6) was observed within the Wetland K data plot. A mucky loam/clay texture was observed until eight inches, where it became loamy/clay. Wetland datasheets documenting the characteristics of Wetland K from the field visit are included in Appendix A.

Wetland L (Figure 6F) is a PEM wetland, located to the south, north, and within the limits of the railway. This wetland was delineated across the Project Corridor and is open to the north, south, and east. It is associated with NYSDEC mapped Wetland AS-20. Dominant vegetation observed within Wetland L was speckled alder, red osier dogwood, and common reed. A dominance of hydrophytic vegetation was indicated within Wetland L based on the dominance test and the prevalence index. Wetland hydrology indicators observed within Wetland L consisted of high water table (A2) present at one inch below soil surface, saturation (A3) at the soil surface, and the FAC-neutral test (D5). The hydric soil indicator redox dark surface (F6) was observed within the Wetland L data plot. All soil layers exhibited a mucky loam/clay texture. Wetland datasheets documenting the characteristics of Wetland L from the field visit are included in Appendix A.

Wetland M (Figure 6F) is a PEM wetland located north of the railway. This wetland was delineated in its entirety. Dominant vegetation observed within Wetland M was Japanese stilt grass and rattlesnake grass. A dominance of hydrophytic vegetation was indicated within Wetland M based on the dominance test and the prevalence index. Wetland hydrology indicators observed within Wetland M consisted of high water table (A2) present at one inch below soil surface, saturation (A3) at the soil surface, geomorphic position (D2) and the FAC-neutral test (D5). The hydric soil indicator redox dark surface (F6) was observed within the Wetland M data plot. A mucky loam/clay texture was observed until a depth of ten inches, where further investigation was restricted by rail ballast. Wetland datasheets documenting the characteristics of Wetland M from the field visit are included in Appendix A.

Wetland N (Figure 6F) is a PEM wetland located south of the railway. This wetland was delineated in its entirety. Wetland N is located on the opposite side of the railway from Wetland M. Dominant vegetation observed within Wetland N was broom sedge, shallow sedge, and soft rush (*Juncus effusus*). A dominance of hydrophytic vegetation was indicated within Wetland N based on the dominance test and the prevalence index. Wetland hydrology indicators observed within Wetland N consisted of high water table (A2) present at two inches below soil surface, saturation (A3) at the soil surface, geomorphic position (D2) and the FAC-neutral test (D5). The hydric soil indicator depleted matrix (F3) was met by the soil profile characteristics recorded within the Wetland N data plot. A mucky loam/clay texture was observed until a depth of eight inches, where further investigation was restricted by rail ballast. Wetland datasheets documenting the characteristics of Wetland N from the field visit are included Appendix A.

Wetland O (Figure 6I) is a PEM wetland located at a topographic low point within the center of the proposed trail alignment. This wetland was delineated in its entirety. Dominant vegetation observed within Wetland O was jewelweed. A dominance of hydrophytic vegetation was indicated within Wetland O based on the dominance test and the prevalence index. Wetland hydrology indicators observed within Wetland O consisted of high water table (A2) present at one inch below soil surface, saturation (A3) at the soil surface, hydrogen sulfide odor (C1) and the FAC-neutral test (D5). The hydric soil indicator redox depressions (F8) was met within the Wetland O data plot. A muck texture was observed until a depth of four inches, where it became mucky loam/clay and was restricted by rail ballast at 12 inches in depth. Wetland datasheets documenting the characteristics of Wetland O from the field visit are included in Appendix A.

Wetland P (Figure 6J) is a PEM wetland located at the toe of slope east of the railway. A culvert was observed with no flowing water or defined channel passing under the railway, to the north, suggesting the area becomes inundated during storms. This storm overflow likely settles within the topographic low spot that represents Wetland P. Investigation of the western side of the culvert did not identify any wetland areas. Dominant vegetation observed within Wetland P was Japanese stilt grass, jewelweed, and white ash. A dominance of hydrophytic vegetation was indicated within Wetland P based on the dominance test and the prevalence index. Wetland hydrology indicators observed within Wetland P consisted of saturation (A3) at three inches in depth, drainage patterns (B10), geomorphic position (D2), and the FAC-neutral test (D5). The hydric soil indicator redox dark surface (F6) was met within the Wetland P data plot. A loamy/clay texture was observed for all soil layers. Wetland datasheets documenting the characteristics of Wetland P from the field visit are included in Appendix A.

6.2 Surface Waters

Surface waters within the Project Corridor were identified in the field during the wetland delineation effort. Potential federal jurisdiction was based on observations of bed, bank, and ordinary high water characteristics. The presence of these characteristics in streams that are hydraulically connected to other regulated resources qualify them as Waters of the U.S. under the Clean Water Act, which is regulated by the USACE. The results of the stream identification field effort are summarized below. Unmapped stream classification is discussed in Section 7, Summary and Conclusions. Stream resources can be seen on Figures 6A-6J.

Stream 1 is an unmapped stream that was observed flowing from north to south through a culvert under the railway. This stream was dry at the time of observation but held pools of approximately 3 inches depth of water in spots. The stream channel was approximately 5 feet wide and exhibited a bedrock cobble substrate (Figure 6B).

Stream 2 is an unmapped stream that was observed flowing through Wetland B, oriented north-south. This stream was observed to have flow ranging from 1-3 inches. The stream channel was approximately 3 feet wide and exhibited a cobble substrate (Figure 6B).

Stream 3 is a NYSDEC mapped stream identified as Tributary 12 of the Ashokan Reservoir (Waters Index Number H-171-P 848-12). The stream was observed flowing north to south with flowing water and a channel width of approximately 10 feet comprised of a silt and cobble substrate. The stream is classified as a Class A stream with A standards (Figure 6B).

Stream 4 is an unmapped stream observed flowing from the northwest to the southeast. Observed water depth in the channel was ½" to 1 foot with a channel width of approximately 8 feet. Total channel depth was noted at 1 ½ feet with a cobble bedrock substrate (Figure 6C).

Stream 5 is an unmapped stream feeding Wetland E as an upland runoff that passes from the north and through a cross culvert under the rail. At the time of the survey, water was flowing in the rocky cobble channel at about two to three inches deep (Figure 6C).

Stream 6 is a NYSDEC mapped stream identified as Tributary 11 of the Ashokan Reservoir (Waters Index Number H-171-P 848-11). The stream was observed flowing northwest to the southeast. Observed water depth in the channel was 2-6 inches with a channel width of approximately 3 feet. This stream is a Class A stream with A(T) standards (Figure 6D).

Stream 7 is an unmapped stream that was observed flowing from north to south through a culvert under the railway. This stream was dry at the time of observation but was a clearly defined rocky cobble channel of approximately 3 feet width (Figure 6E).

Stream 8 is an unmapped stream entering from the west on the north side of the railway at Wetland F. Flow from this stream continued south through a culvert northeast of Wetland G. Flow was observed at a depth of 2-3 inches and a width of 2 feet (Figure 6E).

Stream 9 is an unmapped stream identified flowing from the west on the northern side of the railway through Wetland I and exiting south through a culvert under the railway. Flow was observed at a depth of 2-3 inches and a width of 1-2 feet (Figure 6E).

Stream 10 is a NYSDEC mapped stream identified as Tributary 10 of the Ashokan Reservoir (Waters Index Number H-171-P 848-10). The stream was observed flowing northwest to the southeast. Observed water depth in the channel was 6-14 inches with a channel width of approximately 15 feet. This stream is a Class A stream with A(T) standards (Figure 6F).

Stream 11 is an unmapped stream that was observed flowing from north to south through a culvert under the railway. This stream held approximately 2-4 inches depth of water. The stream channel was approximately 2-3 feet wide and exhibited a silt cobble substrate. Outside and to the south of the Project Corridor, the stream was observed to widen to a channel width of approximately 15 feet (Figure 6F).

Stream 12 is a NYSDEC mapped stream identified as Tributary 9a of the Ashokan Reservoir (Waters Index Number H-171-P 848-9a). This stream held approximately 3 inches of water with a silt substrate and channel width of 1-3 feet. This resource is Class A with A(T) Standards (Figure 6G).

Stream 13 is an unmapped stream that was observed collecting drainage from the east and west of the northern boundary of the rail to the south through a culvert under the railway (Figure 6H). This stream held approximately 3 inches depth of water. The stream channel was approximately 3 feet wide and exhibited a silt substrate.

Stream 14 is a NYSDEC mapped stream identified as Butternut Creek (Waters Index Number H-171-P 848-9), the 9th Tributary of the Ashokan Reservoir. It is important to note that unlike the NYSDEC mapping, the two channels (Tributary 1 of Butternut Creek and Butternut Creek itself) converge north of the railway, not south as shown. The stream was observed flowing northeast to the southwest. Observed water depth in the channel was 3-5 inches with a channel width of approximately 15 feet. This stream is a Class A stream with A(T) standards (Figure 6H).

Stream 15 is an unmapped stream that was observed collecting drainage from the northern boundary of the rail and flowing to the south through a culvert under the railway (Figure 6H). This stream held approximately ½ -3 inches of water. The stream channel was approximately 3 feet wide and exhibited a silt and rocky cobble substrate (Figure 6I).

Stream 16 is an unmapped stream that was observed collecting drainage from the eastern boundary of the rail and continuing to the southwest through a culvert under the railway. This stream held approximately 4 inches depth of water. The stream channel was approximately 3 feet wide and exhibited a rocky cobble substrate (Figure 6I).

Stream 17 is a NYSDEC mapped stream identified as the Esopus Creek (Waters Index No. H-171). The stream was observed flowing northeast to the southwest. Observed water depth in the channel was 3-12 inches with a channel width of approximately 200 feet. This stream is a Class A stream with A(T) standards (Figure 6J).

6.3 Wetland and Surface Water Labeling

A total of 16 wetlands were identified and delineated adjacent to the Project Corridor as part of this wetland delineation field effort. Figures 6A through 6J show the locations of wetlands delineated as part of the Ashokan Rail Trail field walkover, as well as the location of the 17 observed Waters of the U.S. Table 5, below, provides the coordinates of each wetland and stream located within the Project Corridor. Identified wetland areas were individually labeled as A through P. Streams observed within the project area were labeled as Stream 1 through Stream 17. The data collected in the field were recorded on field data sheets provided in Appendix A. Color photographs of various portions of the delineated wetland resources are included in Appendix B.

Table 5. Wetland and Stream Locations

Resource ID	Type of Resource	Lat/Long Coordinates (NAD83)
A	Wetland	41°59'36.01"N, 74° 5'27.64"W
B	Wetland	42° 0'5.23"N, 74° 7'47.75"W
C	Wetland	41°59'42.48"N, 74° 5'32.51"W
D	Wetland	41°59'42.19"N, 74° 5'31.42"W
E	Wetland	41°59'44.24"N, 74° 9'14.53"W
F	Wetland	41°58'49.68"N, 74°10'57.76"W
G	Wetland	41°58'48.99"N, 74°10'59.81"W
H	Wetland	41°58'40.09"N, 74°11'21.86"W
I	Wetland	41°58'35.38"N, 74°11'34.48"W
J	Wetland	41°58'20.23"N, 74°12'15.83"W
K	Wetland	41°58'17.03"N, 74°12'24.42"W
L	Wetland	41°58'17.69"N, 74°12'24.47"W
M	Wetland	41°58'10.89"N, 74°12'40.99"W
N	Wetland	41°58'10.72"N, 74°12'40.71"W
O	Wetland	41°58'20.68"N, 74°14'37.94"W
P	Wetland	42° 0'2.59"N, 74°16'12.76"W

Table 5. Wetland and Stream Locations		
Resource ID	**Type of Resource**	**Lat/Long Coordinates (NAD83)**
1	Stream	42°0'3.955"N, 74°7'35.846"W
2	Stream	42°0'4.43"N, 74°7'50.57"W
3	Stream	42°0'3.126"N, 74°8'5.448"W
4	Stream	41°59'57.381"N, 74°8'51.728"W
5	Stream	41°59'43.523"N, 74°9'14.097"W
6	Stream	41°59'29.018"N, 74°9'45.409"W
7	Stream	41°58'51.309"N, 74°10'51.827"W
8	Stream	41°58'49.08"N, 74°10'57.858"W
9	Stream	41°58'36.267"N, 74°11'34.791"W
10	Stream	41°58'27.057"N, 74°11'55.15"W
11	Stream	41°58'24.273"N, 74°12'4.192"W
12	Stream	41°58'1.983"N, 74°13'10.877"W
13	Stream	41°58'2.626"N, 74°13'44.729"W
14	Stream	41°58'13.383"N, 74°14'23.43"W
15	Stream	41°58'26.086"N, 74°14'54.98"W
16	Stream	41°58'44.687"N, 74°15'28.768"W
17	Stream	41°59'56.32"N, 74°16'14.05"W

7.0 Summary and Conclusions

This wetland and stream delineation effort was completed to determine the locations of freshwater wetlands and waters within and adjacent to the Ashokan Rail Trail Project Corridor, located in the Towns of Hurley and Olive, Ulster County, New York. Based on the field observations and data associated with each delineated wetland, 13 wetlands (A-L and P) meet the criteria for federal wetland jurisdiction and are regulated by the USACE under Section 404 of the Clean Water Act. Wetlands M, N, and O are presumed to be isolated due to lack of bed and bank features, or observed connectivity to any additional Waters of the U.S. Wetlands M and N appear to function as localized drainage ditches, while Wetland O was observed with no inlet or outlet in a topographic low spot within the center of the trail alignment. Regardless of field observations and conclusions, the USACE has the final determination regarding federal resource jurisdiction. The Project Corridor travels through one NYSDEC mapped wetland (AS-20) and adjacent to another, NYSDEC mapped wetland (AS-19). An Article 24 permit will be required for proposed disturbance within delineated Wetlands K and L (as they are associated with NYSDEC mapped Wetland AS-20) and for disturbance within the 100-foot buffer of NYSDEC mapped Wetlands AS-19 and AS-20. A summary table of the wetlands delineated within the Project Corridor, and their recorded characteristics and federal indicators, is provided below.

Table 6. Wetland Data Plot Information and Federal Wetland Criteria

Wetland ID	Wetland Cover Type Class	Hydrologic Indicators	Dominant Vegetation	Hydrophytic Vegetation Indicator	Hydric Soil Indicator
A	Emergent	A2, A3, D2, D5	Broom sedge, shallow sedge, pinkweed	Dominance test	S1
B	Emergent	A2, A3, D1, D5	Shallow sedge, broom sedge	Dominance test	F6
C	Emergent	A2, A3, D2, D5	American bur-reed	Dominance test	F3
D	Emergent	A2, A3, D2, D5	Speckled alder, Japanese stilt grass, prickly sedge	Dominance test	F3
E	Emergent	A3, B10, D2, D5	Green bulrush, arrow-leaf tearthumb, Japanese stilt grass	Dominance test	F6
F	Emergent	A2, A3, D2, D5	Jewelweed, pinkweed, silver maple, red maple	Dominance test	F6
G	Emergent	A2, A3, B10, D2, D5	Jewelweed, prickly sedge, red maple, white ash, American beech	Dominance test	F6
H	Emergent	A3, B10, D2, D5	Jewelweed, Japanese stilt grass, red maple	Dominance test	F6
I	Emergent	A3, B10, D2, D5	Jewelweed	Dominance test	F6
J	Forested/ Scrub-shrub	A2, A3, D5	Red osier dogwood, rattlesnake grass, shallow sedge	Dominance test	F6
K	Emergent	A2, A3, D2, D5	Common reed	Dominance test	F6
L	Emergent	A2, A3, D5	Speckled alder, red osier dogwood, common reed	Dominance test	F6
M	Emergent	A2, A3, D2, D5	Japanese stilt grass, rattlesnake grass	Dominance test	F6
N	Emergent	A2, A3, D2, D5	Broom sedge, shallow sedge, soft rush	Dominance test	F3
O	Emergent	A2, A3, C1, D5	Jewelweed	Dominance test	F8
P	Emergent	A3, B10, D2, D5	Japanese stilt grass, jewelweed, white ash	Dominance test	F6

During the field walkover, stream resources identified within the Project Corridor that met the definition of Waters of the U.S. were recorded. These resources, a total of 17, are assumed to be regulated by the USACE under Section 404 of the Clean Water Act. In addition, six of these streams constitute NYSDEC mapped and protected streams, each with a Class A designation. While eight NYSDEC mapped streams were indicated during the preliminary site investigation (Section 3.5), one stream, Tributary 8 of the Ashokan Reservoir (H-171-P 848-8), was not observed during the field walkover, and a second stream, Tributary 1 of Butternut Creek (H-171-P 848-9-1), was observed outside (north) of the Project Corridor and was therefore not included in the field delineation. In addition to the six NYSDEC mapped streams, 11 unmapped water resources were identified during the site walkover, and were observed to meet criteria to be recognized as federally regulated Waters of the U.S. These 11 tributaries are assumed to be Class A waters, since unmapped streams typically assume the water quality classification of the water body into which they discharge. The mapped streams are regulated by the NYSDEC under the Protection of Waters Program (Article 15) due to their high quality and contribution to a drinking water source. The stream and wetland resources delineated within the Project Corridor will also be reviewed and permitted, if impacted, by the NYCDEP.

A Section 404 Permit from the USACE and a Section 401 Water Quality Certification from the NYSDEC will be required if any temporary or permanent impacts to these wetlands or streams are proposed as part of the project. Wetlands and Waters of the U.S. will be avoided and impacts minimized to the extent possible. Specific resource and location impacts will be determined during the detailed design phase. Feasible mitigative options will be reviewed and identified if greater than 0.1-acre of wetland will be permanently impacted, or permanent impacts to stream resources and aquatic function will occur. Applicable state and federal permits will be identified during the detailed design phase based on the calculated impacts, and a Joint Application for Permit will be assembled and submitted to the USACE, NYSDEC, and NYCDEP to request permit issuance in support of the proposed Ashokan Rail Trail project.

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Figure 1

Site Location Map – Aerial Imagery

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N
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S

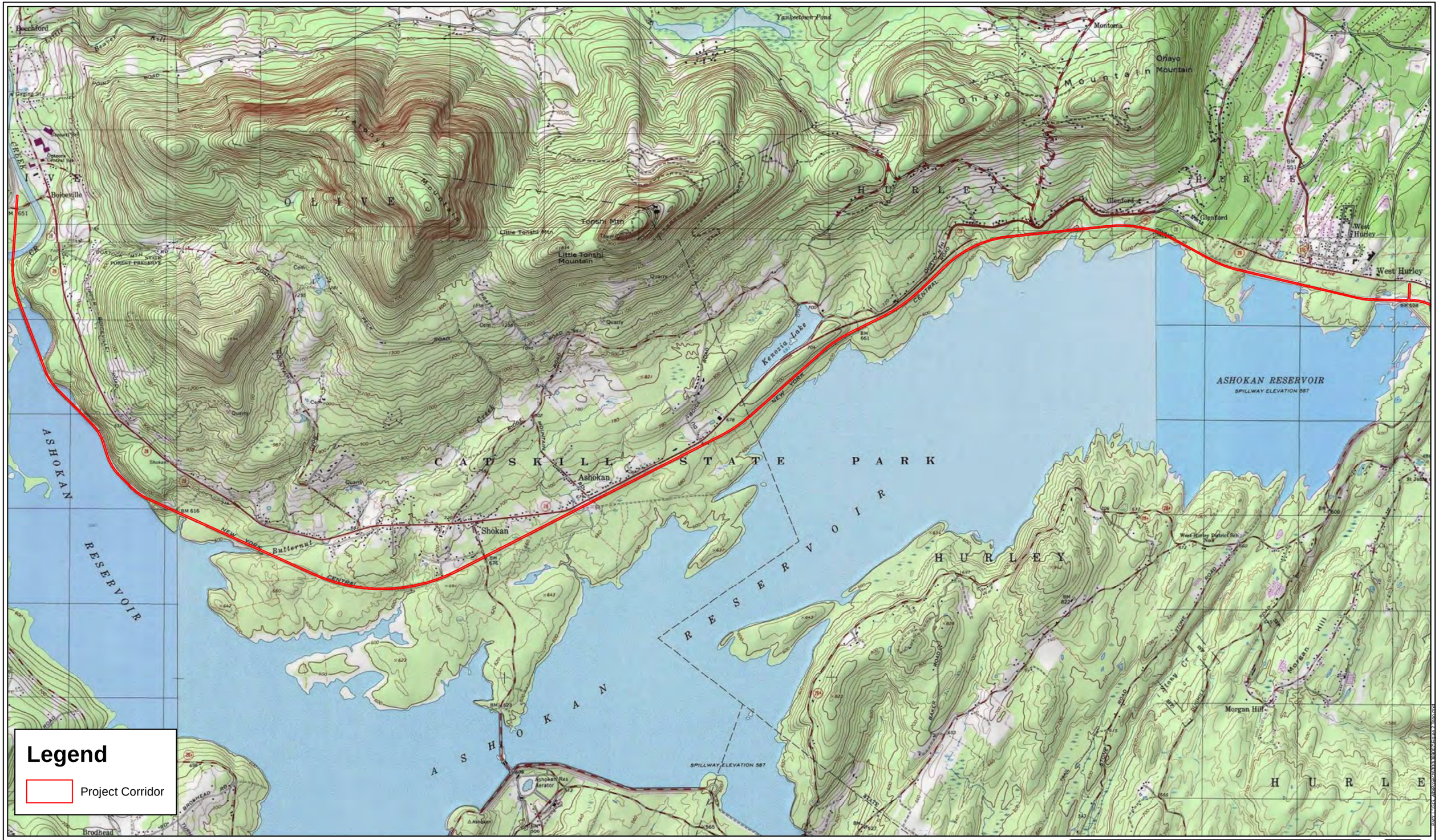
1 inch = 3,000 feet

Ulster County
Ashokan Rail Trail -
Aerial Imagery
Ulster County March 2017 New York

Figure 1
Project No. 369.007

Figure 2

Site Location Map – Topographic Imagery



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Ashokan Rail Trail - Topographic Imagery

Ulster County March 2017 New York

Figure 2

Project No. 369.007

Figures 3 and 3A

NRCS Mapped Soils

Legend

Project Corridor

Soil Series Symbol

- ARF - Arnot-Oquaga-Rock outcrop
- AcB - Arnot Channery silt loam
- LCD - Lackawanna and Swartswood soils, moderately steep
- LaC - Lackawanna flaggy silt loam
- ML - Made land
- MTB - Morris-Tuller complex
- Mn - Menlo silt loam
- ORC - Oquaga-Arnot-Rock outcrop, sloping
- ORD - Oquaga-Arnot-Rock complex, moderately steep
- OgB - Oquaga channery silt loam, 3-8% slopes
- OlC - Oquaga channery sil loam, 8-15% slopes
- QU - Quarry
- SEB - Scriba and Morris soils
- W - Water
- WLB - Wellsboro and Wurtsboro soils

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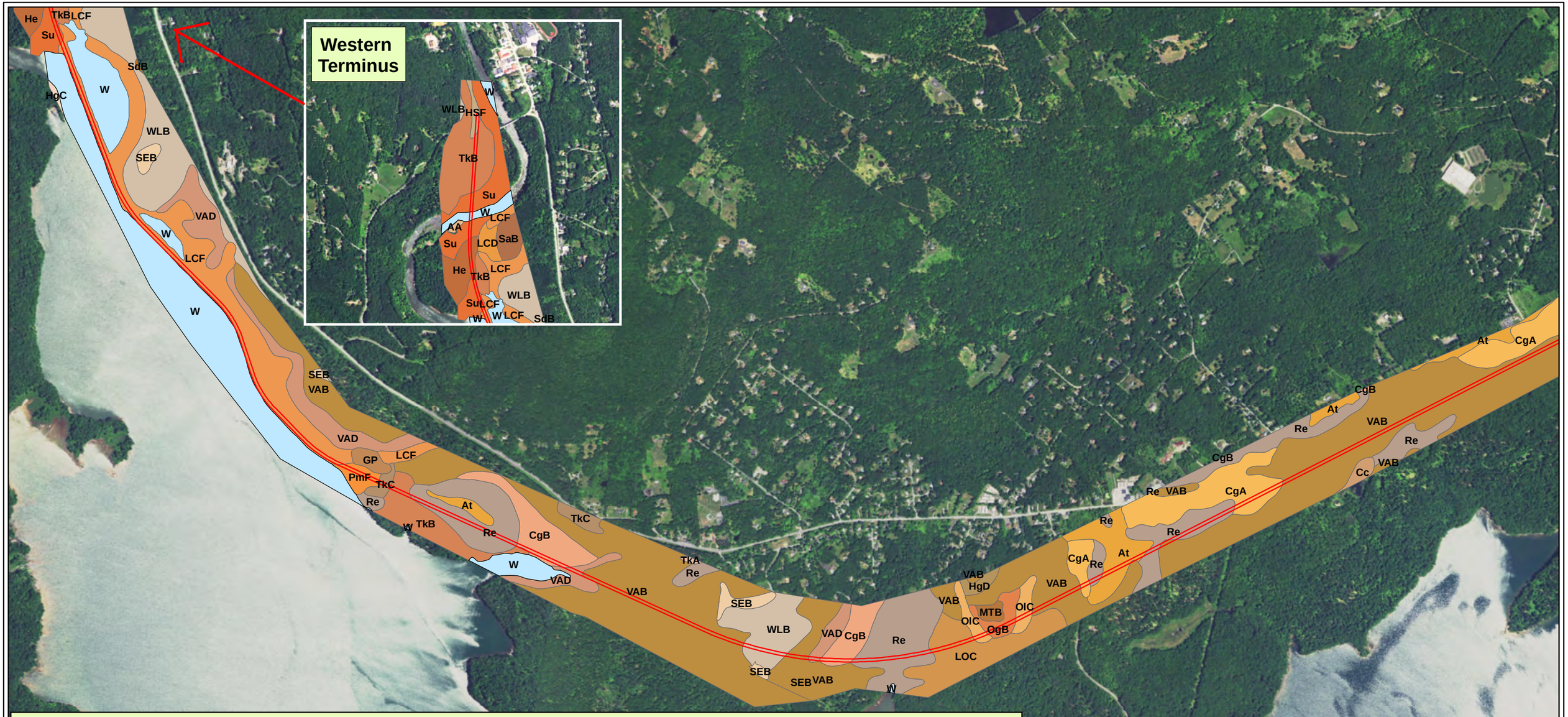
Ashokan Rail Trail - NRCS Soils

Ulster County — March 2017 — New York

Figure 3

Project No. 369.007



Legend

Project Corridor

Soil Series Symbol

- At - Atherton silt loam
- Cc - Canandaigua silt loam
- CgA - Castile gravelly silt loam
- CgB - Castile gravelly silt loam, 3-8% slopes
- GP - Gravel pit
- He - Haven loam
- HgC - Hoosic gravelly loam, rolling
- HgD - Hoosic gravelly loam, 15-25% slopes
- LCF - Lackawanna and Swartswood soils, very steep
- LOC - Lordstown-Arnot-Rock outcrop complex
- MTB - Morris-Tuller complex
- OgB - Oquaga channery silt loam, 3-8% slopes
- OIC - Oquaga channery sil loam, 8-15% slopes
- PmF - Plainfield-Riverhead complex
- Re - Red Hook gravelly silt loam
- SEB - Scriba and Morris soils
- SdB - Scriba and Morris soils, 0-8% slopes
- Su - Suncook loamy fine sand
- TkA - Tunkhannock gravelly loam, 0-3% slopes
- TkB - Tunkhannock gravelly loam, 3-8% slopes
- TkC - Tunkhannock gravelly loam, rolling
- VAB - Valois very bouldery soils
- VAD - Valois very bouldery soils, moderately steep
- W - Water
- WLB - Wellsboro and Wurtsboro soils

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Ashokan Rail Trail - NRCS Soils

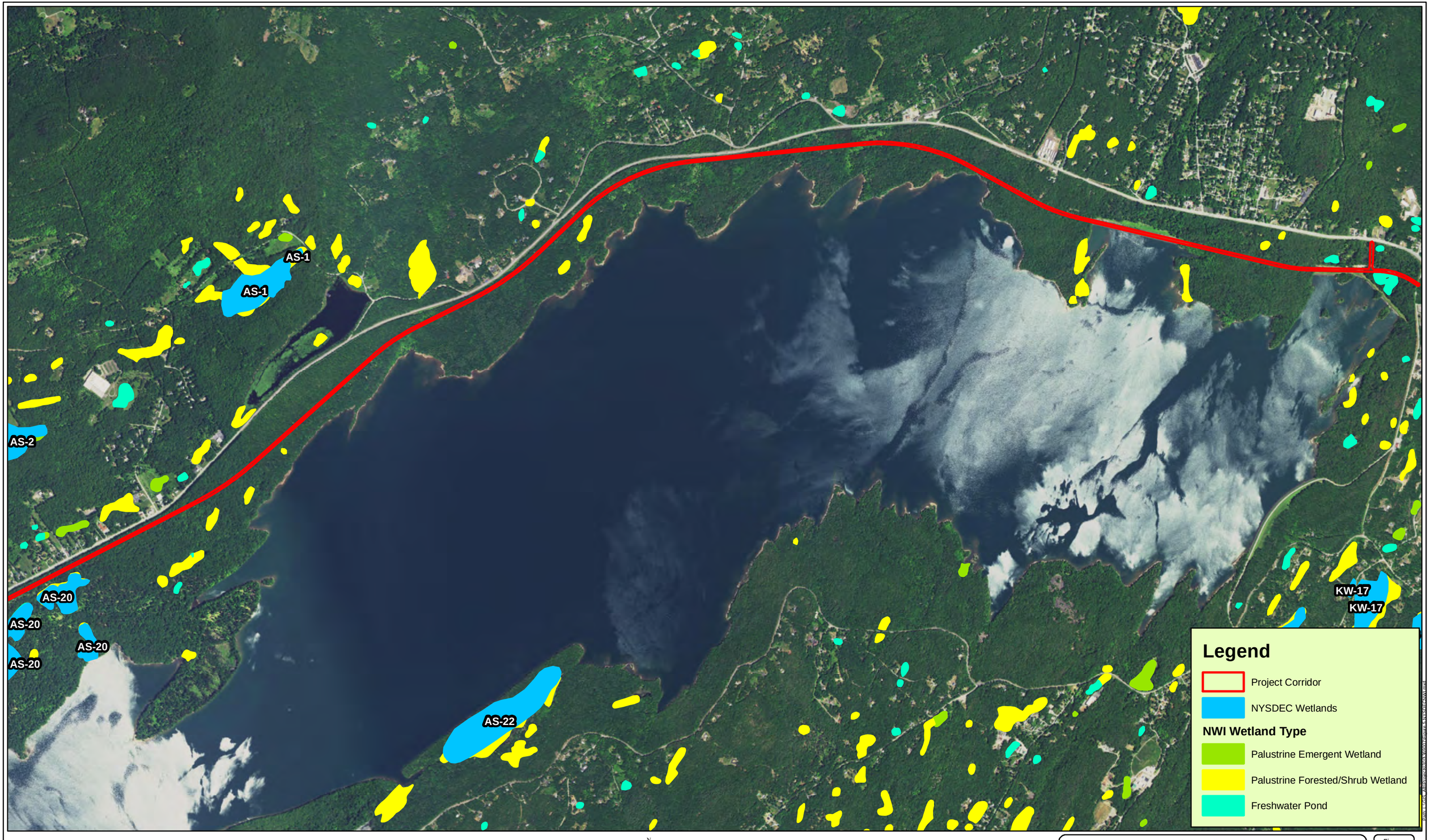
Ulster County March 2017 New York

Figure 3A

Project No. 369.007

Figures 4 and 4A

NYSDEC/NWI Wetlands



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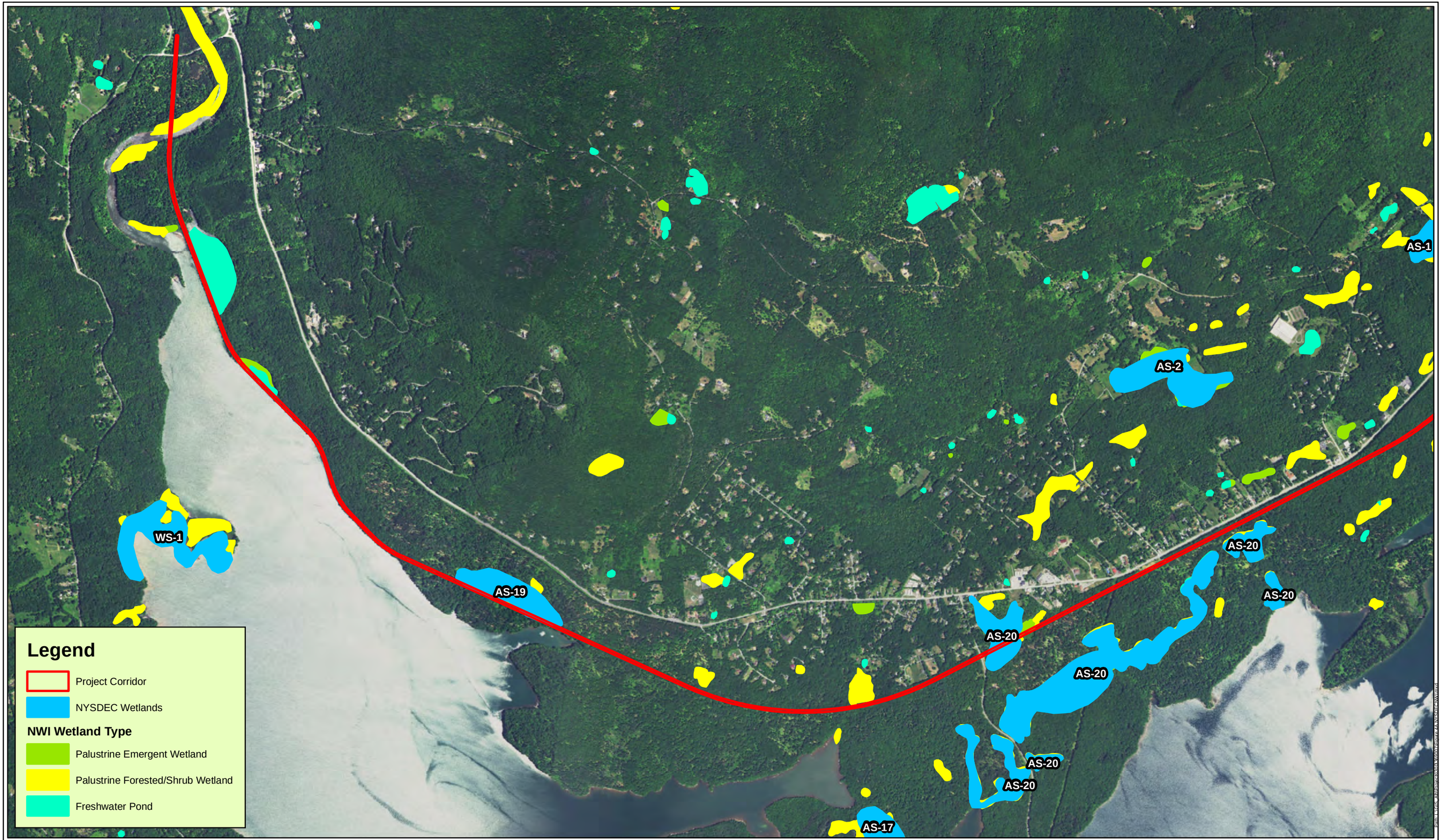
Ashokan Rail Trail -
NYSDEC/NWI Wetlands
Ulster County March 2017 New York

Figure 4

Project No. 369.007



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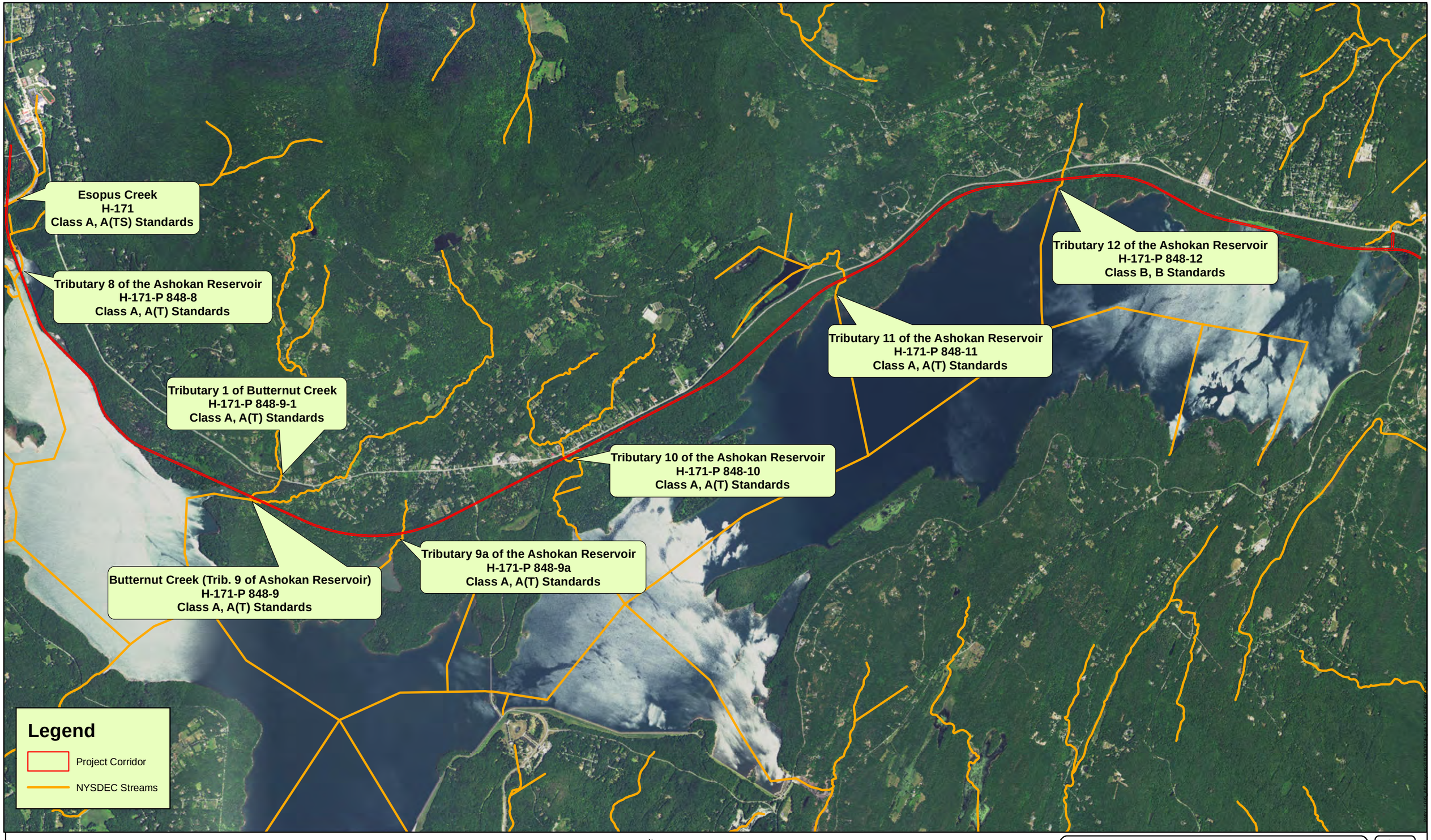
Ashokan Rail Trail -
NYSDEC/NWI Wetlands
Ulster County March 2017 New York

Figure 4A

Project No. 369.007

Figure 5

NYSDEC Mapped Streams



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Ashokan Rail Trail -
NYSDEC Mapped Streams

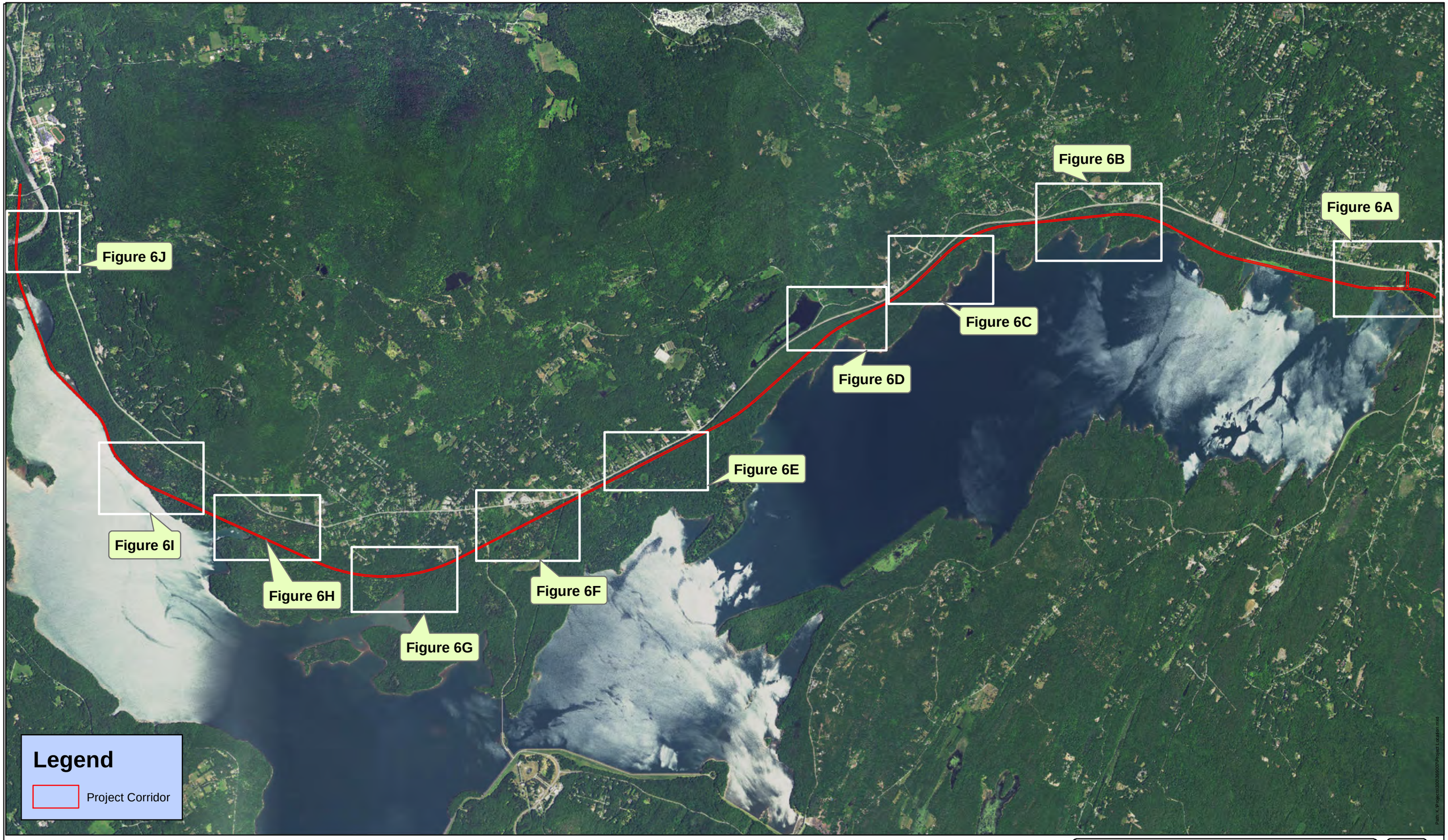
Ulster County March 2017 New York

Figure 5

Project No. 369.007

Figures 6A-6J

Delineated Resources



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Ashokan Rail Trail -
Delineated Resources Index Sheet
Ulster County January 2017 New York

Figure 6
Project No. 369.007

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1 inch = 250 feet

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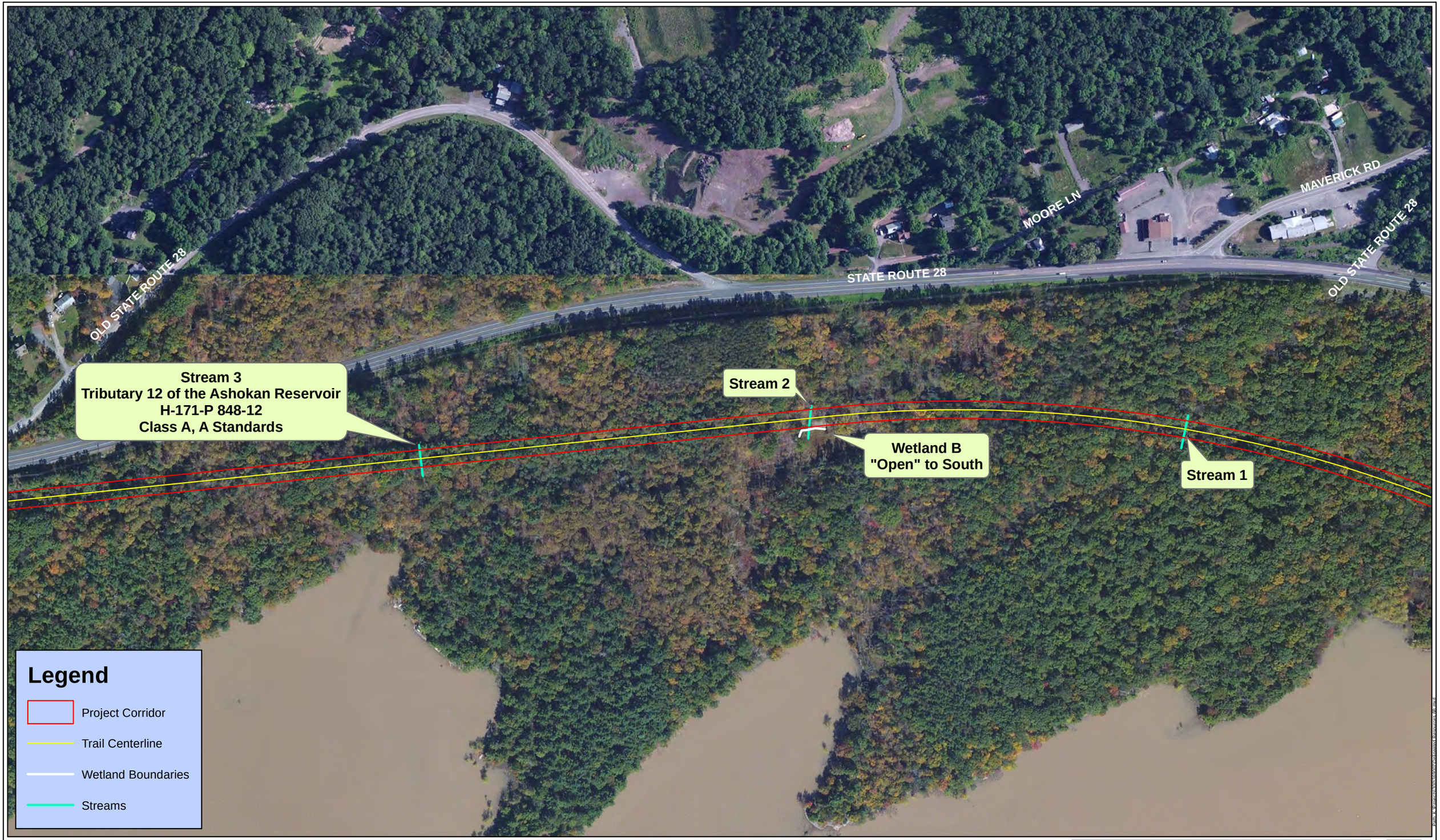
Ashokan Rail Trail -
Delineated Resources
Ulster County May 2017 New York

Figure 6A

Project No. 369.007



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1 inch = 250 feet

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Ashokan Rail Trail -
Delineated Resources
Ulster County May 2017 New York

Figure 6B

Project No. 369.007

Stream 4

Stream 5

Wetland E
"Open" to Southeast

Legend

- Project Corridor
- Trail Centerline
- Wetland Boundaries
- Streams

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Ashokan Rail Trail - Delineated Resources
Ulster County May 2017 New York

Figure 6C

Project No. 369.007

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Ashokan Rail Trail -
Delineated Resources
Ulster County May 2017 New York

Figure 6D

Project No. 369.007

Legend

- Project Corridor
- Trail Centerline
- Wetland Boundaries
- Streams

DUBOIS RD

Stream 8

Stream 7

Wetland F
"Open" to Northeast

Wetland G

SUNKIST LN

STATE ROUTE 28

Wetland H
"Open" to Southwest

Wetland I
"Open" to the Northwest

Stream 9

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1 inch = 250 feet

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Ashokan Rail Trail -
Delineated Resources
Ulster County May 2017 New York

Figure 6E

Project No. 369.007

Legend

- Project Corridor
- Trail Centerline
- Wetland Boundaries
- Streams

STATE ROUTE 28

RESERVOIR RD

VAN STEENBERGH LN

Stream 11

Stream 10
Tributary 10 of the Ashokan Reservoir
H-171-P 848-10
Class A, A(T) Standards

Wetland J
"Open" to Northwest

Wetland K
"Open" to North, South, and West

Wetland L
"Open" to North, South, and East

Upland between K and L

Wetland M

Wetland N

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1 inch = 250 feet

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Ashokan Rail Trail -
Delineated Resources
Ulster County May 2017 New York

Figure 6F

Project No. 369.007

BONNIE BRAE LN

MARKLE RD

STATE ROUTE 28

LONGYEAR RD

Stream 14
Butternut Creek (Trib. 9 of the Ashokan Reservoir)
H-171-P 848-9
Class A, A(T) Standards

Stream 13

Legend

- Project Corridor
- Trail Centerline
- Wetland Boundaries
- Streams

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1 inch = 250 feet

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Ashokan Rail Trail -
Delineated Resources
Ulster County May 2017 New York

Figure 6G

Project No. 369.007

Legend

- Project Corridor
- Trail Centerline
- Wetland Boundaries
- Streams

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Ashokan Rail Trail - Delineated Resources
Ulster County May 2017 New York

Figure 6H

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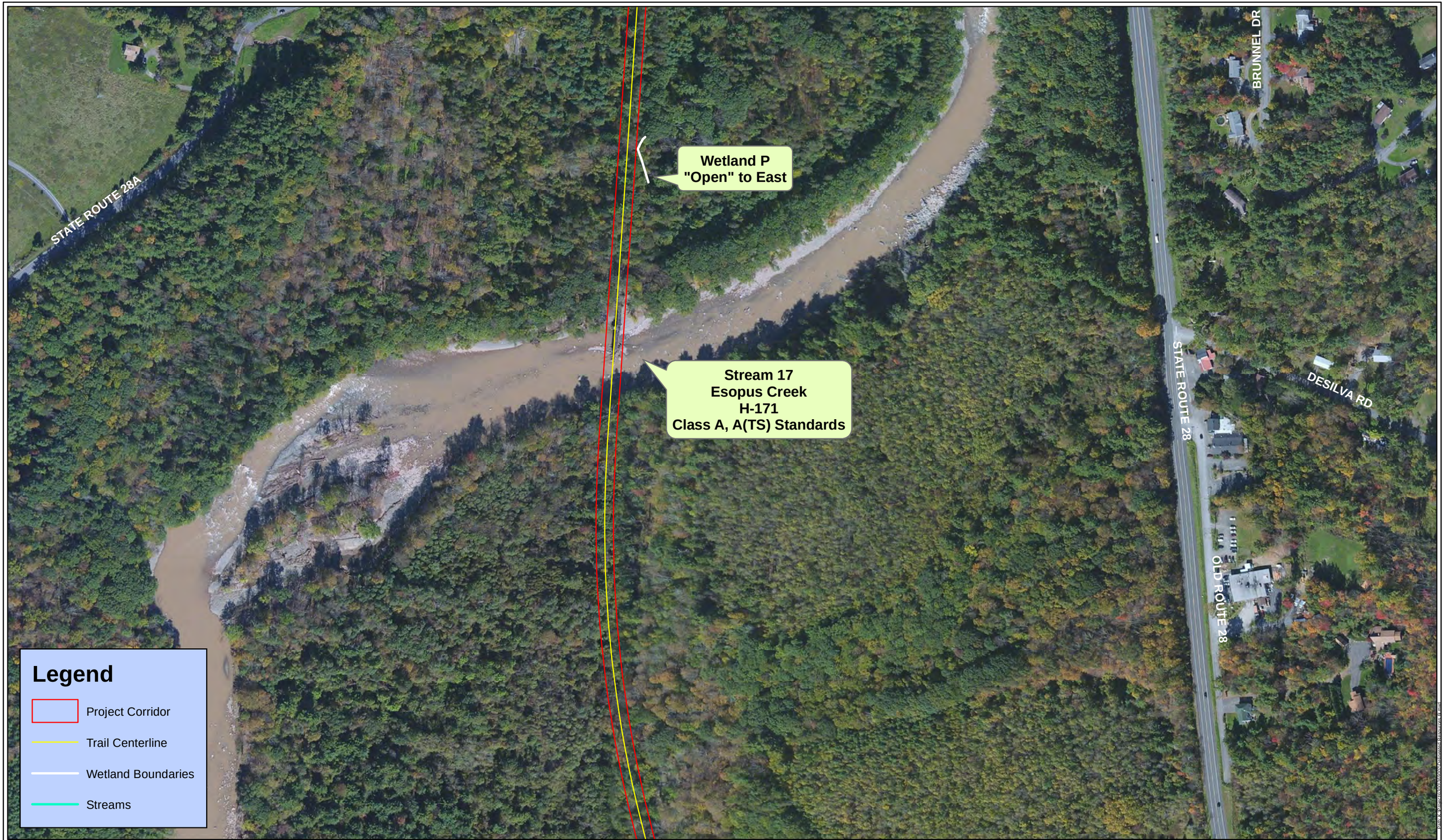
Ashokan Rail Trail -
Delineated Resources
Ulster County May 2017 New York

Figure 6I

Project No. 369.007



Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

N W E S

1 inch = 250 feet

Ulster County Planning Department
Ashokan Rail Trail -
Delineated Resources
Ulster County January 2017 New York

Figure 6J

Project No. 369.007

Appendix A

Wetland/Upland
Field Delineation Datasheets

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Hurley/Ulster Sampling Date: 6/28/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet A

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave Slope %: 30

Subregion (LRR or MLRA): LRR R Lat: 41°59'36.01"N Long: 74° 5'27.64"W Datum: NAD '83

Soil Map Unit Name: Oquaga-arnot-rock outcrop complex NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Located on south side of trail, just northeast of Ashokan Reservoir and the Woodstock Dike. Area is an impoundment of water, mostly likely fed by seepage from the reservoir and is mapped by the NWI.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Hydrology present at surface. Ponding potentially fed by Ashokan reservoir. Water table was noted to be at surface; the majority of wetland was inundated with depths of water ranging from 2"-12+".

VEGETATION – Use scientific names of plants. Sampling Point: Wet A

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Carex scoparia*	25	Yes	FACW
2. *Carex lurida*	20	Yes	OBL
3. *Persicaria pensylvanica*	20	Yes	FACW
4. *Lemna minor*	10	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	45	x 2 =	90
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	75 (A)		120 (B)

Prevalence Index = B/A = 1.60

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
All vegetation noted was hydrophytic, with duckweed present on surface waters.

SOIL

Sampling Point Wet A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1						Muck	50% Organic material
3-6	10YR 2/1	80	10YR 5/4	20	C	M	Mucky Sand	Distinct redox concentrations
6-8	10YR 3/2	80	10YR 6/8	20	C	M	Mucky Sand	Prominent redox concentrations
8-10	2.5YR 5/4	100					Mucky Sand	
10-22	2.5YR 6/4	90	7.5YR 4/6	10	C	M	Mucky Sand	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- X Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The indicator S1 (sandy mucky mineral) was satisfied as greater than 2" of mucky sand material was present within the upper 6" of the soil. The top layers were primarily dark muck that shifted to a much lighter matrix below 6". There were few, but prominent, redox concentrations present.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Hurley/Ulster Sampling Date: 6/28/16

Applicant/Owner: Ulster County State: NY Sampling Point: UPL A

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Slope Local relief (concave, convex, none): Slope %:

Subregion (LRR or MLRA): LRR R Lat: 41°59'36.01"N Long: 74° 5'27.64"W Datum: NAD '83

Soil Map Unit Name: OrC NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Located on south side of trail, just west of Ashokan Reservoir.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches): 0
Water Table Present?	Yes	No X	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches): 0

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UPL A

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	45	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	45	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Populus tremuloides*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Fragaria vesca*	30	Yes	UPL
2. *Microstegium vimineum*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	55	x 4 =	220
UPL species	30	x 5 =	150
Column Totals:	100 (A)		415 (B)

Prevalence Index = B/A = 4.15

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point UPL A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/2	100						
4-10	10YR 5/2	100						
10-24	10YR 5/2	90	10YR 5/3	10				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Hurley/Ulster Sampling Date: 6/28/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet B

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave Slope %:

Subregion (LRR or MLRA): LRR R Lat: 42° 0'5.23"N Long: 74° 7'47.75"W Datum: NAD 83

Soil Map Unit Name: Morris Tuller complex NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: Wetland B

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland B is located at the toe of slope on the south side of the abandoned rail line. North of this location, Old State Route 28 converges with the current State Route 28 and it is just east of Maverick Cove. No mapped wetlands are indicated in this area but an unmapped stream resources runs through from north to south. The wetland continues southward, toward the Ashokan Reservoir.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes X	No	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 3

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: Wet B

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Lonicera*	2	No	
2.			
3.			
4.			
5.			
6.			
7.			
	2	=Total Cover	
Herb Stratum (Plot size:)			
1. *Carex lurida*	60	Yes	OBL
2. *Carex scoparia*	25	Yes	FACW
3. *Juncus effusus*	10	No	OBL
4. *Glyceria*	2	No	
5. *Poaceae*	2	No	
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	99	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	25	x 2 =	50
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		120 (B)

Prevalence Index = B/A = 1.26

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Prominent wetland vegetation evident.

SOIL

Sampling Point Wet B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/1	85	5YR 4/6	15	C	M	Loamy/Clayey	Prominent redox concentrations
6-8	10YR 3/2	98	10YR 6/8	2	C	M	Loamy/Clayey	Prominent redox concentrations
8-12	10YR 3/2	85	10YR 6/8	15	C	M	Loamy/Clayey	Prominent redox concentrations
12-18	10YR 3/2	88	10YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
			10YR 5/8	2				
18-23	10YR 4/3	70	10YR 5/8	30	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The hydric soil indicator F6 (redox dark surface) was satisfied within the first layer of soil (1-6"), which had a color of 10YR 3/1 with 15% redox concentrations. Indicator F6 is met when 4" layer of soil, entirely within the upper 12", has a matrix value of 3 or less and chroma of 1 or less with at least 2% or more distinct or prominent redox concentrations,

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Hurley/Ulster Sampling Date: 6/28/16

Applicant/Owner: Ulster County State: NY Sampling Point: UPL B

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range: _____

Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope %: _____

Subregion (LRR or MLRA): LRR R Lat: 42° 0'5.23"N Long: 74° 7'47.75"W Datum: NAD 83

Soil Map Unit Name: MtB NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes _____	No X	**within a Wetland?** **Yes** _____ **No** X
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ? Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UPL B

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1. *Quercus rubra*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15 =Total Cover		
Herb Stratum (Plot size:)			
1. *Poaceae*	60	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	15 (A)		60 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point UPL B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/4							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Ballast

Depth (inches): 2

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Hurley/Ulster Sampling Date: 6/28/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet C

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave Slope %:

Subregion (LRR or MLRA): LRR R Lat: 41°59'42.48"N Long: 74° 5'32.51"W Datum: NAD 83

Soil Map Unit Name: Oquaga-Arnot-Rock outcrop complex NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No	**within a Wetland?** **Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: Wetland C

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland C is ponded on west side of reservoir access roadway near the Woodstock and Glenford Dike areas, and is parallel to Wetland D. Both wetlands are mapped by NWI. A stream resource feeds this wetland from the north; a culvert under the access drive allows for hydrology to pass to Wetland D.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches): 0
Water Table Present?	Yes X	No	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
At wetland plot, high water table and saturation at surface were noted. Wetland also features considerable ponding of surface water, from 2-4" and deeper in spots.

VEGETATION – Use scientific names of plants.

Sampling Point: Wet C

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Sparganium americanum*	50	Yes	OBL
2. *Eupatorium perfoliatum*	5	No	FACW
3. *Lemna minor*	5	No	OBL
4. *Impatiens capensis*	2	No	FACW
5. *Galium*	2	No	
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	64 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	55	x 1 =	55
FACW species	7	x 2 =	14
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	62 (A)		69 (B)

Prevalence Index = B/A = 1.11

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Prominent wetland vegetation evident.

SOIL

Sampling Point Wet C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					Muck	15% organic material
4-6	7.5YR 4/2	95	7.5YR 4/6	5	C	M	Mucky Loam/Clay	Prominent redox concentrations
6-12	2.5Y 6/2	70	2.5Y 5/6	30	C	M	Mucky Loam/Clay	Prominent redox concentrations
12-24	2.5Y 6/3	80	2.5Y 6/8	20	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The hydric soil indicator F3 (depleted matrix) was met when both criteria (2" within upper 6" or 6" within upper 10" of soil with chroma of 2 or less). A chroma of 2 or less was noted to a depth of 12". Additionally, prominent redox concentrations were noted in all layers from 6" to 24" depth.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Hurley/Ulster Sampling Date: 6/28/16

Applicant/Owner: Ulster County State: NY Sampling Point: UPL C/D

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave Slope %:

Subregion (LRR or MLRA): LRR R Lat: 41°59'42.48"N Long: 74° 5'32.51"W Datum: NAD 83

Soil Map Unit Name: OrC NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland C on west side of reservoir access roadway.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Hurley/Ulster Sampling Date: 6/28/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet D

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave Slope %: 10

Subregion (LRR or MLRA): LRR R Lat: 41°59'42.19"N Long: 74° 5'31.42"W Datum: NAD 83

Soil Map Unit Name: Oquaga-Arnot-Rock outcrop complex NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland D is ponded on the east side of reservoir access roadway near the Woodstock and Glenford Dike areas, and is parallel to Wetland C. Both wetlands are mapped by NWI. An offsite stream resource feeds wetland C from the north; a culvert under the access drive allows for hydrology to pass to Wetland D.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
At wetland plot, high water table and saturation at surface were noted. Wetland also features considerable ponding of surface water, from 2-4" and deeper in spots.

VEGETATION – Use scientific names of plants.

Sampling Point: Wet D

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Alnus incana*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Microstegium vimineum*	60	Yes	FAC
2. *Carex stipata*	20	Yes	OBL
3. *Scirpus atrovirens*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	10	x 2 =	20
FAC species	60	x 3 =	180
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		230 (B)

Prevalence Index = B/A = 2.30

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Prominent hydrophytic vegetation present.

SOIL

Sampling Point Wet D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2		100						Organic Matter
2-6	10YR 2/1	100					Mucky Loam/Clay	
6-8	10YR 2/1	75	10YR 6/8	25	C	M	Mucky Loam/Clay	Distinct redox concentrations
8-14	2.5Y 6/2	85	10YR 6/8	15	C	M	Mucky Loam/Clay	Distinct redox concentrations
14-24	2.5Y 6/3	80	2.5Y 6/6	20	C	M	Loamy/Clayey	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The hydric soil indicator F3 (depleted matrix) was met when both criteria (6" within upper 10" of soil with chroma of 2 or less). A chroma of 2 or less was noted to a depth of 12" for all layers. Additionally, prominent redox concentrations were noted in all layers from 6" to 24" depth.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Hurley/Ulster Sampling Date: 6/28/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet E

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): Concave Slope %: 15

Subregion (LRR or MLRA): LRR R Lat: 41°59'44.24"N Long: 74° 9'14.53"W Datum:

Soil Map Unit Name: Oquaga-Arnot-Rock outcrop complex NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Wetland E

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland E was located on the south side of the rail corridor and continued southeast beyond the delineated limits. No wetland mapping is recorded in this area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 4

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Saturation was present within 4" of the soil surface. Visible drainage patterns were noted in bare patches of soil as well as bent vegetation suggesting water passage.

VEGETATION – Use scientific names of plants. Sampling Point: Wet E

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Scirpus atrovirens*	25	Yes	OBL
2. *Persicaria sagittata*	15	Yes	OBL
3. *Microstegium vimineum*	15	Yes	FAC
4. *Phleum pratense*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	60 (A)		105 (B)

Prevalence Index = B/A = 1.75

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
A dominance of wetland vegetation was present. The invasive Japanese stiltgrass was present throughout the corridor and on the wetland E fringe.

SOIL

Sampling Point Wet E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	90	2.5Y 7/8	10	C	M	Loamy/Clayey	Prominent redox concentrations
2-6	10YR 3/2	85	5YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
			2.5Y 7/8	5	C	M		Prominent redox concentrations
6-14	5YR 3/2	90	5YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
14-22	5YR 4/3	90	7.5YR 5/8	10	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The hydric soil indicator F6 (redox dark surface) was met as the upper 14" demonstrated a value of 3 with a chroma of 2 or less in all layers. Redox features were noted throughout all layers, as well.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Hurley/Ulster Sampling Date: 6/28/16

Applicant/Owner: Ulster County State: NY Sampling Point: UPL E

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range: _____

Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope %: _____

Subregion (LRR or MLRA): LRR R Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: OrC NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes _____	No X	**within a Wetland?** **Yes** _____ **No** X
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): _____
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UPL E

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phleum pratense*	60	Yes	FACU
2. *Microstegium vimineum*	10	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	70 (A)		270 (B)

Prevalence Index = B/A = 3.86

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point UPL E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2							
2-12	10YR 4/2							
12-18	10YR 4/3							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet F

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave Slope %: 10

Subregion (LRR or MLRA): LRR R Lat: 41°58'49.68"N Long: 74°10'57.76"W Datum: NAD 83

Soil Map Unit Name: Valois very bouldery soils NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Wetland F

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland F was located on the north side of the railroad tracks, south of the intersection of Dubois Road and Route 28. Wetland G was located on the south side of the tracks, at the western end of Wetland F.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Soil was saturated at surface, with the water table within 1 inch of the surface.

VEGETATION – Use scientific names of plants. Sampling Point: Wet F

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	50	Yes	FACW
2. *Acer rubrum*	45	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	95	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Impatiens capensis*	45	Yes	FACW
2. *Persicaria pensylvanica*	15	Yes	FACW
3. *Persicaria sagittata*	5	No	OBL
4. *Lemna minor*	5	No	OBL
5. *Pilea pumila*	5	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	115	x 2 =	230
FAC species	45	x 3 =	135
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	170 (A)		375 (B)

Prevalence Index = B/A = 2.21

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Prominent hydrophytic vegetation noted with the dominance test.

SOIL

Sampling Point Wet F

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2								Organic detritus
2-4	10YR 2/2	95	10YR 6/8	5	C	M	Mucky Loam/Clay	Prominent redox concentrations
4-10	10YR 2/2	85	10YR 6/8	15	C	M	Mucky Loam/Clay	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Ballast

Depth (inches): 10

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The indicator F6 (redox dark surface) was met as all soil layers exhibited a value of 2 with a chroma of 2 with 5-15% redox concentrations present. All were within 10 inches as ballast prohibited further depth.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: UPL F

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): Slope %:

Subregion (LRR or MLRA): LRR R Lat: Long: Datum:

Soil Map Unit Name: VaB NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UPL F

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Fragaria vesca*	50	Yes	UPL
2. *Galium aparine*	20	Yes	FACU
3. *Alliaria petiolata*	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	30	x 4 =	120
UPL species	50	x 5 =	250
Column Totals:	100 (A)		430 (B)

Prevalence Index = B/A = 4.30

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point UPL F

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2						Loamy/Clayey	
2-20	10YR 4/2						Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Ballast

Depth (inches): 10

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet G

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave Slope %: 5

Subregion (LRR or MLRA): LRR R Lat: 41°58'48.99"N Long: 74°10'59.81"W Datum: NAD 83

Soil Map Unit Name: Valois very bouldery soils NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Wetland G

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland G was located on the south side of the rail corridor, opposite from Wetland F's western edge.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The soil surface was saturated and water table was within 2" of the surface. Drainage patterns were also visible.

VEGETATION – Use scientific names of plants.

Sampling Point: Wet G

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	15	Yes	FAC
2. *Fraxinus americana*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Fagus grandifolia*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Impatiens capensis*	40	Yes	FACW
2. *Carex stipata*	30	Yes	OBL
3. *Glyceria canadensis*	15	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	40	x 2 =	80
FAC species	15	x 3 =	45
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	125 (A)		270 (B)

Prevalence Index = B/A = 2.16

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
The dominance test was indicated for hydrophytic vegetation.

SOIL

Sampling Point Wet G

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100					Loamy/Clayey	
2-6	10YR 3/2	60	10YR 5/8	20	C	M	Loamy/Clayey	Prominent redox concentrations
			10YR 6/8	20	C	M		Prominent redox concentrations
6-10	10YR 3/2	60	10YR 6/8	25	C	M	Loamy/Clayey	Prominent redox concentrations
			10YR 5/8	15	C	M		Prominent redox concentrations
10-23	10YR 3/3	70	10YR 4/6	30	C	M	Loamy/Clayey	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The soil indicator, F6 (redox dark surface), was met within the first 6" of soil. Both layers had a matrix of 3 or less and chroma of 2 or less; from 2-6", prominent redox concentrations were present, totalling 40%.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: UPL G

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range: _____

Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope %: _____

Subregion (LRR or MLRA): LRR R Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: VaB NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UPL G

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.	15	Yes	
2.	15	Yes	
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.	10	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Microstegium vimineum*	20	Yes	FAC
2. *Fragaria vesca*	15	Yes	UPL
3. *Quercus rubra*	10	Yes	FACU
4. *Toxicodendron radicans*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	10	x 4 =	40
UPL species	15	x 5 =	75
Column Totals:	50 (A)		190 (B)

Prevalence Index = B/A = 3.80

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point UPL G

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2							
2-6	10YR 4/2							
6-18	10YR 4/3							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet H

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave Slope %: 15

Subregion (LRR or MLRA): LRR R Lat: 41°58'40.09"N Long: 74°11'21.86"W Datum:

Soil Map Unit Name: Valois very bouldery soils NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Wetland H

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland H was located south of the railroad corridor in a drainage swale. This drainage feature likely feeds Wetland G.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 4

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Saturation was present within 4 inches of the soil surface, and visible drainage patterns were noted.

VEGETATION – Use scientific names of plants.

Sampling Point: Wet H

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	90	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	90	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Impatiens capensis*	35	Yes	FACW
2. *Microstegium vimineum*	30	Yes	FAC
3. *Persicaria pensylvanica*	10	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	120	x 3 =	360
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	165 (A)		450 (B)

Prevalence Index = B/A = 2.73

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
A dominance of hydric vegetation was present within the wetland.

SOIL

Sampling Point Wet H

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2							
2-6	10YR 3/2	85	10YR 6/8	15	C	M	Loamy/Clayey	Prominent redox concentrations
6-14	10YR 3/2	85	10YR 4/6	15	C	M	Loamy/Clayey	Prominent redox concentrations
14-22	10YR 3/3	80	10YR 5/6	20	C	M	Loamy/Clayey	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The hydric soil indicator F6 (redox dark surface) was satisfied when the layer between 2-6" had a value of 3 and chroma of 2, with prominent redox concentrations of 15%.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: UPL H

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Slope %:

Subregion (LRR or MLRA): LRR R Lat: 41°58'40.09"N Long: 74°11'21.86"W Datum:

Soil Map Unit Name: VaB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes 0	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: UPL H

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	100	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	100	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size:)			
1. *Alliaria petiolata*	35	Yes	FACU
2. *Rosa multiflora*	25	Yes	FACU
3. *Urtica dioica*	15	No	FAC
4. *Galium aparine*	10	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	115	x 3 =	345
FACU species	70	x 4 =	280
UPL species	0	x 5 =	0
Column Totals:	185 (A)		625 (B)

Prevalence Index = B/A = 3.38

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point UPL H

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Ballast

Depth (inches): 2

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet I

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave Slope %: 5

Subregion (LRR or MLRA): LRR R Lat: 41°58'35.38"N Long: 74°11'34.48"W Datum: NAD 83

Soil Map Unit Name: Valois very bouldery soils NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Wetland I

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland I was located on the north side of the rail corridor in a drainage swale.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Soils were saturated at surface and visible drainage patterns were present.

VEGETATION – Use scientific names of plants. Sampling Point: Wet I

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Impatiens capensis*	90	Yes	FACW
2. *Carex scoparia*	3	No	FACW
3. *Persicaria pensylvanica*	2	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		190 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
A dominance of wetland vegetation was present.

SOIL

Sampling Point Wet I

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Loamy/Clayey	25% organic matter
2-6	10YR 3/2	83	10YR 5/8	15	C	M	Loamy/Clayey	Prominent redox concentrations
			5Y 7/8	2	C	M		Prominent redox concentrations
6-12	10YR 3/2	60	10YR 5/6	20	C	M	Loamy/Clayey	Prominent redox concentrations
			5Y 7/6	10	C	M		Prominent redox concentrations
12-22	10YR 6/4	60	10YR 5/6	20	C	M	Loamy/Clayey	Distinct redox concentrations
			5Y 7/6	10	C	M		Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The soil indicator F6 (redox dark surface) was met between 2-6", which exhibited a matrix of 3 and chroma of 2 with 17% redox concentrations.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: UPL I

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave Slope %:

Subregion (LRR or MLRA): LRR R Lat: 41°58'35.38"N Long: 74°11'34.48"W Datum: NAD 83

Soil Map Unit Name: VaB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UPL I

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Carya ovata*	20	Yes	FACU
2. *Acer rubrum*			FAC
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Poaceae spp.*	50	Yes	FACU
2. *Rosa multiflora*	10	No	FACU
3. *Persicaria pensylvanica*	2	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	62	=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	0	x 3 =	0
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	82	(A)	324 (B)

Prevalence Index = B/A = 3.95

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point UPL I

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2							Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ____ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet J

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave Slope %: 10

Subregion (LRR or MLRA): LRR R Lat: 41°58'20.23"N Long: 74°12'15.83"W Datum: NAD 83

Soil Map Unit Name: Red hook gravelly silt loam NWI classification: PSS/PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Wetland J

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland J was located in a drainage swale north of the corridor, just east of wetlands L and K.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 2

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The water table was present at 3 inches, with saturation at 2.

VEGETATION – Use scientific names of plants.

Sampling Point: Wet J

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus alba*	25	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Glyceria canadensis*	30	Yes	OBL
2. *Carex lurida*	15	Yes	OBL
3. *Sparganium americanum*	10	No	OBL
4. *Typha angustifolia*	10	No	OBL
5. *Toxicodendron radicans*	2	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	67	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	25	x 2 =	50
FAC species	2	x 3 =	6
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	92 (A)		121 (B)

Prevalence Index = B/A = 1.32

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Dominant wetland vegetation was present.

SOIL

Sampling Point Wet J

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	98	5YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations
2-12	10YR 2/1	80	5YR 4/6	20	C	M	Loamy/Clayey	Prominent redox concentrations
12-23	10YR 3/2	85	5YR 4/6	15	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The hydric soils indicator F6 (redox dark surface) was met as within the first 12", the soils exhibited a value of 2 and chroma of 1, with redox concentrations 20 percent in the 2-12" layer.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: UPL J

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range: _____

Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope %: _____

Subregion (LRR or MLRA): LRR R Lat: 41°58'20.23"N Long: 74°12'15.83"W Datum: NAD 83

Soil Map Unit Name: Re NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes _____	No X	**within a Wetland?** **Yes** _____ **No** X
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ? Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UPL J

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Quercus rubra*	25	Yes	FACU
2. *Lonicera tatarica*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	40 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Dryopteris carthusiana*	2	No	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	2 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Vitis aestivalis*	10	Yes	FACU
2.			
3.			
4.			
	10 =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	52 (A)		204 (B)

Prevalence Index = B/A = 3.92

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point UPL J

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2						Loamy/Clayey	
2-20	10YR 4/2							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet K

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Flat plain Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR R Lat: 41°58'17.03"N Long: 74°12'24.42"W Datum: NAD 83

Soil Map Unit Name: Atherton silt loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Wetland K

Remarks: (Explain alternative procedures here or in a separate report.)
This wetland is located on the across the entire width of the project corridor and is open to the west, north, and south. It is mapped as NYSDEC wetland AS-20. The wetland K line represents the eastern boundary of AS-20 and wetland L represents the western boundary, with one upland island between.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Areas of the wetland were ponded with up to 3" of water. The soils were saturated at surface and the water table was evident at 1".

VEGETATION – Use scientific names of plants.

Sampling Point: Wet K

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phragmites australis*	80	Yes	FACW
2. *Onoclea sensibilis*	10	No	FACW
3. *Carex lurida*	2	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	92	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	2	No	FAC
2.			
3.			
4.			
	2	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	90	x 2 =	180
FAC species	2	x 3 =	6
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	94 (A)		188 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
The invasive phragmites dominated this wetland.

SOIL

Sampling Point Wet K

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 2.5/2	90	7.5YR 4/6	10	C	M	Mucky Loam/Clay	Prominent redox concentrations
2-8	10YR 3/2	80	10YR 4/6	20	C	M	Mucky Loam/Clay	Prominent redox concentrations
8-16	10YR 3/2	60	7.5YR 6/8	40	C	M	Loamy/Clayey	Prominent redox concentrations
16-22	10YR 4/2	60	7.5YR 6/8	40	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The hydric soil indicator F6 (redox dark surface) was met within the first 8" of soil with values of 3 or less and chroma of 2 and redox concentrations ranging from 10-20%.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: UPL K

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Slope %:

Subregion (LRR or MLRA): LRR R Lat: 41°58'17.03"N Long: 74°12'24.42"W Datum: NAD 83

Soil Map Unit Name: At, Re, CgA NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No	Depth (inches):
Water Table Present?	Yes	No	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UPL K

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	100	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	100	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Malva neglecta*	25	Yes	UPL
2. *Fragaria vesca*	10	Yes	UPL
3. *Toxicodendron radicans*	2	No	FAC
4. *Verbascum thapsus*	2	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	39	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	2	No	FAC
2.			
3.			
4.			
	2	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	4	x 3 =	12
FACU species	100	x 4 =	400
UPL species	37	x 5 =	185
Column Totals:	141 (A)		597 (B)

Prevalence Index = B/A = 4.23

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point UPL K

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 4/2	100					Loamy/Clayey	
2-7	7.5YR 4/3	100					Loamy/Clayey	
7-20	7.5YR 3/4							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet L

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Flat plain Local relief (concave, convex, none): concave Slope %: 0

Subregion (LRR or MLRA): LRR R Lat: 41°58'17.69"N Long: 74°12'24.47"W Datum: NAD 83

Soil Map Unit Name: Atherton silt loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Wetland L

Remarks: (Explain alternative procedures here or in a separate report.)
This wetland is located on the across the entire width of the project corridor and is open to the east, north, and south. It is mapped as NYSDEC wetland AS-20. The wetland L line represents the western boundary of AS-20 and wetland L represents the western boundary, with one upland island between.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Areas of the wetland were ponded with up to 3" of water. The soils were saturated at surface and the water table was evident at 1".

VEGETATION – Use scientific names of plants. Sampling Point: Wet L

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Alnus incana*	50	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	50	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Cornus alba*	5	Yes	FACW
2. *Phragmites australis*	2	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	7	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	57	x 2 =	114
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	57 (A)		114 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Bryophyte ground cover. The invasive phragmites dominated this wetland.

SOIL

Sampling Point Wet L

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR 2.5/2	85	10YR 5/6	15	C	M	Mucky Loam/Clay	Prominent redox concentrations
3-8	10YR 3/2	85	10YR 4/6	15	C	M	Mucky Loam/Clay	Prominent redox concentrations
8-18	10YR 3/2	60	7.5YR 6/8	60	C	M	Mucky Loam/Clay	Prominent redox concentrations
18-24	10YR 4/2	40	10YR 4/6	20	C	M	Mucky Loam/Clay	Prominent redox concentrations
			7.5YR 6/8	20	C	M		Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The hydric soil indicator F6 (redox dark surface) was met within the first 8" of soil with values of 3 or less and chroma of 2 and redox concentrations at 15%.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet M

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave Slope %: 2

Subregion (LRR or MLRA): LRR R Lat: 41°58'10.89"N Long: 74°12'40.99"W Datum: NAD 83

Soil Map Unit Name: Valois very bouldery soils NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Wetland M

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland M was a drainage ditch feature north of the railway with no visible connections to other waters of the U.S., parallel to wetland N to the south.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water was noted at a depth of 2 inches in locations. High water table was present at 1" and saturation at soil surface.

VEGETATION – Use scientific names of plants.

Sampling Point: Wet M

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Microstegium vimineum*	25	Yes	FAC
2. *Glyceria canadensis*	25	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25	x 1 =	25
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	50 (A)		100 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse vegetation was hydrophytic in nature.

SOIL

Sampling Point Wet M

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Mucky Loam/Clay	Org 35%
2-10	10YR 2/1	85	10YR 5/6	15	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Ballast

Depth (inches): 10

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The soils met the indicator F6 (redox dark surface) within the 10" assessed. A value of 2 and chroma of 1 were noted, with redox concentrations at 15%. The soils were restricted by ballast material at 10", prohibiting further investigation.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet M

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Slope %:

Subregion (LRR or MLRA): LRR R Lat: 41°58'10.89"N Long: 74°12'40.99"W Datum: NAD 83

Soil Map Unit Name: VaB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wet M

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Poaceae*	25	Yes	FACU
2. *Verbascum thapsus*	15	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	25	x 4 =	100
UPL species	15	x 5 =	75
Column Totals:	40 (A)		175 (B)

Prevalence Index = B/A = 4.38

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point Wet M

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Ballast

Depth (inches): 2

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 6/29/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet N

Investigator(s): Johanna Duffy, Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave Slope %: 2

Subregion (LRR or MLRA): LRR R Lat: 41°58'10.72"N Long: 74°12'40.71"W Datum: NAD 83

Soil Map Unit Name: Valois very bouldery soils NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Wetland N

Remarks: (Explain alternative procedures here or in a separate report.)
Wetland N was a drainage ditch feature to the south with no visible connections to other waters of the U.S., parallel to wetland M to the north.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Surface water was noted to a depth of 3" in places. High water table was noted at 2" and saturation at surface.

VEGETATION – Use scientific names of plants. Sampling Point: Wet N

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Carex scoparia*	30	Yes	FACW
2. *Carex lurida*	30	Yes	OBL
3. *Juncus effusus*	25	Yes	OBL
4. *Equisetum arvense*	15	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	55	x 1 =	55
FACW species	30	x 2 =	60
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		160 (B)

Prevalence Index = B/A = 1.60

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
A dominance of wetland vegetation was noted.

SOIL

Sampling Point: Wet N

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	90	10YR 5/6	10	C	M	Mucky Loam/Clay	Prominent redox concentrations
3-8	10YR 4/1	90	10YR 6/6	10	C	M	Mucky Loam/Clay	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Ballast

Depth (inches): 8

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Soils met the indicator F6 (redox dark surface) within the 8" assessed. A value of 2 and chroma of 1 were noted, with redox concentrations at 10%. Soils were observed to a depth of 8" due to a restrictive layer of ballast.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 7/7/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet O

Investigator(s): Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave Slope %: 10

Subregion (LRR or MLRA): LRR R Lat: 41°58'20.68"N Long: 74°14'37.94"W Datum: NAD 83

Soil Map Unit Name: Red Hook gravelly silt loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Wetland O

Remarks: (Explain alternative procedures here or in a separate report.)
The wetland was located in a low spot crossing the rail corridor with no observed inlet or outlet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
A high water table was present within 1" of the soil surface with saturation at surface. Additionally, hydrogen sulfide odor was noticed.

VEGETATION – Use scientific names of plants.

Sampling Point: Wet O

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Impatiens capensis*	60	Yes	FACW
2. *Microstegium vimineum*	20	No	FAC
3. *Persicaria sagittata*	15	No	OBL
4. *Scirpus atrovirens*	5	No	OBL
5. *Urtica dioica*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	60	x 2 =	120
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		215 (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
A prevalance of hydrophytic vegetation was located within the wetland.

SOIL

Sampling Point: Wet O

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2						Mucky Loam/Clay	Organic matter 20%
2-4	10YR 3/2	85	10YR 5/8	15	C	M	Loamy/Clayey	Prominent redox concentrations
4-12	10YR 3/3	85	10YR 5/6	10	C	M	Loamy/Clayey	Distinct redox concentrations
			10YR 5/8	5	C	M		Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Ballast

Depth (inches): 12

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The indicator F8 (redox depressions) was also met due to the presence of low spot ponding and prominent redox concentrations of 15% within all soil layers.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 7/7/16

Applicant/Owner: Ulster County State: NY Sampling Point: UPL O

Investigator(s): Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope %:

Subregion (LRR or MLRA): LRR R Lat: 41°58'20.68"N Long: 74°14'37.94"W Datum: NAD 83

Soil Map Unit Name: NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UPL O

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer pensylvanicum*	10	Yes	FACU
2. *Robinia pseudoacacia*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Acer pensylvanicum*	80	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	80	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Fallopia japonica*	20	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	120	x 4 =	480
UPL species	0	x 5 =	0
Column Totals:	120 (A)		480 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point UPL O

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100					Loamy/Clayey	
2-4	10YR 3/2	100					Loamy/Clayey	
4-12	10YR 4/2	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Ballast

Depth (inches): 12

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 7/7/16

Applicant/Owner: Ulster County State: NY Sampling Point: Wet P

Investigator(s): Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Toe of slope Local relief (concave, convex, none): concave Slope %: 20

Subregion (LRR or MLRA): LRR R Lat: 42° 0'2.59"N Long: 74°16'12.76"W Datum: NAD 83

Soil Map Unit Name: Tunkhannock gravelly loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Wetland P

Remarks: (Explain alternative procedures here or in a separate report.)
At the base of a steep slope, this wetland was located north of the Esopus Creek.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 3

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Saturation was present within 3" of the soil surface. Drainage patterns were visible in distinctly bent vegetation.

VEGETATION – Use scientific names of plants.

Sampling Point: Wet P

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus americana*	10	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Microstegium vimineum*	45	Yes	FAC
2. *Impatiens capensis*	45	Yes	FACW
3. *Scirpus atrovirens*	5	No	OBL
4. *Juncus effusus*	2	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	97	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	7	x 1 =	7
FACW species	45	x 2 =	90
FAC species	45	x 3 =	135
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	107 (A)		272 (B)

Prevalence Index = B/A = 2.54

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
A dominance of wetland vegetation was present.

SOIL

Sampling Point Wet P

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2						Loamy/Clayey	
2-4	10YR 3/2	80	10YR 4/6	20	C	M	Loamy/Clayey	Prominent redox concentrations
4-10	10YR 3/2	60	10YR 4/6	40	C	M	Loamy/Clayey	Prominent redox concentrations
10-22	10YR 3/2	60	10YR 5/8	40	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

The hydric soil indicator F6 (redox dark surface) was met within the first 10" of soil. The value was 3 and chroma was 2, with redox concentrations between 20 and 40%.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Ashokan Rail Trail City/County: Olive/Ulster Sampling Date: 7/7/16

Applicant/Owner: Ulster County State: NY Sampling Point: UPL P

Investigator(s): Corinne Steinmuller Section, Township, Range:

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Slope %:

Subregion (LRR or MLRA): LRR R Lat: 42° 0'2.59"N Long: 74°16'12.76"W Datum: NAD 83

Soil Map Unit Name: TkB NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes	No X	**within a Wetland?** **Yes** **No** X
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- Marl Deposits (B15)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No X	Depth (inches):
Water Table Present?	Yes	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes	No X	Depth (inches):

Wetland Hydrology Present? **Yes** **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: UPL P

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus americana*	25	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Microstegium vimineum*	50	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	75 (A)		250 (B)

Prevalence Index = B/A = 3.33

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point UPL P

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2						Loamy/Clayey	
2-4	10YR 3/3						Loamy/Clayey	
4-18	10YR 4/3						Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Appendix B

Site Photographs

Photo 1. Wetland A looking east.

Photo 2. Wetland B looking south.

Photo 3. Wetland C looking south.

Photo 4. Wetland D looking east.

Photo 5. Wetland E looking south.

Photo 6. Wetland F looking east.

Photo 7. Wetland G looking south.

Photo 8. Wetland J looking north.

Photo 9. Wetland K on either side of rail, looking east.

Photo 10. Wetland K looking north.

Photo 11. Wetland M looking east.

Photo 12. West of Wetlands M and N.

Photo 13. Wetland N drainage continuing northwest.

Photo 14. Wetland O looking east.

Photo 15. Wetland P looking north.

Photo 16. Typical culvert under rail.

Photo 17. Typical stream crossing south of railway, from culvert.

Photo 18. Flow of stream through large culvert.

Photo 19. Typical stream through corridor.

Photo 20. Butternut creek, looking south from failed culvert.

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

October 3, 2016

Ms. Corinne Steinmuller
Environmental Scientist II
Barton and Loguidice
10 Airline Drive
Albany, NY 12203

Re: DEC
Ashokan Rail Trail
16PR06122

Dear Ms. Steinmuller:

Thank you for requesting the comments of the Division for Historic Preservation of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the submitted materials in accordance with the New York State Historic Preservation Act of 1980 (section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the Division for Historic Preservation and relate only to Historic/Cultural resources. They do not include potential impacts that must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6NYCRR Part 617).

We note that the proposed project is located partially within the National Register eligible Ulster and Delaware Railroad Corridor. The historic section of the railway, extending from Shokan to Phoenicia, is listed under National Register Criterion A for its association with historical development of the towns of Shandaken and Olive from the period 1897-1942. We understand that the proposed project will include construction of a pedestrian and bicycle pathway along the existing rail bed extending approximately 11.5 miles from West Hurley to Olive. The proposed rail trail will affect approximately six miles of the historic railway, and will include removal of the rail and ties, repairs to existing culverts, and construction of multiple trailheads within the twenty foot wide easement.

We are pleased that this adaptive reuse project will retain the rail corridor along with its historic feeling, association, and use as a transportation route. Based on this review, it is the opinion of the SHPO that the proposed project will have No Adverse Impact upon the historic Ulster and Delaware Railroad Corridor provided the following conditions are incorporated into the project:

1. A Preservation Plan is developed for the historic rail corridor. At minimum the Plan will identify all historic structures and engineering features that will be impacted by the project.
2. Historic interpretation of the railway will be integrated into development of the rail trail. Interpretive materials should include interpretive signage along the rail trail. A qualified professional should be retained to develop the preservation and interpretive plans.

3. Materials related to documentation and interpretation of historic features should be submitted to our office for review in the preliminary and pre-final stages.

Any additional measures that would further ensure the preservation and understanding of the historic railway are encouraged. Towards this goal, we suggest the following:

- Small sections of track (roughly 50') may be retained at the beginning and end of the proposed rail trail. One or both ends of this could display the existing heavy gauge rails along with a sample of the previous iteration of light rail as part of an interpretive exhibit.
- Additional historic features including buildings, structures, and engineering features that are identified along the eligible route will be protected and interpreted in accordance with the Preservation Plan.

Consultation with our office should continue as the preservation and interpretation measures suggested above are developed. Plans, specifications, and other documentation requested in this letter should be provided via our Cultural Resource Information System (CRIS) at www.nysparks.com/shpo/online-tools/. Once on the CRIS site, you can log in as a guest and choose "submit" at the very top menu. Next choose "submit new information for an existing project". You will need this project number and your e-mail address.

If you have any questions, I can be reached at (518) 268-2164.

Sincerely,

Weston Davey
Historic Site Restoration Coordinator
weston.davey@parks.ny.gov

via e-mail only

CC: Scott Ballard (DEC)
Charles Laing (NYCDEP)
Christopher White (Ulster County)

Appendix I

Web Soil Survey Map and
Soil Data Mart Soil Descriptions

Legend

Project Corridor

Soil Series Symbol

- ARF - Arnot-Oquaga-Rock outcrop
- AcB - Arnot Channery silt loam
- LCD - Lackawanna and Swartswood soils, moderately steep
- LaC - Lackawanna flaggy silt loam
- ML - Made land
- MTB - Morris-Tuller complex
- Mn - Menlo silt loam
- ORC - Oquaga-Arnot-Rock outcrop, sloping
- ORD - Oquaga-Arnot-Rock complex, moderately steep
- OgB - Oquaga channery silt loam, 3-8% slopes
- OlC - Oquaga channery sil loam, 8-15% slopes
- QU - Quarry
- SEB - Scriba and Morris soils
- W - Water
- WLB - Wellsboro and Wurtsboro soils

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 1,500 feet

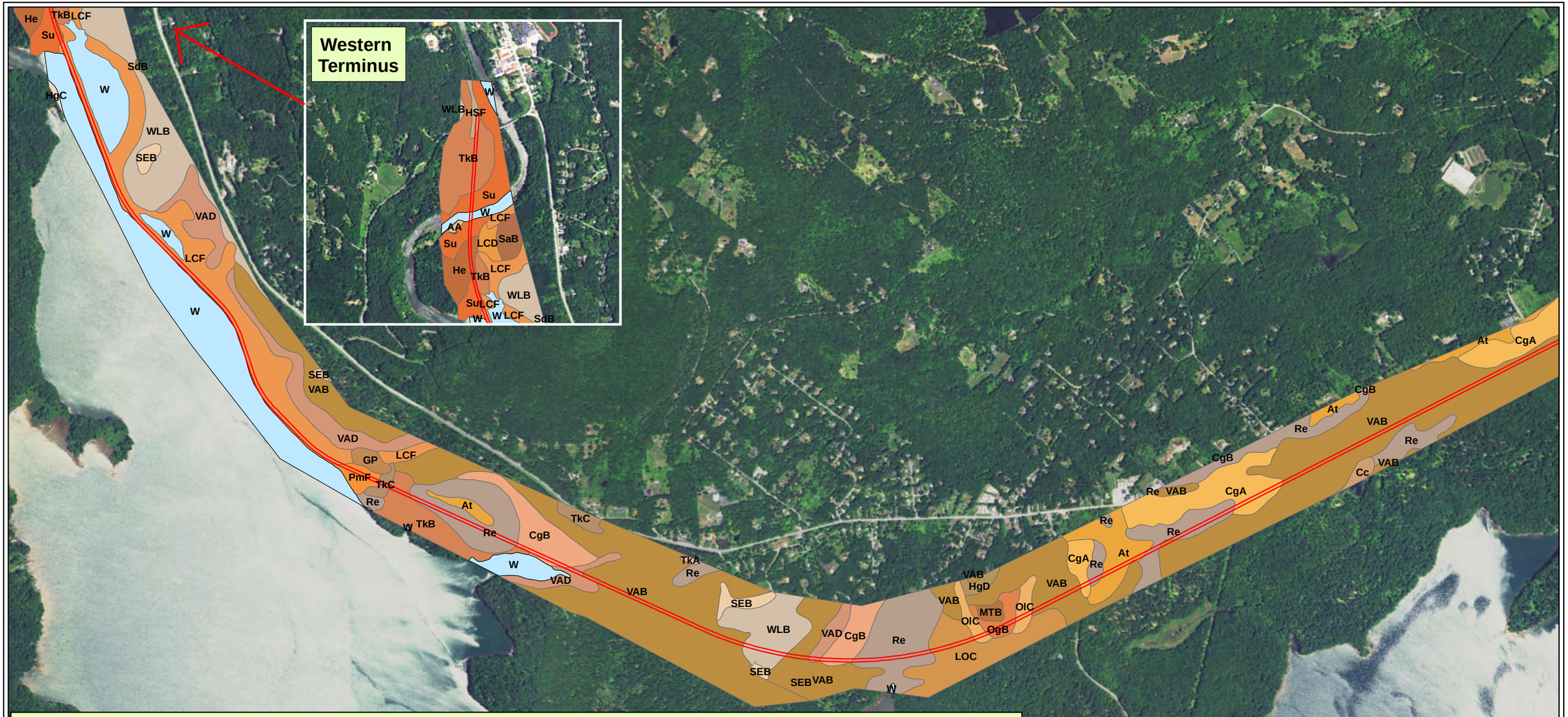
Ulster County

Ashokan Rail Trail - NRCS Soils

Ulster County — March 2017 — New York

Figure 3

Project No. 369.007



Legend

Project Corridor

Soil Series Symbol

- At - Atherton silt loam
- Cc - Canandaigua silt loam
- CgA - Castile gravelly silt loam
- CgB - Castile gravelly silt loam, 3-8% slopes
- GP - Gravel pit
- He - Haven loam
- HgC - Hoosic gravelly loam, rolling
- HgD - Hoosic gravelly loam, 15-25% slopes
- LCF - Lackawanna and Swartswood soils, very steep
- LOC - Lordstown-Arnot-Rock outcrop complex
- MTB - Morris-Tuller complex
- OgB - Oquaga channery silt loam, 3-8% slopes
- OIC - Oquaga channery sil loam, 8-15% slopes
- PmF - Plainfield-Riverhead complex
- Re - Red Hook gravelly silt loam
- SEB - Scriba and Morris soils
- SdB - Scriba and Morris soils, 0-8% slopes
- Su - Suncook loamy fine sand
- TkA - Tunkhannock gravelly loam, 0-3% slopes
- TkB - Tunkhannock gravelly loam, 3-8% slopes
- TkC - Tunkhannock gravelly loam, rolling
- VAB - Valois very bouldery soils
- VAD - Valois very bouldery soils, moderately steep
- W - Water
- WLB - Wellsboro and Wurtsboro soils

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

N W E S

1 inch = 1,500 feet

Ulster County

Ashokan Rail Trail - NRCS Soils

Ulster County March 2017 New York

Figure 3A

Project No. 369.007

Appendix J

MS4 SWPPP Acceptance Form

Appendix J

MS4 SWPPP Acceptance Form

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information
1. Owner/Operator Name:
2. Contact Person:
3. Street Address:
4. City/State/Zip:
II. Project Site Information
5. Project/Site Name:
6. Street Address:
7. City/State/Zip:
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information
8. SWPPP Reviewed by:
9. Title/Position:
10. Date Final SWPPP Reviewed and Accepted:
IV. Regulated MS4 Information
11. Name of MS4:
12. MS4 SPDES Permit Identification Number: NYR20A _____
13. Contact Person:
14. Street Address:
15. City/State/Zip:
16. Telephone Number:

(NYS DEC - MS4 SWPPP Acceptance Form - January 2010)

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s).
Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

Appendix K

Technical Field Guidance for Spill Reporting and Initial Notification

TECHNICAL

FIELD GUIDANCE

SPILL REPORTING AND INITIAL NOTIFICATION REQUIREMENTS

NOTES

Spill Reporting and Initial Notification Requirements

GUIDANCE SUMMARY AT-A-GLANCE

- Reporting spills is a crucial first step in the response process.
- You should understand the spill reporting requirements to be able to inform the spillers of their responsibilities.
- Several different state, local, and federal laws and regulations require spillers to report petroleum and hazardous materials spills.
- The state and federal reporting requirements are summarized in Exhibit 1.1-1.
- Petroleum spills must be reported to DEC unless they meet all of the following criteria:
  - The spill is known to be less than 5 gallons; and
  - The spill is contained and under the control of the spiller; and
  - The spill has not and will not reach the State's water or any land; and
  - The spill is cleaned up within 2 hours of discovery.

  All reportable petroleum spills and most hazardous materials spills must be reported to DEC hotline (1-800-457-7362) within New York State; and (1-518 457-7362) from outside New York State. For spills not deemed reportable, it is strongly recommended that the facts concerning the incident be documented by the spiller and a record maintained for one year.
- Inform the spiller to report the spill to other federal or local authorities, if required.
- Report yourself those spills for which you are unable to locate the responsible spiller.
- Make note of other agencies' emergency response telephone numbers in case you require their on-scene assistance, or if the response is their responsibility and not BSPR's.

NOTES

1.1.1 Notification Requirements for Oil Spills and Hazardous Material Spills

Spillers are required under state law and under certain local and federal laws to report spills. These various requirements, summarized in Exhibit 1.1-1, often overlap; that is, a particular spill might be required to be reported under several laws or regulations and to several authorities. Under state law, all petroleum and most hazardous material spills must be reported to DEC Hotline (1-800-457-7362), within New York State, and to 1-518-457-7362 from outside New York State. Prompt reporting by spillers allows for a quick response, which may reduce the likelihood of any adverse impact to human health and the environment. Yo will often have to inform spillers of there responsibilities.

Although the spiller is responsible for reporting spills, other persons with knowledge of a spill, leak, or discharge is required to report the incident (see Appendices A and B). You will often have to inform spillers of their responsibilities. You may also have to report spills yourself in situations where the spiller is not known or cannot be located. However, it is the legal responsibility of the spiller to report spills to both state and other authorities.

BSPR personnel also are responsible for notifying other response agencies when the expertise or assistance of other agencies is needed. For example, the local fire department should be notified of spills that pose a potential explosion and/or fire hazard. If such a hazard is detected and the fire department has not been notified, call for their assistance immediately. Fire departments are trained and equipped to respond to these situations; you should not proceed with your response until the fire/safety hazard is eliminated. For more information on interagency coordination in emergency situations see Part 1, Section 3, Emergency Response.

Another important responsibility is notifying health department officials when a drinking water supply is found to be contaminated as a result of a spill. It will be the health department's responsibility to advise you on the health risk associated with any contamination.

Exhibits 1.1-1 and 1.1-2 list the state and federal requirements to report petroleum and hazardous substance spills, respectively. The charts describe the type of material covered, the applicable act or regulation, the agency that must be notified, what must be reported, and the person responsible for reporting. New York state also has a emergency notification network for spill situations (e.g., major chemical releases) that escalate beyond the capabilities of local and regional response agencies/authorities to provide adequate response. The New York State Emergency Management Office (SEMO) coordinates emergency response activities among local, state, and federal government organizations in these cases.

Exhibit 1.1-1

State and Federal Reporting Requirements for Petroleum Spills, Leaks, and Discharges

Materials Covered	Act or Regulation	Agency to Notify	What Must Be Reported and When	Who Must Report
Petroleum from any source	Navigation Law Article 12; 17 NYCRR 32.3 and 32.4	DEC Hotline 1-800-457-7362	The notification of a discharge must be immediate, but in no case later than two hours after discharge. 1. Name of person making report and his relationship to any person which might be responsible for causing the discharge. 2. Time and date of discharge. 3. Probable source of discharge. 4. The location of the discharge, both geographic and with respect to bodies of water. 5. Type of petroleum discharges. 6. Possible health or fire hazards resulting from the discharge. 7. Amount of petroleum discharged. 8. All actions that are being taken to clean up and remove the discharge. 9. The personnel presently on the scene. 10. Other government agencies that have been or will be notified.	Any person causing discharge of petroleum. Owner or person in actual or constructive control must notify DEC unless that person has adequate assurance that such notice has already been given.
All aboveground petroleum and underground storage facilities with a combined storage capacity of over 1100 gallons.	ECL §17-1007; 6 NYCRR §613.8	DEC Hotline 1-800-457-7362	1. Report spill incident within two hours of discovery. 2. Also when results of any inventory, record, test, or inspection shows a facility is leaking, that fact must be reported within two hours of discovery.	Any person with knowledge of a spill, leak, or discharge.
Petroleum contaminated with PCB.	Chemical Bulk Storage Act 6 NYCRR Parts 595, 596, 597	DEC Hotline 1-800-457-7362	Releases of a reportable quantity of PCB oil.	Owner or person in actual or constructive possession or control of the substance, or a person in contractual relationship, who inspects, tests, or repairs for owner.

Exhibit 1.1-1

State and Federal Reporting Requirements for Petroleum Spills, Leaks, and Discharges (continued)

Materials Covered	Act or Regulation	Agency to Notify	What Must Be Reported and When	Who Must Report
Any liquid (petroleum included) that if released would be likely to pollute lands or waters of the state.	ECL §17-1743	DEC Hotline 1-800-457-7362	Immediate notification that a spill, release, or discharge of any amount has occurred. Owner or person in actual or constructive possession or control of more than 1,100 gallons of the liquid.	
Petroleum Discharge in violation of §311(b)(3) of the Clean Water Act	40 CFR §110.10 (Clean Water Act)	1. National Response Center (NRC) 1-800-424-8802. 2. If not possible to notify NRC, notify Coast Guard or predesignated on-scene coordinator. 3. If not possible to notify either 1 or 2, reports may be made immediately to nearest Coast Guard units, provided NRC notified as soon as possible.	Immediate notification as soon as there is knowledge of an oil discharge that violates water quality standards or causes sheen on navigable waters. Procedures for notice are set forth in 33 CFR Part 153, Subpart B, and in the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300, Subpart E.	Person in charge of vessel or on-shore or off-shore facility.
Petroleum, petroleum by-products or other dangerous liquid commodities that may create a hazardous or toxic condition spilled into navigable waters.	33 CFR 126.29 (Ports and Waters Safety Act)	Captain of the Port or District Commander	As soon as discharge occurs, owner or master of vessel must immediately report that a discharge has occurred.	Owner or master of vessel or owner or operator of the facility at which the discharge occurred.

Exhibit 1.1-1

State and Federal Reporting Requirements for Petroleum Spills, Leaks, and Discharges (continued)

Materials Covered	Act or Regulation	Agency to Notify	What Must Be Reported and When	Who Must Report
Petroleum or hazardous substance from a vessel, on-shore or off-shore facility in violation of §311(b)(3) of the Clean Water Act.	33 CFR 153.203 (Clean Water Act)	1. NRC U.S. Coast Guard, 2100 Second Street, SW, Washington, DC 20593; 1-800-424-8802. 2. Where direct reporting not practicable, reports may be made to the Coast Guard (District Offices), the 3rd and 9th district of the EPA regional office at 26 Federal Plaza, NY, NY 10278; 1-201-548-8730. 3. Where none of the above is possible, may contact nearest Coast Guard unit, provided NRC notified as soon as possible.	Any discharger shall immediately notify the NRC of such discharge.	Person in charge of vessel or facility.

Exhibit 1.1-2

State and Federal Reporting Requirements for Hazardous Substance Spills, Leaks, and Discharges

Materials Covered	Act or Regulation	Agency to Notify	What Must Be Reported and When	Who Must Report
Any hazardous substance pursuant to Article 37. Does not include petroleum.	Chemical Bulk Storage Act 6 NYCRR Parts 595, 596, 597; ECL 40-0113(d)	DEC Hotline 1-800-457-7362	Releases of a reportable quantity of a hazardous substance.	Owner or person in actual or constructive possession or control of the substance, or a person in contractual relationship, who inspects, tests, or repairs for owner.
Hazardous materials or substances as defined in 49 CFR §171.8 that are transported. (See federal reporting requirements.)	Transportation Law 14(f); 17 NYCRR 507.4(b)	Local fire department or police department or local municipality	Immediate notification must be given of incident in which any of the following occurs as a direct result of a spill of hazardous materials: 1. Person is killed. 2. Person receives injuries requiring hospitalization. 3. Estimated damage to carrier or other property exceeds $50,000. 4. Fire, breakage, spillage, or suspected contamination due to radioactive materials. 5. Fire, breakage, spillage, or suspected contamination involving etiologic agents. 6. Situation is such that, in the judgment of the carrier, a continuing danger to life or property exists at the scene of the incident.	All persons and carriers engaged in the transportation of hazardous materials.

Exhibit 1.1-2
State and Federal Reporting Requirements for Hazardous Substance Spills, Leaks, and Discharges
(continued)

Materials Covered	Act or Regulation	Agency to Notify	What Must Be Reported and When	Who Must Report
Hazardous materials (wastes included) that are transported, whose carrier is involved in an accident.	Department of Transportation Regulations 49 CFR 171.15; 17 NYCRR Part 924; 17 NYCRR Part 507	1. U.S. Department of Transportation 1-800-424-8802 2. DEC Hotline 1-800-457-7362 3. Rail Carrier <u>On-Duty</u> 518-457-1046 <u>Off-Duty</u> 518-457-6164 4. Notify local police or fire department.	Notice should be given by telephone at the earliest practicable moment and should include: 1. Name of reporter. 2. Name and address of carrier represented by reporter. 3. Phone number where reporter can be contacted. 4. Date, time, and location of incident. 5. The extent of injuries, if any. 6. Classification, name and quantity of hazardous materials involved, if available. 7. Type of incident and nature of hazardous material involved and whether a continuing danger to life exists at scene. 8. Each carrier making this report must also make the report required by §171.16.	Each carrier that transports hazardous materials involves in an accident that causes any of the following as a direct result: 1. A person is killed 2. A person receives injuries requiring hospitalization 3. Estimated damage to carrier or other property exceeds $50,000 4. Fire, breakage, spillage, suspected or otherwise involving radioactive material. 5. Fire, breakage, spillage, suspected contamination involving etiologic agents. 6. Situation is such that carrier thinks it should be reported in accordance with paragraph b.

Exhibit 1.1-2
State and Federal Reporting Requirements for Hazardous Substance Spills, Leaks, and Discharges
(continued)

Materials Covered	Act or Regulation	Agency to Notify	What Must Be Reported and When	Who Must Report
Reportable quantity of a hazardous substance into navigable waters or adjoining shorelines. Substances are listed in 40 CFR 302.4.	Department of Transportation Regulations 49 CFR §171.16 as authorized by the Hazardous Materials Transportation Act	U.S. Coast Guard National Response Center (NRC), 1-800-424-8802 or 1-202-267-2675	As soon as person in charge becomes aware of a spill incident, he must notify NRC and provide the following information: 1. The information required by 49 CFR §171.15 (see above). 2. Name of shipper of hazardous substance. 3. Quantity of hazardous substance discharged, if known. 4. If person in charge is incapacitated, carrier shall make the notification. 5. Estimate of quantity of hazardous substance removed from the scene and the manner of disposition of any unremoved hazardous substance shall be entered in Part (H) of the report required by 49 CFR 171.16 (see above).	Person in charge of aircraft, vessel, transport vehicle, or facility. Must inform NRC directly, or indirectly through carrier.
Reportable quantity of a hazardous substance from vessel, on-shore or off-shore facility. Substances and requirements specified in 40 CFR §117.3.	40 CFR §117.21 as authorized under the FWPCA	NRC 1-800-424-8802. If not practicable report may be made to the Coast Guard (3rd or 9th Districts) District Offices or to EPA, designated On-Scene Coordinator, Region II, 26 Federal Plaza, NY, NY 10278; 1-201-548-8730	Immediate notification is required.	Person in charge of vessel, or on-shore or off-shore facility

Exhibit 1.1-2
State and Federal Reporting Requirements for Hazardous Substance Spills, Leaks, and Discharges (continued)

Materials Covered	Act or Regulation	Agency to Notify	What Must Be Reported and When	Who Must Report
Facilities where a hazardous chemical is produced, used, or stored, and there is a reportable quantity of any extremely hazardous substance as set out in Appendix A to 40 CFR 355 or a CERCLA hazardous substance as specified in 40 CFR 302.4. (This section does not apply to a release that does not go beyond the facility, that emanates from a facility that is federally permitted, is continuous as defined under §103(f) of CERCLA or to any release exempt from CERCLA §103(a) reporting under §101(22) of CERCLA.)	40 CFR 355.40 (SARA) Releases of CERCLA Hazardous Substances are subject to release reporting requirements of CERCLA §103, codified at 40 CFR Part 302, in addition to being subject to the requirements of this Part.	Community emergency coordinator for the local emergency planning committee of any area likely to be affected and the State Emergency Response Commission of any state likely to be affected by the release. If there is no local emergency planning commission notification shall be made to relevant local emergency response personnel.	Immediately notify agencies at left and provide the following information when available: 1. Chemical name or identity of any substance involved in the release. 2. Indication of whether the substance is an extremely hazardous substance. 3. An estimate of the quantity released. 4. Time and duration of release. 5. Medium or media into which the release occurred. 6. Known health risks associated with emergency and where appropriate advice regarding medical attention for those exposed. 7. Proper precautions/actions that should be taken, including evacuation. 8. Names and telephone numbers of person to be contacted for further information. As soon as practicable after release, followup notification by providing the following information: 1. Actions taken to respond to and contain the release. 2. Health risks. 3. Advice on medical attention for exposed individuals.	Owner or operator of facility

Exhibit 1.1-2
State and Federal Reporting Requirements for Hazardous Substance Spills, Leaks, and Discharges
(continued)

Materials Covered	Act or Regulation	Agency to Notify	What Must Be Reported and When	Who Must Report
Hazardous liquids transported in pipelines, a release of which results in any circumstances as set out in 195.50(a) through (f). Also any incident that results in circumstances listed in 195.52(g).	49 CFR 195.50, 195.52 and 195.54 (Hazardous Liquid Pipeline Safety Act).	NRC, 1-800-424-8802	Notice must be given at the earliest practicable moment and the following information provided: 1. Name and address of the operator. 2. Name and telephone number of the reporter. 3. Location of the failure. 4. The time of the failure. 5. The fatalities and personal injuries, if any. 6. All other significant facts known by the operator that are relevant to the cause of the failure or extent of the damages.	Operator of system.
Hazardous wastes in transport	40 CFR §263.30(a) (RCRA)	1. Local authorities 2. If required by 49 CFR 171.15, notify the NRC at 1-800-424-8802 or 1-202-426-2675 3. Report in writing to Director of Hazardous Materials Regulations, Materials Transportation Bureau, Department of Transportation, Washington, DC 20590	Notification must be immediate. For discharge of hazardous waste by air, rail, highway, or water, the transporter must: 1. Give notice as in 49 CFR 161.15 (if applicable). 2. Report in writing as in 49 CFR 171.16. Wastes transporter (bulk shipment) must give same notice as required by 33 CFR 153.20.	Transporter by air, rail, highway, or water.

Exhibit 1.1-2
State and Federal Reporting Requirements for Hazardous Substance Spills, Leaks, and Discharges
(continued)

Materials Covered	Act or Regulation	Agency to Notify	What Must Be Reported and When	Who Must Report
Vinyl Chloride from any manual vent valve, or polyvinyl chloride plants	Clean Air Act 40 CFR 61.64	Administrator of EPA	Within 10 days of any discharge from any manual vent valve, report must be made, in writing, and the following information provided: 1. Source, nature and cause of the discharge 2. Date and time of the discharge 3. Approximate total vinyl chloride loss during discharge 4. Method used for determining loss 5. Action taken to prevent the discharge 6. Measures adopted to prevent future discharges.	Owner or operator of plant.
Radioactive Materials	6 NYCRR §380.7	Commissioner of DEC	1. Notify immediately by telephone when concentration, averaged over a 24-hour period, exceeds or threatens to exceed 5000 times the limits set forth in Schedule 2 of 380.9 (in uncontrolled areas). 2. Notify within 24 hours by telephone when concentration, averaged over 24- hour period, exceeds or threatens to exceed 500 times the limits set forth in Schedule 2 above (in uncontrolled areas). 3. Report within 30 days the concentration and quantity of radioactive material involved, the cause of the discharge, and corrective steps taken or planned to ensure no recurrence of the discharge.	Operator of the radiation installation.

Exhibit 1.1-2
State and Federal Reporting Requirements for Hazardous Substance Spills, Leaks, and Discharges
(continued)

Materials Covered	Act or Regulation	Agency to Notify	What Must Be Reported and When	Who Must Report
Low Level radioactive wastes in transport. Any suspected or actual uncontrolled releases.	6 NYCRR 381.16 ECL §27-0305 Waste Transporter Permits	DEC and Department of Health	Immediate notification.	Transporter

Appendix L

Notice of Termination

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

5. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. ☐ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP.
***Date final stabilization completed** (month/year): _____

9b. ☐ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. ☐ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? ☐ yes ☐ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? ☐ yes ☐ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? ☐ yes ☐ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

☐ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

☐ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

☐ For post-construction stormwater management practices that are privately owned, the deed of record has been modified to include a deed covenant that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

☐ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, college, university), or government agency or authority, policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? ☐ yes ☐ no
(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:
(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:

Title/Position:

Signature:	Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2010)

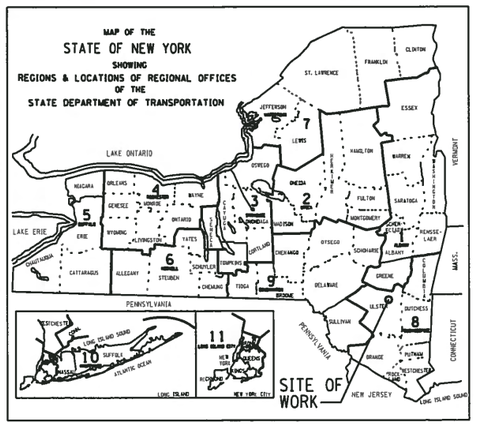
Appendix M

Drainage and Utility Plans

(Included in Phase 2)

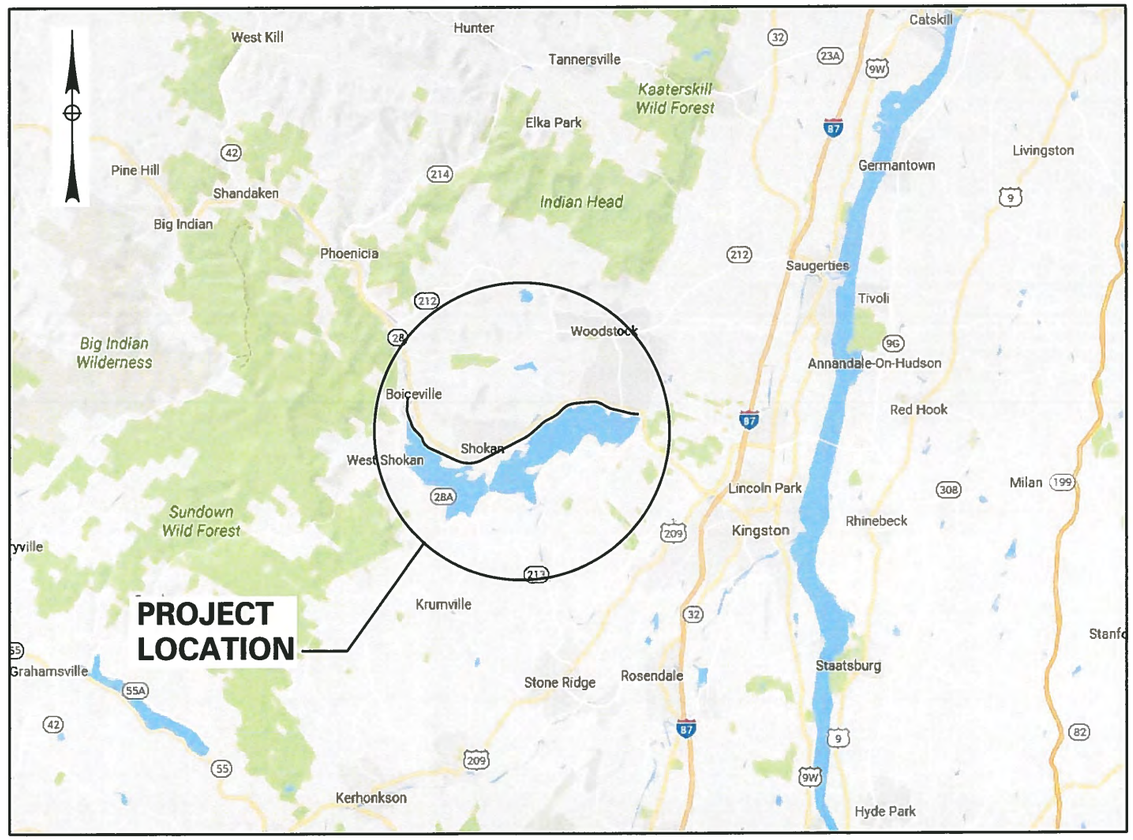
Appendix N

Contract Specifications



ASHOKAN RAIL TRAIL
ULSTER COUNTY

TREE REMOVAL CONTRACT DRAWINGS
SEPTEMBER 15, 2017



PROJECT LOCATION

Barton & Loguidice, D.P.C.

PREPARED AND RECOMMENDED BY

STATE OF NEW YORK · THOMAS C. BAIRD · LICENSED PROFESSIONAL ENGINEER · EXCELSIOR · 074590

9/15/2017

THOMAS C. BAIRD, P.E. DATE

NEW YORK STATE PROFESSIONAL ENGINEERS LICENSE NO. 074590

CONTRACTOR'S NAME _____

AWARD DATE _____

COMPLETION DATE _____

FINAL ACCEPTANCE DATE _____

ENGINEER IN CHARGE _____

FINAL COST TOTAL _____

FISCAL SHARE COST(S)

IN CHARGE OF _____ DESIGNED BY _____ CHECKED BY _____ ESTIMATED BY _____

CHECKED BY _____ DRAFTED BY _____ CHECKED BY _____

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DATE = 9/18/2017
TIME = 10:55:33 AM

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 3,333 feet

Ulster County
Ashokan Rail Trail
Tree Removals Plan Sheet Key
Ulster County 9/14/2017 New York

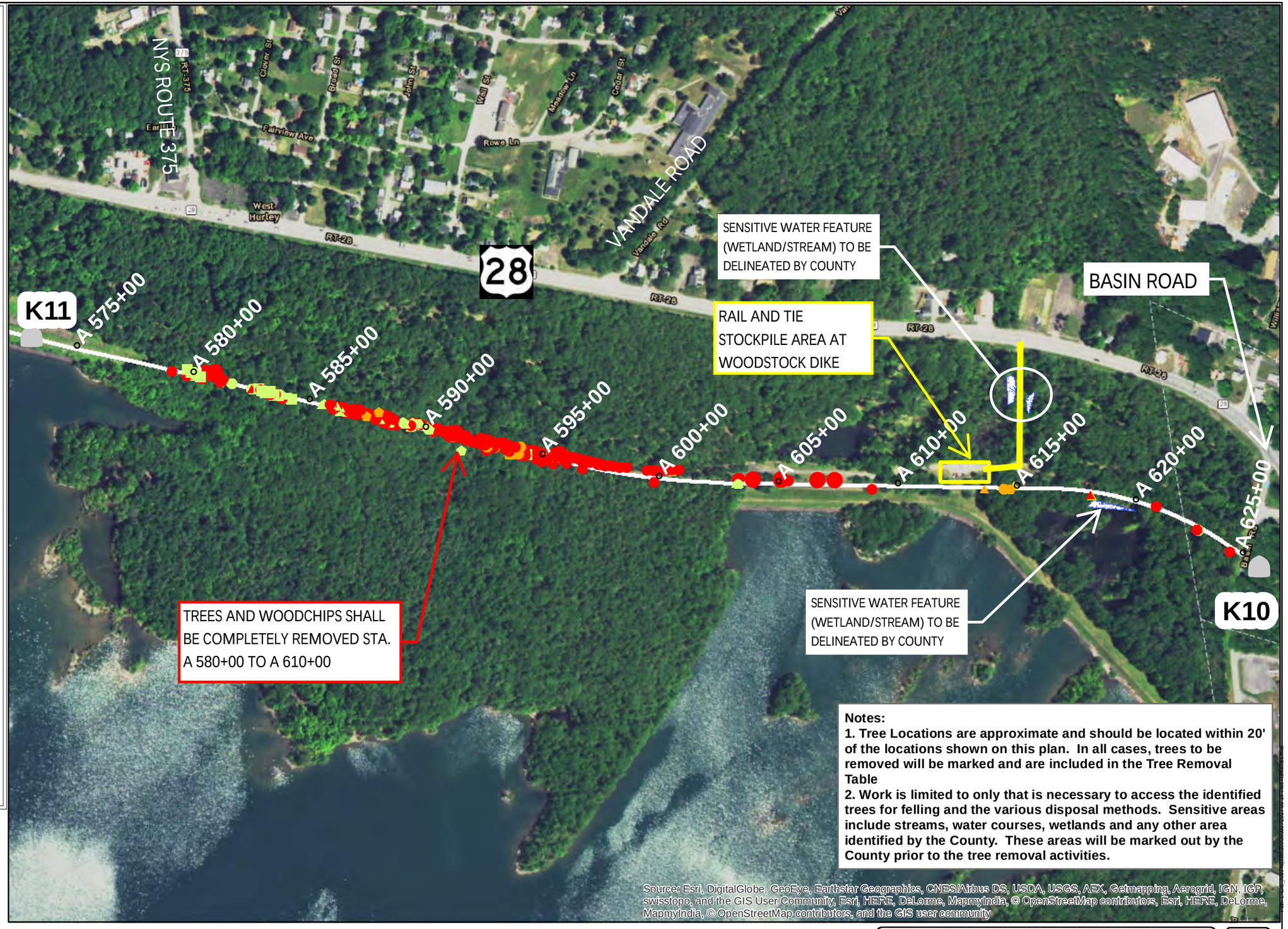
Figure 1
Project RFB 17-151C

Legend

Trees K10_K11

Status, DBH_range, Species (Segment Quantity)

- alive, 4-14, Birch (20)
- alive, 4-14, Maple (20)
- alive, 4-14, Oak (2)
- alive, 4-14, Other (3)
- alive, 4-14, Pine (9)
- dead standing, 15-24, Ash (11)
- dead standing, 4-14, Ash (157)
- dead standing, 4-14, Birch (1)
- dead standing, 4-14, Other (3)
- dead standing, 4-14, Pine (3)
- down, 4-14, Ash (7)
- down, 4-14, Birch (3)
- down, 4-14, Maple (1)
- down, 4-14, Oak (1)
- down, 4-14, Other (3)
- down, 4-14, Pine (1)
- stressed, 4-14, Oak (1)
- stressed, 4-14, Pine (2)
- Milepost
- Access and Staging
- Streams
- Wetlands



Notes:
1. Tree Locations are approximate and should be located within 20' of the locations shown on this plan. In all cases, trees to be removed will be marked and are included in the Tree Removal Table
2. Work is limited to only that is necessary to access the identified trees for felling and the various disposal methods. Sensitive areas include streams, water courses, wetlands and any other area identified by the County. These areas will be marked out by the County prior to the tree removal activities.

Barton & Loguidice, D.P.C.
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1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Tree Removals K10-K11
Ulster County 9/14/2017 New York

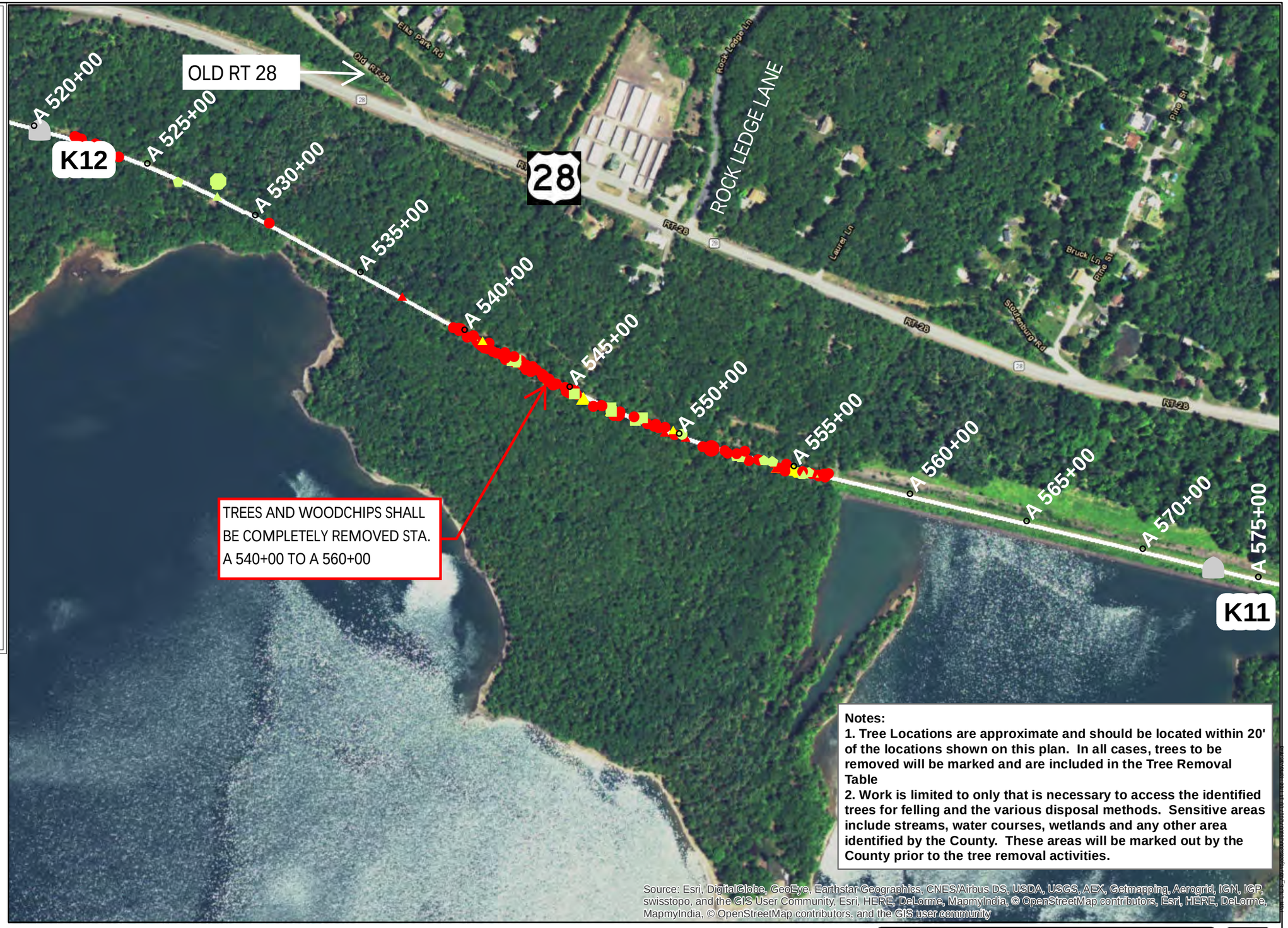
Figure 2
Project RFB 17-151C

Legend

Trees K11_K12

Status, DBH_range, Species (Segment Quantity)

- alive, 15-24, Other (1)
- alive, 4-14, Ash (1)
- alive, 4-14, Birch (15)
- alive, 4-14, Maple (11)
- alive, 4-14, Pine (5)
- dead standing, 15-24, Ash (1)
- dead standing, 4-14, Ash (105)
- dead standing, 4-14, Pine (5)
- down, 4-14, Pine (1)
- stressed, 15-24, Pine (1)
- stressed, 4-14, Birch (1)
- stressed, 4-14, Other (2)
- stressed, 4-14, Pine (9)
- Milepost
- Access and Staging
- Streams
- Wetlands



Notes:

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2. Work is limited to only that is necessary to access the identified trees for felling and the various disposal methods. Sensitive areas include streams, water courses, wetlands and any other area identified by the County. These areas will be marked out by the County prior to the tree removal activities.

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N W E S

1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Tree Removals K11-K12
Ulster County 9/14/2017 New York

Figure 3

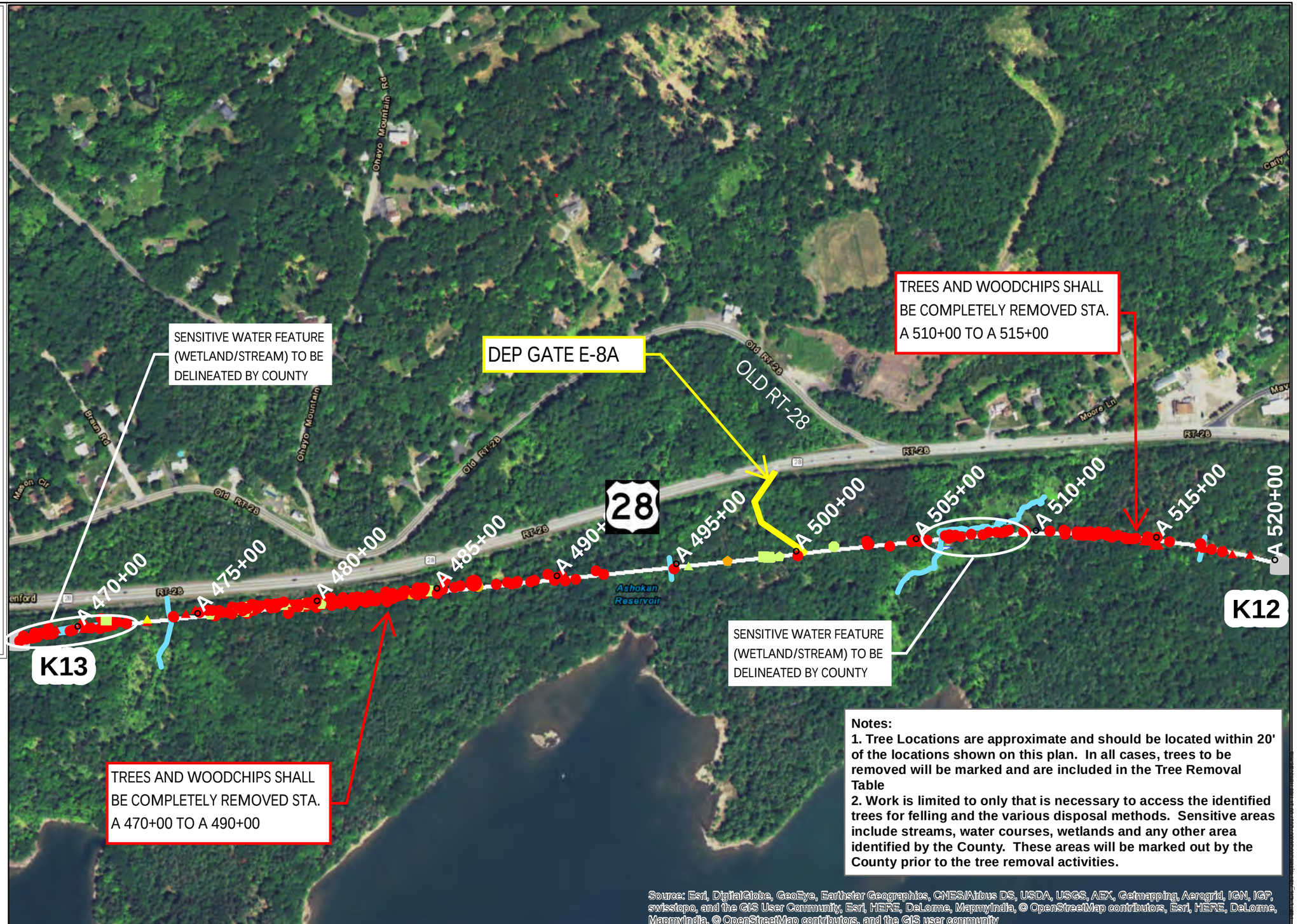
Project RFB 17-151C

Legend

Trees K12_K13

Status, DBH_range, Species (Segment Quantity)

- alive, 4-14, Birch (6)
- alive, 4-14, Maple (9)
- alive, 4-14, Other (1)
- alive, 4-14, Pine (2)
- dead standing, 15-24, Ash (1)
- dead standing, 15-24, Pine (1)
- dead standing, 4-14, Ash (275)
- dead standing, 4-14, Birch (1)
- dead standing, 4-14, Pine (25)
- down, 4-14, Ash (2)
- down, 4-14, Birch (1)
- stressed, 4-14, Ash (1)
- stressed, 4-14, Pine (3)
- Milepost
- Access and Staging
- Streams
- Wetlands



Notes:
1. Tree Locations are approximate and should be located within 20' of the locations shown on this plan. In all cases, trees to be removed will be marked and are included in the Tree Removal Table
2. Work is limited to only that is necessary to access the identified trees for felling and the various disposal methods. Sensitive areas include streams, water courses, wetlands and any other area identified by the County. These areas will be marked out by the County prior to the tree removal activities.

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N W E S

1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Tree Removals K12-K13
Ulster County 9/14/2017 New York

Figure 4
Project RFB 17-151C

Legend

Trees K13_K14

Status, DBH_range, Species (Segment Quantity)

- alive, 15-24, Maple (1)
- alive, 15-24, Other (1)
- alive, 4-14, Ash (1)
- alive, 4-14, Birch (15)
- alive, 4-14, Maple (23)
- alive, 4-14, Oak (2)
- alive, 4-14, Other (3)
- alive, 4-14, Pine (12)
- dead standing, 15-24, Ash (4)
- dead standing, 4-14, Ash (207)
- dead standing, 4-14, Oak (1)
- dead standing, 4-14, Pine (17)
- down, 4-14, Ash (3)
- down, 4-14, Maple (1)
- stressed, 4-14, Ash (2)
- stressed, 4-14, Birch (2)
- stressed, 4-14, Other (4)
- stressed, 4-14, Pine (5)
- Milepost
- Access and Staging
- Streams
- Wetlands

TREES AND WOODCHIPS SHALL BE COMPLETELY REMOVED STA. A 462+00 TO A 470+00

DEP GATE E-8B

K13

SENSITIVE WATER FEATURE (WETLAND/STREAM) TO BE DELINEATED BY COUNTY

BOULEVARD ROAD

TREES AND WOODCHIPS SHALL BE COMPLETELY REMOVED STA. A 415+00 TO A 450+00

SENSITIVE WATER FEATURE (WETLAND/STREAM) TO BE DELINEATED BY COUNTY

K14

Notes:

1. Tree Locations are approximate and should be located within 20' of the locations shown on this plan. In all cases, trees to be removed will be marked and are included in the Tree Removal Table

2. Work is limited to only that is necessary to access the identified trees for felling and the various disposal methods. Sensitive areas include streams, water courses, wetlands and any other area identified by the County. These areas will be marked out by the County prior to the tree removal activities.

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 359 feet

Ulster County
Ashokan Rail Trail
Tree Removals K13-K14
Ulster County 9/14/2017 New York

Figure 5

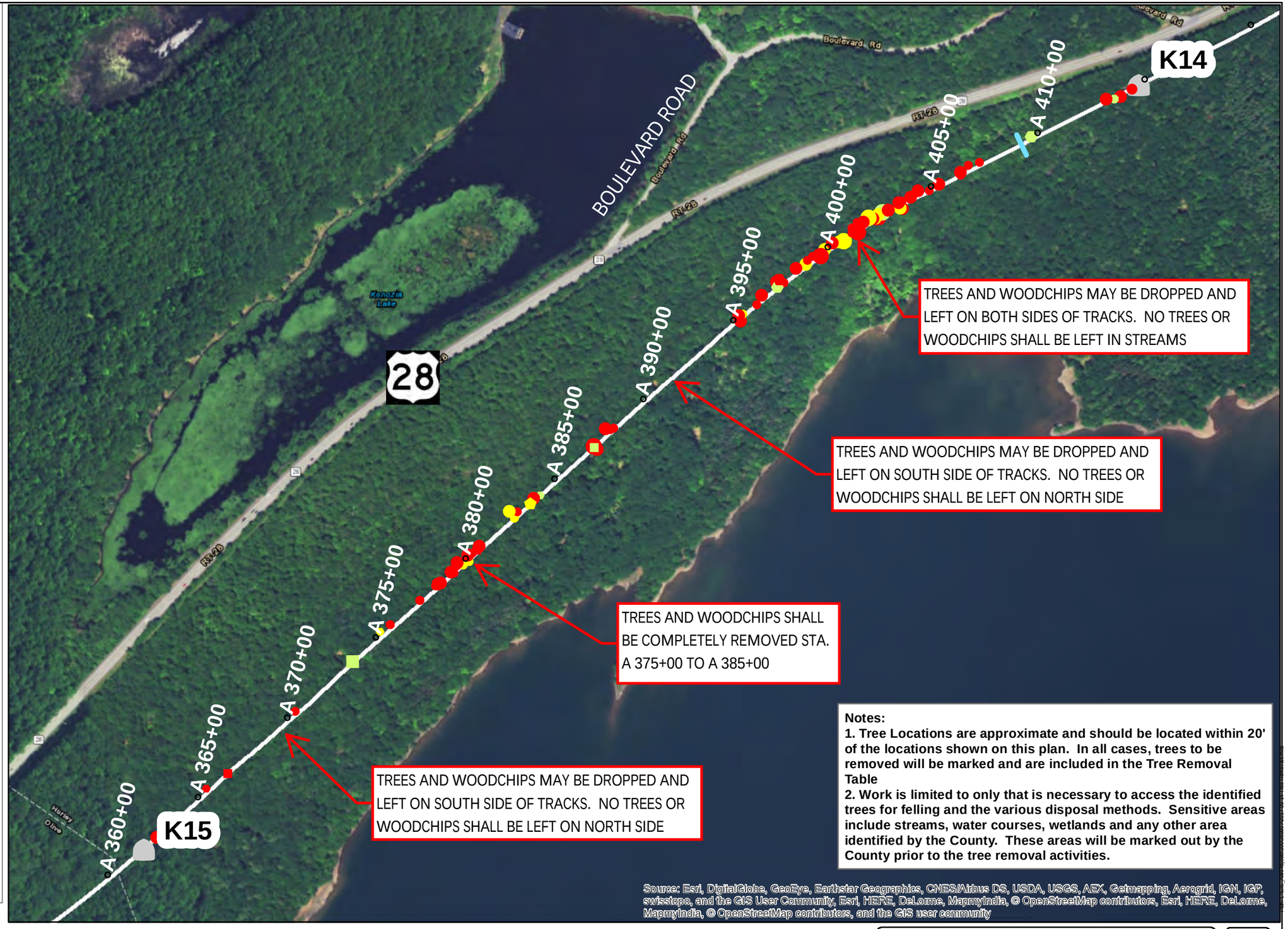
Project RFB 17-151C

Legend

Trees K14_K15

Status, DBH_range, Species (Segment Quantity)

- alive, 15-24, Ash (1)
- alive, 4-8, Birch (1)
- alive, 4-8, Maple (1)
- alive, 4-8, Oak (1)
- alive, 4-8, Other (1)
- alive, 9-14, Maple (1)
- alive, 9-14, Oak (3)
- dead standing, 15-24, Ash (3)
- dead standing, 4-14, Ash (1)
- dead standing, 4-8, Ash (34)
- dead standing, 4-8, Maple (2)
- dead standing, 4-8, Oak (1)
- dead standing, 4-8, Other (1)
- dead standing, 9-14, Ash (32)
- dead standing, 9-14, Oak (2)
- dead standing, 9-14, Other (1)
- stressed, 15-24, Ash (2)
- stressed, 4-8, Ash (5)
- stressed, 4-8, Oak (1)
- stressed, 9-14, Ash (7)
- stressed, 9-14, Birch (1)
- Milepost
- Access and Staging
- Streams
- Wetlands



Notes:
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Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Tree Removals K14-K15
Ulster County 9/14/2017 New York

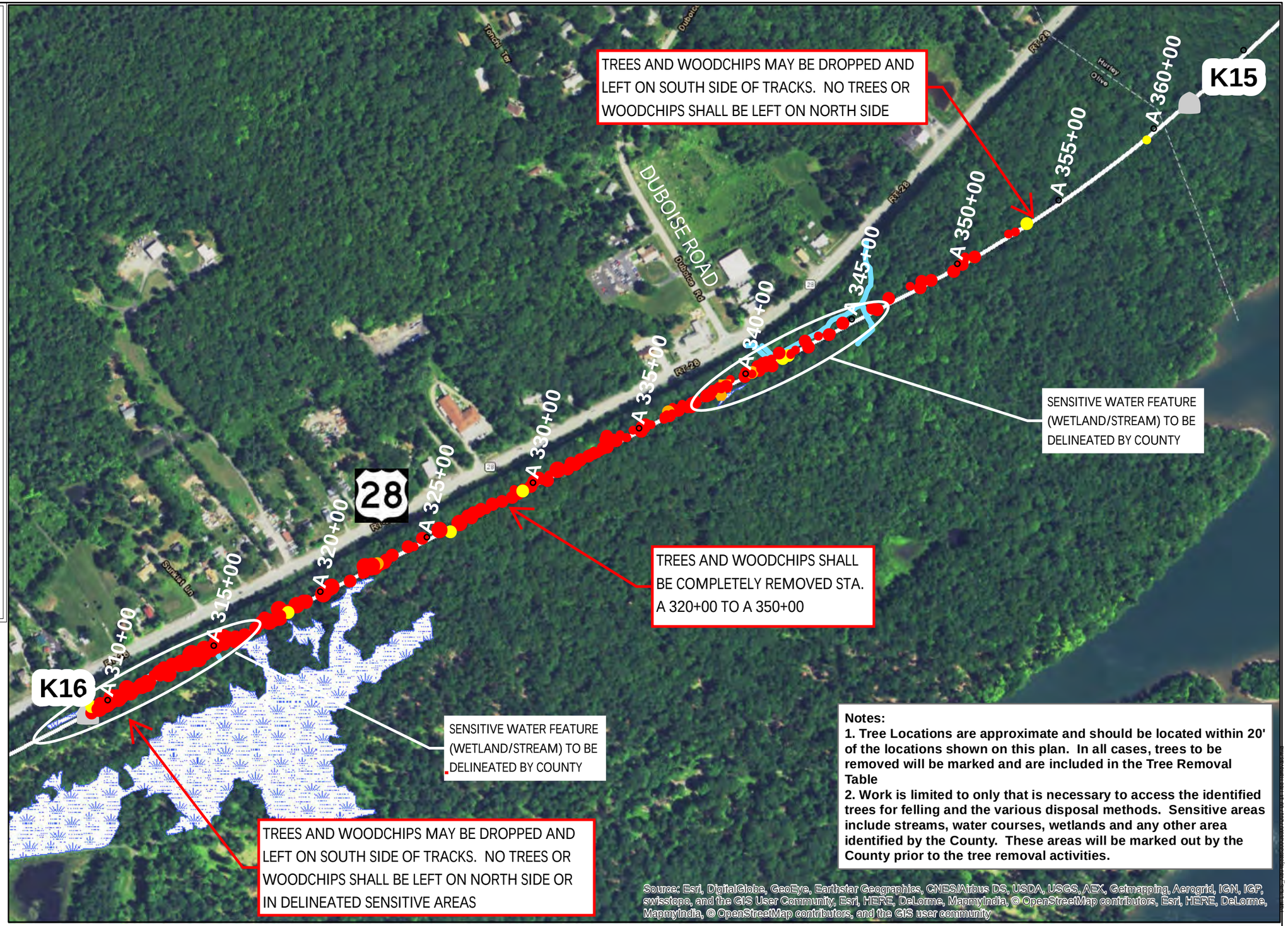
Figure 6
Project RFB 17-151C

Legend

Trees K15_K16

Status, DBH_range, Species (Segment Quantity)

- dead standing, 15-24, Ash (36)
- dead standing, 25-34, Ash (3)
- dead standing, 4-8, Ash (163)
- dead standing, 4-8, Birch (1)
- dead standing, 4-8, Maple (1)
- dead standing, 4-8, Other (2)
- dead standing, 9-14, Ash (144)
- down, 9-14, Ash (3)
- down, 9-14, Maple (1)
- down, 9-14, Oak (1)
- stressed, 4-8, Ash (4)
- stressed, 9-14, Ash (9)
- Milepost
- Access and Staging
- Streams
- Wetlands



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Ulster County
Ashokan Rail Trail
Tree Removals K15-K16
Ulster County 9/14/2017 New York

Figure 7

Project RFB 17-151C

Legend

Trees K16_K17

Status, DBH_range, Species (Segment Quantity)

- dead standing, 15-24, Ash (14)
- dead standing, 15-24, Pine (1)
- dead standing, 4-8, Ash (40)
- dead standing, 4-8, Other (1)
- dead standing, 4-8, Pine (1)
- dead standing, 9-14, Ash (101)
- dead standing, 9-14, Other (2)
- down, 15-24, Ash (1)
- stressed, 15-24, Ash (5)
- stressed, 4-8, Ash (1)
- stressed, 9-14, Ash (7)
- Milepost
- Access and Staging
- Streams
- Wetlands

TREES AND WOODCHIPS MAY BE DROPPED AND LEFT ON SOUTH SIDE OF TRACKS. NO TREES OR WOODCHIPS SHALL BE LEFT ON NORTH SIDE

RAIL AND TIE STOCKPILE AREA AT SHOKAN STATION

TREES AND WOODCHIPS SHALL BE COMPLETELY REMOVED STA. A 255+00 TO A 275+00

SENSITIVE WATER FEATURE (WETLAND/STREAM) TO BE DELINEATED BY COUNTY

SENSITIVE WATER FEATURE (WETLAND/STREAM) TO BE DELINEATED BY COUNTY

Notes:

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Ulster County
Ashokan Rail Trail
Tree Removals K16-K17
Ulster County 9/14/2017 New York

Figure 8

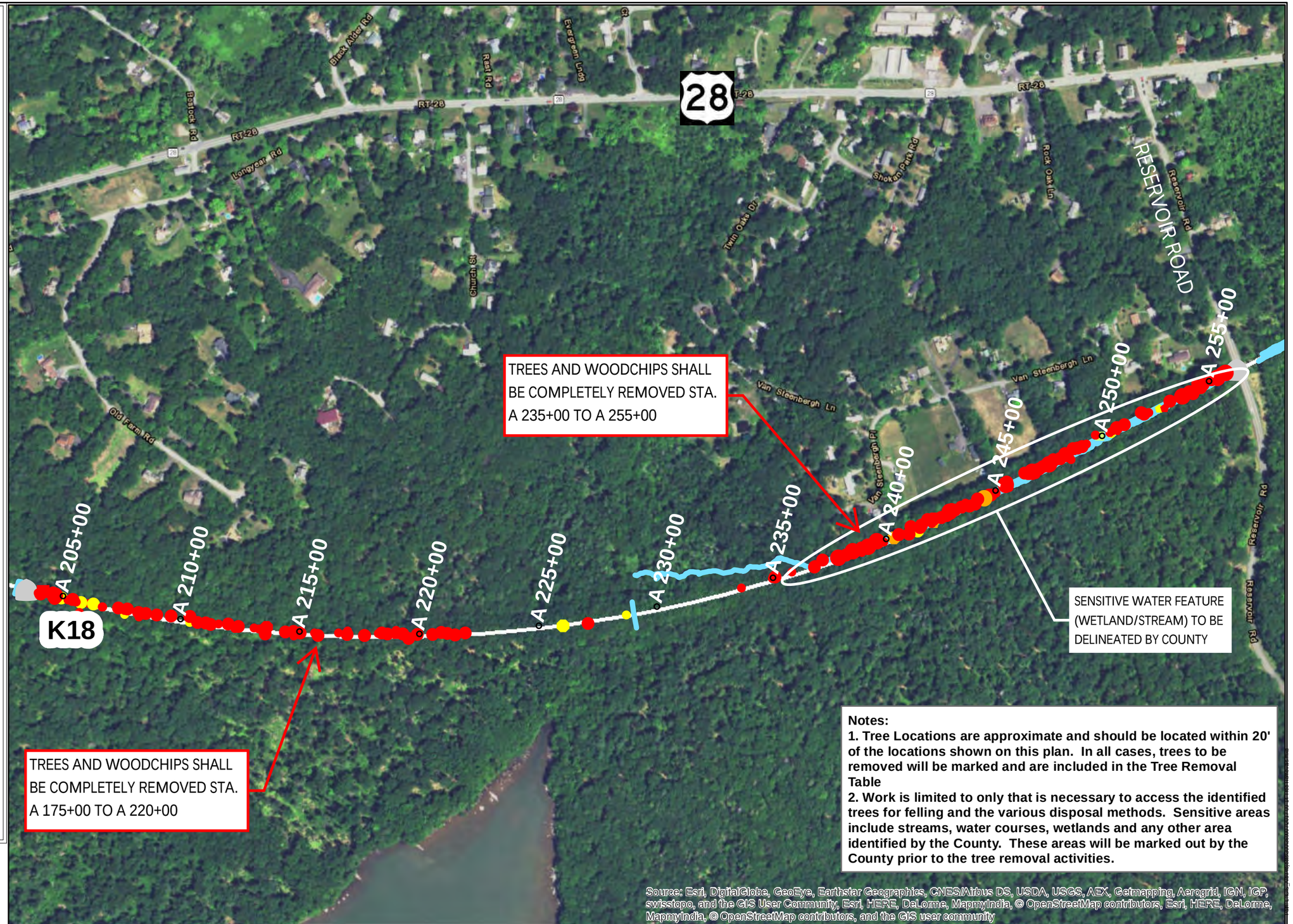
Project RFB 17-151C

Legend

Trees K17_K18

Status, DBH_range, Species (Segment Quantity)

- alive, 4-8, Maple (1)
- dead standing, 15-24, Ash (12)
- dead standing, 4-8, Ash (90)
- dead standing, 4-8, Birch (2)
- dead standing, 4-8, Maple (1)
- dead standing, 4-8, Other (2)
- dead standing, 4-8, Pine (1)
- dead standing, 9-14, Ash (118)
- dead standing, 9-14, Birch (2)
- dead standing, 9-14, Maple (1)
- dead standing, 9-14, Oak (1)
- dead standing, 9-14, Other (5)
- down, 15-24, Ash (1)
- down, 9-14, Birch (1)
- down, 9-14, Other (1)
- stressed, 4-8, Ash (4)
- stressed, 4-8, Birch (2)
- stressed, 9-14, Ash (4)
- stressed, 9-14, Other (1)
- Milepost
- Access and Staging
- Streams
- Wetlands



Notes:

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Ulster County
Ashokan Rail Trail
Tree Removals K17-K18
Ulster County 9/14/2017 New York

Figure 9

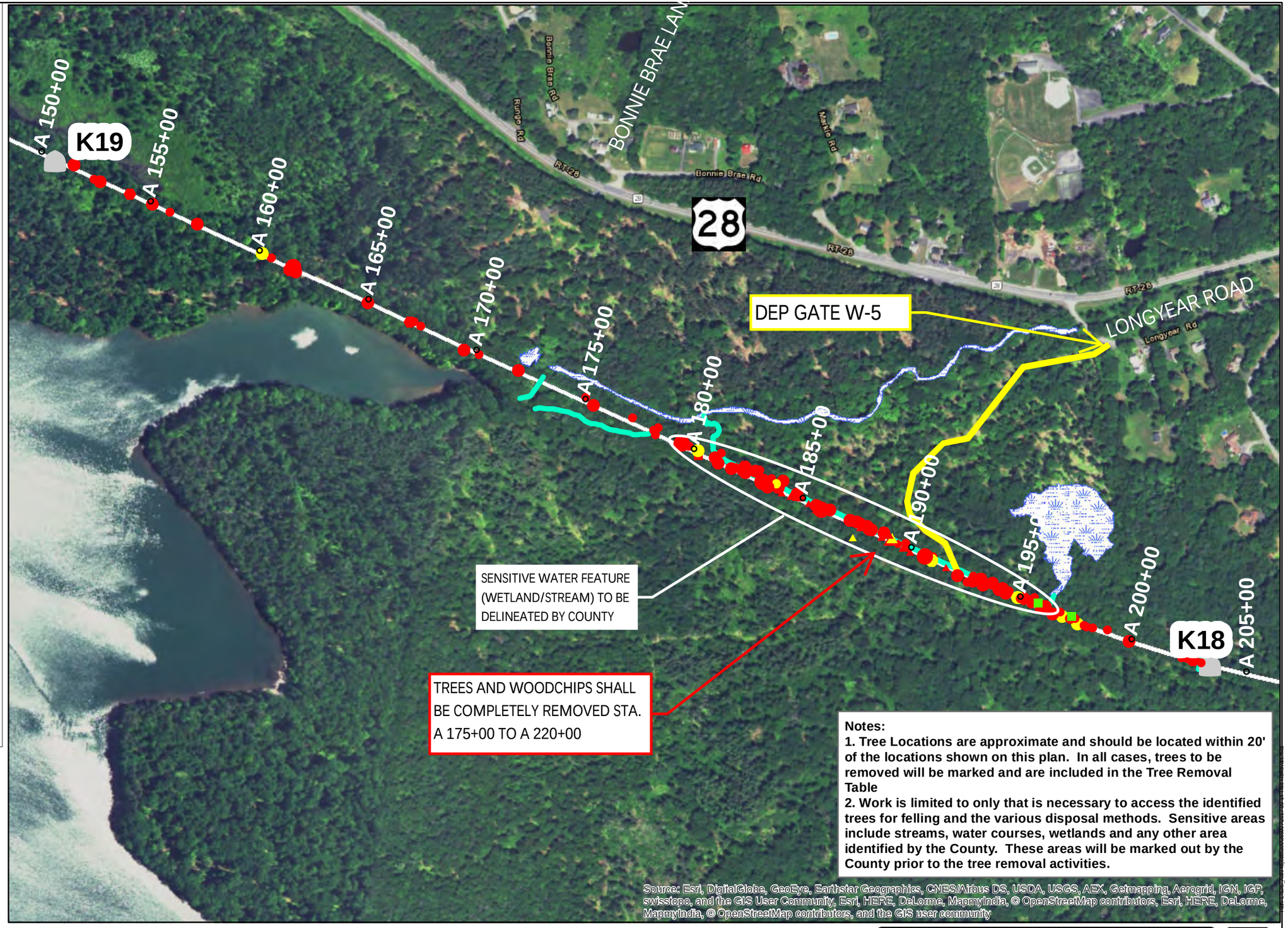
Project RFB 17-151C

Legend

Trees K18_K19

Status, DBH_range, Species (Segment Quantity)

- alive, 4-8, Maple (4)
- dead standing, 15-24, Ash (5)
- dead standing, 4-8, Ash (78)
- dead standing, 4-8, Birch (2)
- dead standing, 4-8, Maple (1)
- dead standing, 4-8, Other (2)
- dead standing, 4-8, Pine (23)
- dead standing, 9-14, Ash (61)
- dead standing, 9-14, Oak (2)
- dead standing, 9-14, Other (2)
- dead standing, 9-14, Pine (5)
- stressed, 4-8, Ash (2)
- stressed, 4-8, Pine (2)
- stressed, 9-14, Ash (10)
- stressed, 9-14, Other (1)
- stressed, 9-14, Pine (1)
- Milepost
- Access and Staging
- Streams
- Wetlands



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N W E S

1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Tree Removals K18 - K19
Ulster County 9/14/2017 New York

Figure 10

Project RFB 17-151C

Legend

Trees K19_K20

Status, DBH_range, Species (Segment Quantity)

- alive, 4-8, Birch (2)
- alive, 4-8, Maple (1)
- alive, 4-8, Other (2)
- alive, 9-14, Maple (1)
- dead standing, 15-24, Ash (13)
- dead standing, 15-24, Other (2)
- dead standing, 25-34, Ash (2)
- dead standing, 4-8, Ash (17)
- dead standing, 4-8, Birch (1)
- dead standing, 4-8, Pine (1)
- dead standing, 9-14, Ash (32)
- dead standing, 9-14, Birch (3)
- dead standing, 9-14, Other (3)
- Milepost
- Access and Staging
- Streams
- Wetlands

K20

A 100+00

A 105+00

A 110+00

A 115+00

A 120+00

A 125+00

A 130+00

A 135+00

A 140+00

A 145+00

A 150+00

A 155+00

K19

DANCING ROCK ROAD

Dancing Rock Rd

Crosswell Manor Dr

RT-28

28

DEP GATE W-7

SENSITIVE WATER FEATURE (WETLAND/STREAM) TO BE DELINEATED BY COUNTY

TREES AND WOODCHIPS SHALL NOT BE DEPOSITED ON RESERVOIR SIDE OF TRACKS

TREES AND WOODCHIPS SHALL BE COMPLETELY REMOVED STA. A 130+00 TO A 145+00

CONTRACTOR MAY ELECT TO USE THIS AREA FOR STAGING AND STOCKPILING. CONTRACTOR SHALL SUBMIT PLAN TO COUNTY FOR APPROVAL PRIOR TO USE

Notes:

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N W E S

1 inch = 400 feet

Ulster County

Ashokan Rail Trail

Tree Removals K19-K20

Ulster County 9/14/2017 New York

Figure 11

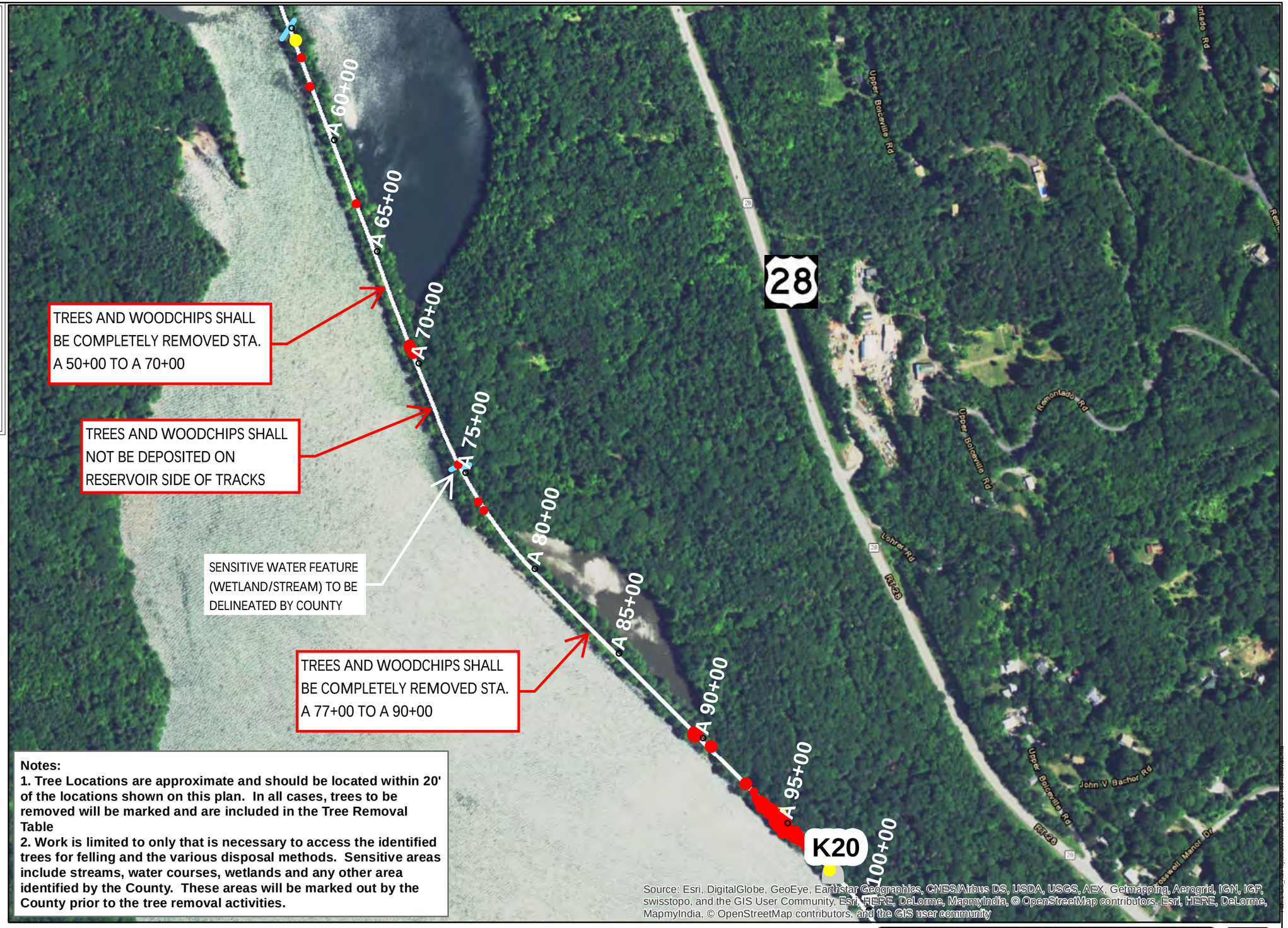
Project RFB 17-151C

Legend

Trees K20_K21

Status, DBH_range, Species (Segment Quantity)

- dead standing, 15-24, Ash (11)
- dead standing, 4-8, Ash (24)
- dead standing, 9-14, Ash (25)
- dead standing, 9-14, Other (1)
- stressed, 9-14, Ash (2)
- stressed, 9-14, Other (1)
- Milepost
- Access and Staging
- Streams
- Wetlands



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1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Tree Removals K20-K21
Ulster County 9/14/2017 New York

Figure 12
Project RFB 17-151C

Legend

Trees K20_K21

Status, DBH_range, Species (Segment Quantity)

- alive, 9-14, Ash (2)

Trees K21_K21.5

Status, DBH_range, Species (Segment Quantity)

- alive, 4-8, Birch (1)
- dead standing, 15-24, Ash (1)
- dead standing, 4-8, Ash (1)
- dead standing, 4-8, Other (1)
- dead standing, 4-8, Pine (2)
- dead standing, 9-14, Pine (1)
- stressed, 15-24, Ash (1)
- stressed, 35-44, Ash (1)
- stressed, 4-8, Ash (1)
- stressed, 9-14, Ash (4)
- Milepost
- Access and Staging
- Streams
- Wetlands

COLD BROOK ROAD

DEP GATE W-12

SENSITIVE WATER FEATURE (WETLAND/STREAM) TO BE DELINEATED BY COUNTY

TREES AND WOODCHIPS SHALL BE COMPLETELY REMOVED STA. A 31+00 TO A 50+00

SENSITIVE WATER FEATURE (WETLAND/STREAM) TO BE DELINEATED BY COUNTY

SENSITIVE WATER FEATURE (WETLAND/STREAM) TO BE DELINEATED BY COUNTY

A 15+00

A 20+00

A 25+00

A 30+00

A 35+00

A 40+00

A 45+00

K21

RT-28A

Esopus Creek

Oak Mountain Farm Rd

Traver Hollow Rd

Bruneau Dr

Destiva Rd

Barclay Rd

Barclay Rd

Barclay Rd

28

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

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N

W E

S

1 inch = 400 feet

Ulster County

Ashokan Rail Trail

Tree Removals K21-K21.5

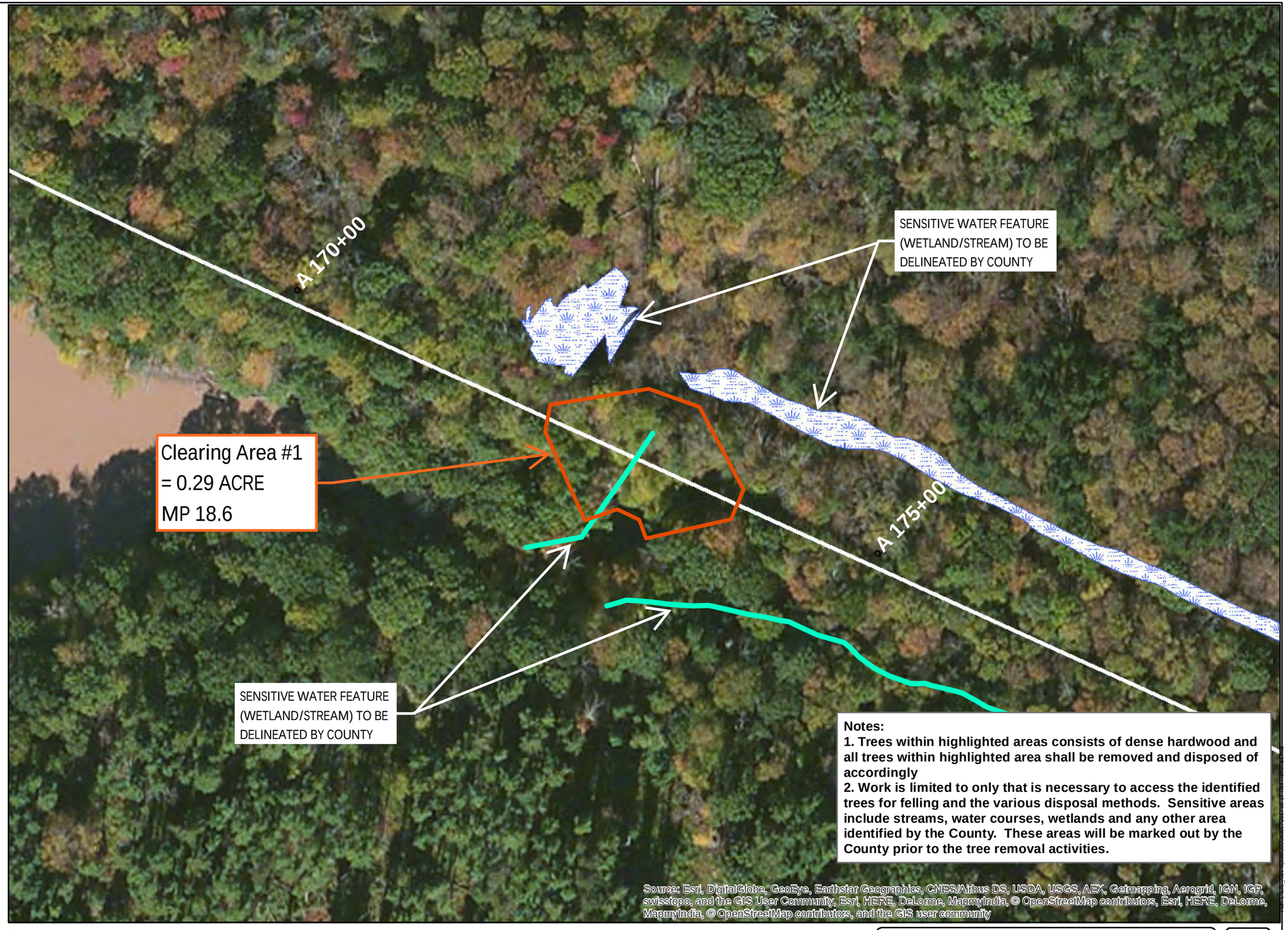
Ulster County 9/14/2017 New York

Figure 13

Project RFB 17-151C

Legend

- Clearing Areas (1)
- Milepost
- Access and Staging
- Streams
- Wetlands



Notes:
1. Trees within highlighted areas consists of dense hardwood and all trees within highlighted area shall be removed and disposed of accordingly
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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

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N
W E
S

1 inch = 75 feet

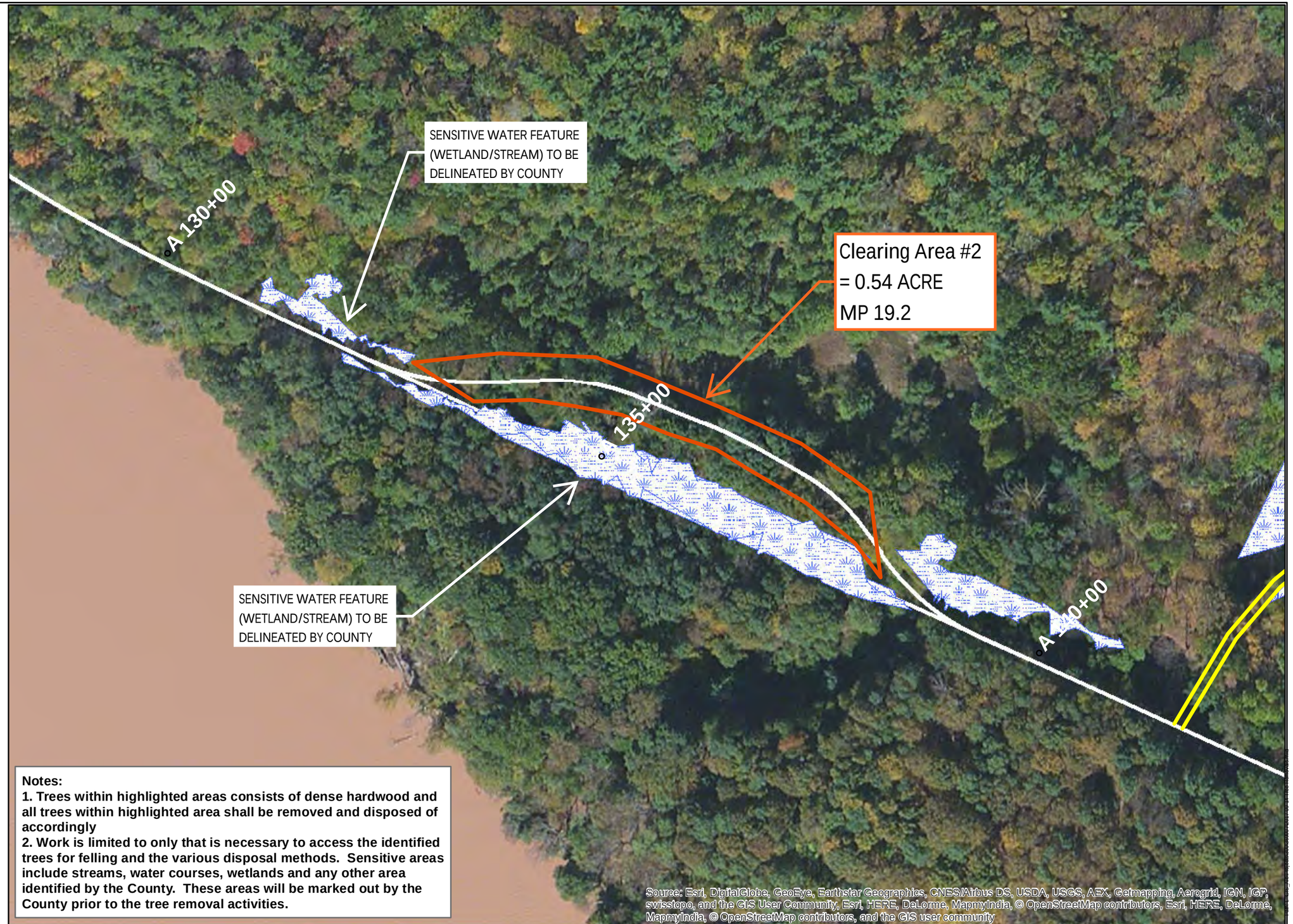
Ulster County
Ashokan Rail Trail
Tree Removal Areas
Ulster County 9/14/2017 New York

Figure 14

Project RFB 17-151C

Legend

- Clearing Areas (1)
- Milepost
- Access and Staging
- Streams
- Wetlands



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N W E S

1 inch = 100 feet

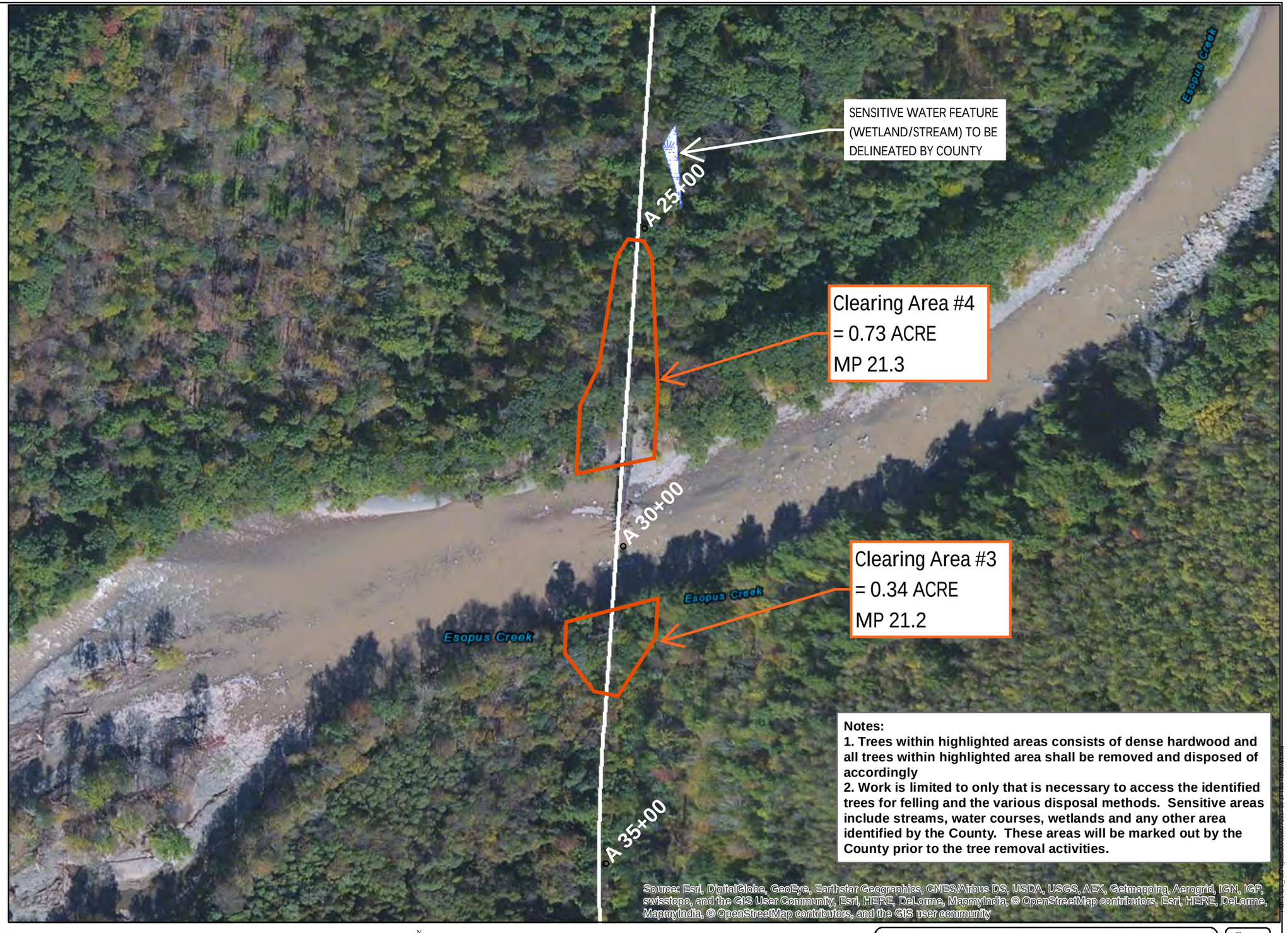
Ulster County
Ashokan Rail Trail
Tree Removal Areas
Ulster County 9/14/2017 New York

Figure 15

Project RFB 17-151C

Legend

- Clearing Areas (2)
- Milepost
- Access and Staging
- Streams
- Wetlands



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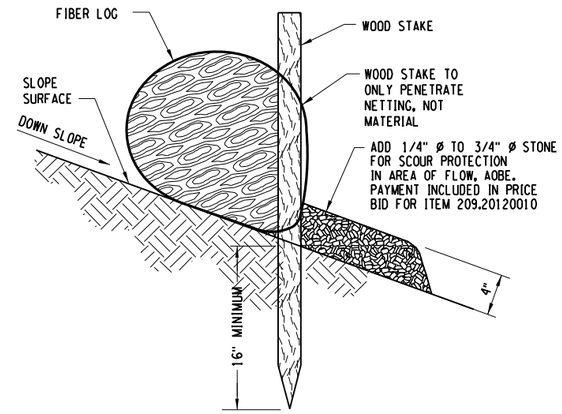
1 inch = 150 feet

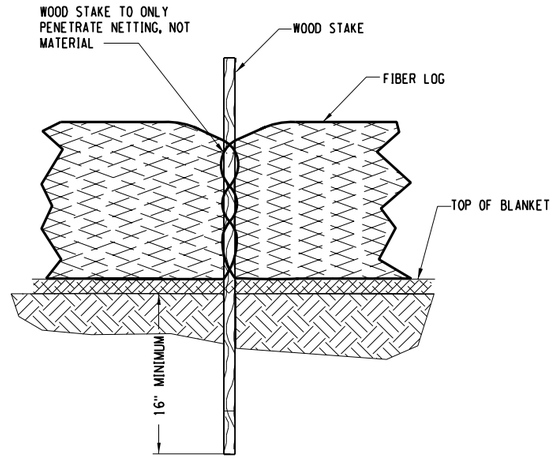
Ulster County
Ashokan Rail Trail
Tree Removal Areas
Ulster County 9/14/2017 New York

Figure 16
Project RFB 17-151C



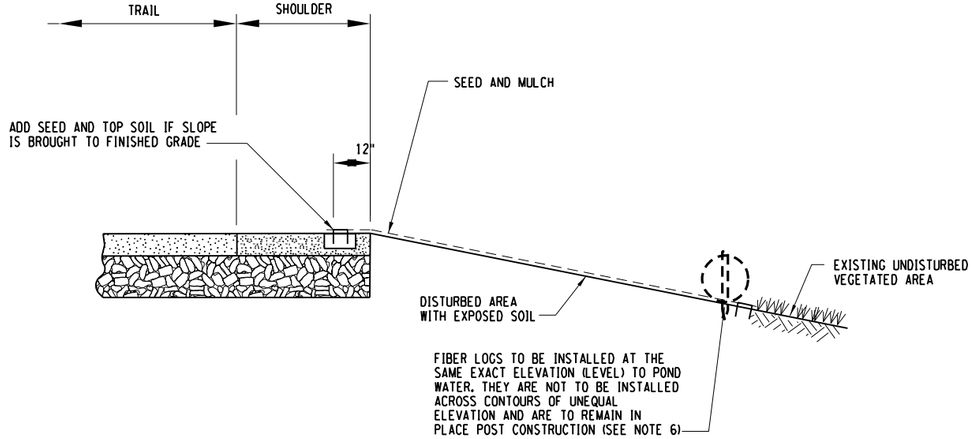
FIBER LOG STAKE DETAIL (ON BARE SOIL)

N.T.S.



FIBER LOG STAKE DETAIL (FRONT VIEW)

N.T.S.



EROSION AND SEDIMENT CONTROL FOR ALL DISTURBED AREAS TEMPORARY OR PERMANENT

N.T.S.

FIBER LOG CHECK DAM APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF A CHECK DAM IS TO REDUCE EROSION IN A CHANNEL BY REDUCING FLOW VELOCITY IN THE CHANNEL.

B. CHECK DAMS WILL CAPTURE SEDIMENT THAT FALLS OUT OF SUSPENSION BEHIND THE CHECK DAM DUE TO DECREASED VELOCITY.

C. CHECK DAMS ARE NOT INTENDED TO, AND WILL NOT FILTER SEDIMENT FROM TURBID WATER.

NOTES:

1. DRAINAGE AREAS:
MAXIMUM DRAINAGE AREA TRIBUTARY TO FIBER LOG CHECK DAM SHALL BE 1 ACRE. MAXIMUM DRAINAGE AREA TRIBUTARY TO PREFABRICATED CHECK DAM SHALL BE ½ ACRE.

2. POSTS MAY BE 1¼" x 1¼" (MIN.) HARDWOOD, 1½" x 3½" (MIN.) SOFTWOOD. ADDITIONAL POSTS ARE REQUIRED AT THE OUTER EDGES OF DITCH WIDTH.

3. THE FIBER LOG SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC AS SHOWN.

4. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT OF THE FIBER LOG. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.

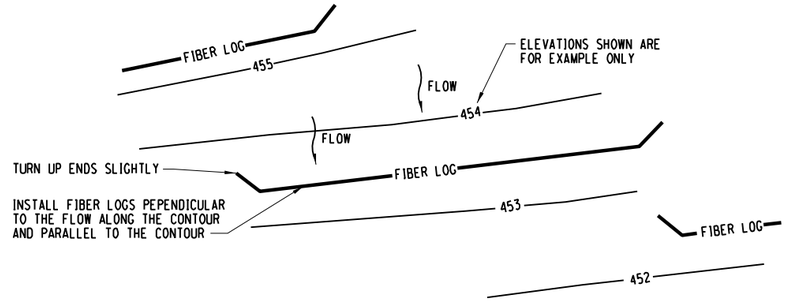
NOTES:

1. ITEMS IN THIS DETAIL MAY APPEAR EXAGGERATED TO SHOW DETAIL.

2. IF SLOPE IS BROUGHT TO FINISHED GRADE, PERMANENT TOP SOIL AND SEEDING SHALL BE INSTALLED PRIOR TO INSTALLING ITEM 209.2103 - SOIL STABILIZERS, CLASS IV TYPE C. IF SLOPES ARE NOT BROUGHT TO FINISH GRADE THEY ARE TO BE TREATED WITH ITEM 209.1003 - TEMPORARY SEED AND MULCH.

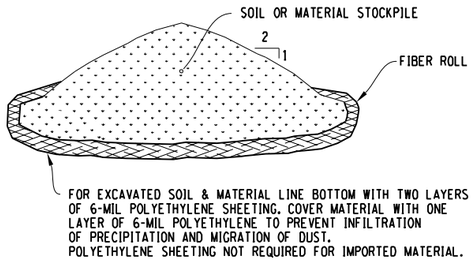
3. AS PART OF FINAL STABILIZATION, WOODEN STAKES TO BE REMOVED AND FIBER LOG MULCH NETTING CUT OPEN ALONG ENTIRE LENGTH.

4. USE STRAW MULCH FOR EROSION PREVENTION



FIBER LOG PLAN EXAMPLE

N.T.S.

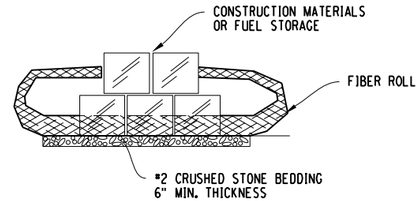


EXCAVATED AND IMPORTED SOIL AND MATERIAL STOCKPILE

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE. THE AREA SHALL NOT BE WITHIN THE DRIPLINE OR CANOPY OF EXISTING TREES. THE LOCATION SHALL BE AS NOTED ON THE DRAWINGS. DREDGED OR EXCAVATED MATERIALS SHALL BE PLACED UPON SILT FENCE FABRIC.

2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2(H) TO 1(V).

3. FIBER LOGS SHALL BE PLACED FIVE (5)-FEET DOWNSLOPE OF EACH PILE. UPON COMPLETION OF SOIL STOCKPILING, TOPSOIL SHALL BE STABILIZED WITH TEMPORARY SEED AND MULCH IF NOT TO BE DISTURBED/UTILIZED WITHIN FOURTEEN (14) DAYS.



FUEL, EQUIPMENT, OR MATERIAL STORAGE AREA

1. AREA CHOSEN FOR STORAGE OPERATIONS SHALL BE DRY AND STABLE. THE AREA SHALL NOT BE WITHIN THE DRIPLINE OR CANOPY OF TREES. THE LOCATION SHALL BE AS NOTED ON THE DRAWINGS.

2. NO STOCKPILE AREA SHALL BE LOCATED WITHIN FIFTY (50) FEET OF SURFACE WATER, FLOODPLAIN, SLOPE, DRAINAGE FACILITY OR ROADWAY.

3. IF STABLE SURFACE NOT AVAILABLE, THE TOP SIX (6) INCHES OF NATIVE MATERIAL SHALL BE EXCAVATED FROM THE MATERIAL/FUEL STORAGE AREA AND STOCKPILED TO REUSE FOR RESTORATION OF THIS AREA. IN THE AREA EXCAVATED, PLACE SEPARATION FABRIC AND SIX (6) INCHES OF #2 CRUSHED STONE BEDDING, SEE SPECIFICATIONS. IF APPROVED BY THE ENGINEER, USE OF EXISTING GRAVEL AREAS MAY BE USED IN LIEU OF EXCAVATION, STONE, AND FABRIC.

4. FIBER LOGS SHALL BE PLACED FIVE (5) FEET DOWN SLOPE OF STORAGE AREA.

5. REMOVE ALL MATERIALS INCLUDING STONE AND FABRIC WHEN NEED FOR STORAGE IS OVER. RESTORE TO ORIGINAL GRADE WITH STOCKPILED EXCAVATED SOIL (NO FOREIGN DEBRIS).

CONSTRUCTION STOCKPILE/STORAGE AREA DETAIL

N.T.S.

PREPARED BY: BARTON & LOGUIDICE, D.P.C.
ON :

DRAFT
NOT FOR CONSTRUCTION

NO.	DATE	BY	REVISION

XX

Barton & Loguidice, D.P.C.

ASHOKAN RAIL TRAIL

ULSTER COUNTY

EROSION AND SEDIMENT CONTROL DETAILS - 1

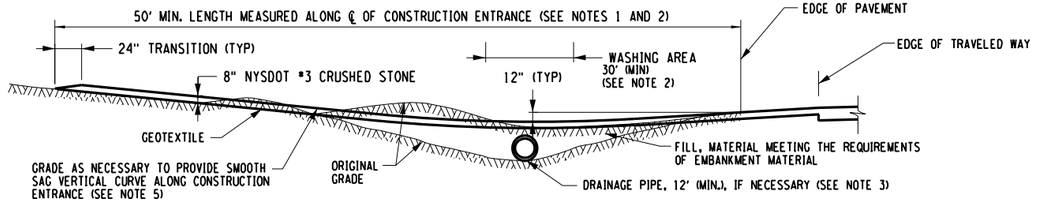
SCALE: AS SHOWN

DATE ISSUED: 5/2017

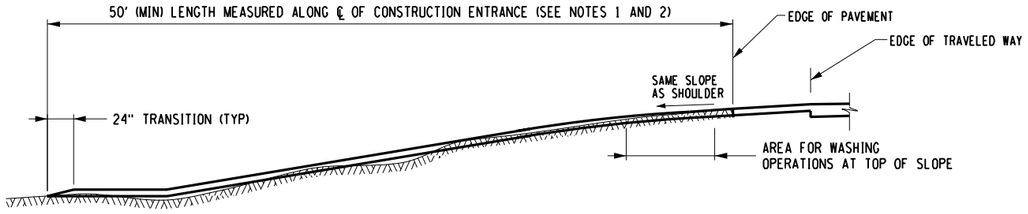
DRAWING
ESCD-1

DESIGNED BY
DRAFTED BY
CHECKED BY
CHECKED BY
IN CHARGE OF

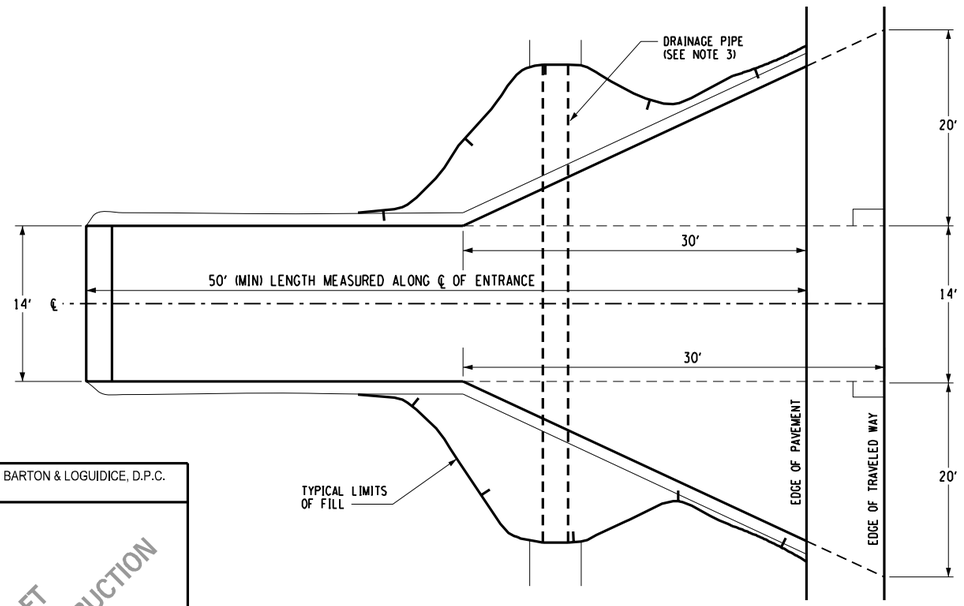
cmh
L:\MicroStation\Bentley V8i\WorkSpace\PLOT/SITE_NYSDOT_SIZE_B.TBL
L:\MicroStation\Workspace\Plot\NYSDOT\NYSDOT_L_J5000_B_04_08.plt
FILE NAME = L:\MSTN Projects\0300\369.007 - Ashokan Rail Trail\MSTN\Deconstruction Plans\017_369007001_ESCD 01.dgn
DATE = 9/13/2017
TIME = 6:08:32 PM



TYPICAL CONSTRUCTION ENTRANCE PROFILE
(CUT AND DITCH SECTIONS)



TYPICAL CONSTRUCTION ENTRANCE PROFILE
(FILL SECTIONS)



TYPICAL CONSTRUCTION ENTRANCE PLAN
(CUT/DITCH AND FILL SECTIONS)

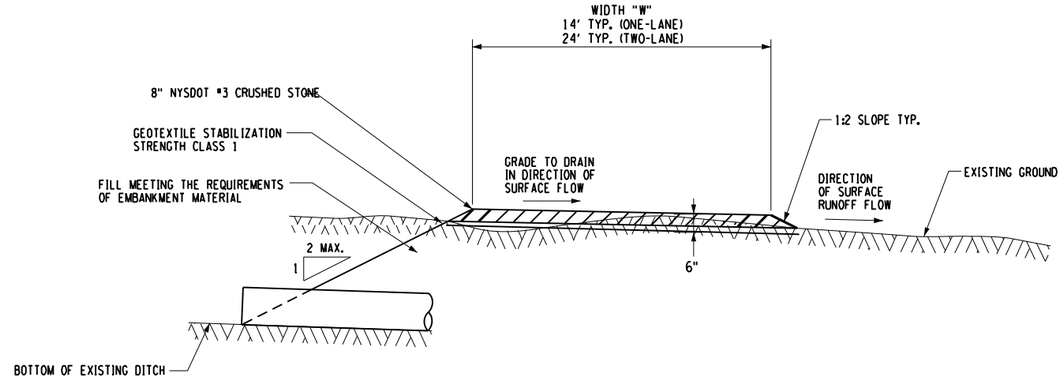
CONSTRUCTION ENTRANCES:

APPLICATION NOTES:

A. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY OR STREETS.

NOTES:

1. MODIFICATIONS MAY BE REQUIRED TO MATCH FIELD CONDITIONS.
2. A 30' WASH AREA SHALL BE PROVIDED. ADDITIONAL GRADING MAY BE REQUIRED TO PROVIDE WASHING AREAS.
3. PROPOSED DRAINAGE PIPES SHALL BE SIZED WITH SUFFICIENT CAPACITY TO CARRY DITCH FLOWS. ALTERNATE WAYS OF TRANSPORTING DITCH DRAINAGE ACROSS CONSTRUCTION ENTRANCES MAY BE PROPOSED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER.
4. THE CONTRACTOR SHALL GRADE TO PREPARE AND SMOOTH ORIGINAL GROUND FOR PLACEMENT OF 8" OF #3 CRUSHED STONE ENTRANCE MATERIAL UP TO THE EDGE OF PAVEMENT.
5. ALL WORK TO CONSTRUCT THE STABILIZED ENTRANCE, INCLUDING GRADING, DRAINAGE PIPE, EXCAVATION, FILL, GEOTEXTILE AND CRUSHED STONE OR GRAVEL SHALL BE INCLUDED IN THE UNIT PRICE BID.
6. 100% CRUSHED STONE MEETING THE NYSDOT #3 STONE GRADATION SHALL BE UTILIZED FOR CONSTRUCTION ENTRANCES



TYPICAL CONSTRUCTION ENTRANCE SECTION

PREPARED BY: BARTON & LOGUIDICE, D.P.C.
ON :

DRAFT
NOT FOR CONSTRUCTION

NO.	DATE	BY	REVISION

XX

Barton & Loguidice, D.P.C.

ASHOKAN RAIL TRAIL
ULSTER COUNTY

EROSION AND SEDIMENT CONTROL DETAILS - 2

SCALE: NONE
DATE ISSUED: 3/2017
DRAWING
ESCD-2

DESIGNED BY
DRAFTED BY
CHECKED BY
IN CHARGE OF

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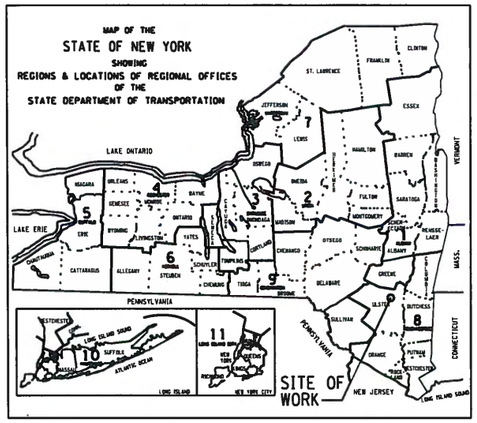

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IN CHARGE OF _____ DESIGNED BY _____ CHECKED BY _____

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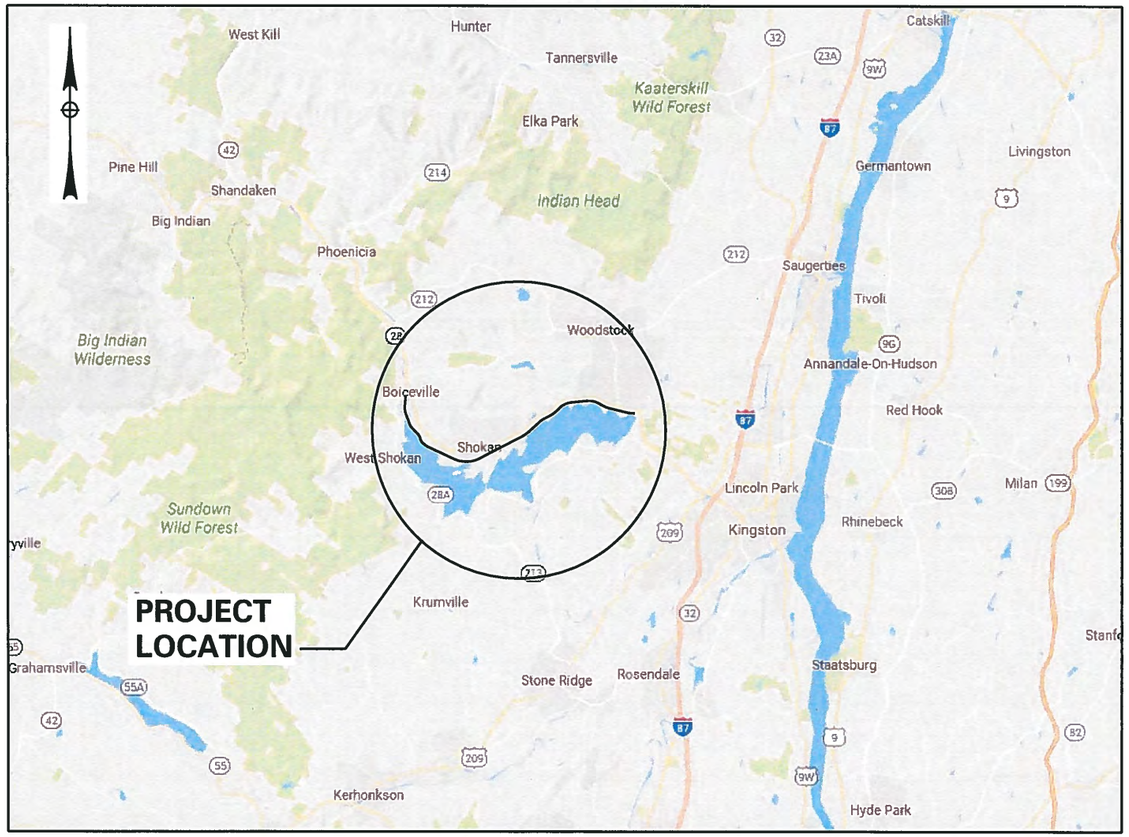
ASHOKAN RAIL TRAIL
ULSTER COUNTY

TRACK REMOVAL CONTRACT DRAWINGS
SEPTEMBER 15, 2017



PROJECT LOCATION

CONTRACTOR'S NAME	
AWARD DATE	
COMPLETION DATE	
FINAL ACCEPTANCE DATE	
ENGINEER IN CHARGE	
FINAL COST TOTAL	
FISCAL SHARE	COST(S)

Barton & Loguidice, D.P.C.

PREPARED AND RECOMMENDED BY

STATE OF NEW YORK
THOMAS C. BAIRD IV
074590
LICENSED PROFESSIONAL ENGINEER

9/18/2017

THOMAS C. BAIRD, P.E. — DATE
NEW YORK STATE PROFESSIONAL ENGINEERS LICENSE NO. 074590

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 3,333 feet

Ulster County
Ashokan Rail Trail
Track Removals Plan Sheet Key
Ulster County 9/14/2017 New York

Figure 1
Project RFB 17-152C

N

NYS ROUTE 375

VANDALE ROAD

SENSITIVE WATER FEATURE (WETLAND/STREAM) TO BE DELINEATED BY COUNTY

BEGIN TRACK REMOVAL AT MILEPOST K10

RAIL AND TIE STOCKPILE AREA AT WOODSTOCK DIKE

EXISTING SWITCH AND SIDING RAIL TO REMAIN IN PLACE.

SENSITIVE WATER FEATURE (WETLAND/STREAM) TO BE DELINEATED BY COUNTY

A 570+00

A 575+00

A 580+00

A 585+00

A 590+00

A 595+00

A 600+00

A 605+00

A 610+00

A 615+00

A 620+00

A 625+00

K11

K10

BASIN ROAD

Ashokan Reservoir

Legend

- Milepost
- Access and Staging
- Streams
- Wetlands

Barton & Loguidice, D.P.C.

Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 400 feet

Ulster County

Ashokan Rail Trail

Track Removals K10-K11

Ulster County 9/14/2017 New York

Figure 2

Project RFB 17-152C

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Track Removals K11-K12
Ulster County 9/14/2017 New York

Figure 3
Project RFB 17-152C

N

SENSITIVE WATER FEATURE (WETLAND/STREAM) TO BE DELINEATED BY COUNTY

DEP GATE E-8A

OLD ROUTE 28

MAVERICK ROAD

A 465+00
A 470+00
A 475+00
A 480+00
A 485+00
A 490+00
A 495+00
A 500+00
A 505+00
A 510+00
A 515+00
A 520+00
A 525+00

K13

K12

28

Ashokan Reservoir

SENSITIVE WATER FEATURE (WETLAND/STREAM) TO BE DELINEATED BY COUNTY

Legend

- Milepost
- Access and Staging
- Streams
- Wetlands

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Track Removals K12-K13
Ulster County 9/14/2017 New York

Figure 4
Project RFB 17-152C

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Track Removals K13-K14
Ulster County 9/14/2017 New York

Figure 5
Project RFB 17-152C

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Track Removals K14-K15
Ulster County 9/14/2017 New York

Figure 6
Project RFB 17-152C

N

DUBIOSE RAOD

SENSITIVE WATER FEATURE (WETLAND/STREAM) TO BE DELINEATED BY COUNTY

SENSITIVE WATER FEATURE (WETLAND/STREAM) TO BE DELINEATED BY COUNTY

K15

K16

28

A 365+00
A 360+00
A 355+00
A 350+00
A 345+00
A 340+00
A 335+00
A 330+00
A 325+00
A 320+00
A 315+00
A 310+00

Dubolce Rd
Forest Tar
Hurley
Olive
RT-28
Summit Lod

Legend

- Milepost
- Access and Staging
- Streams
- Wetlands

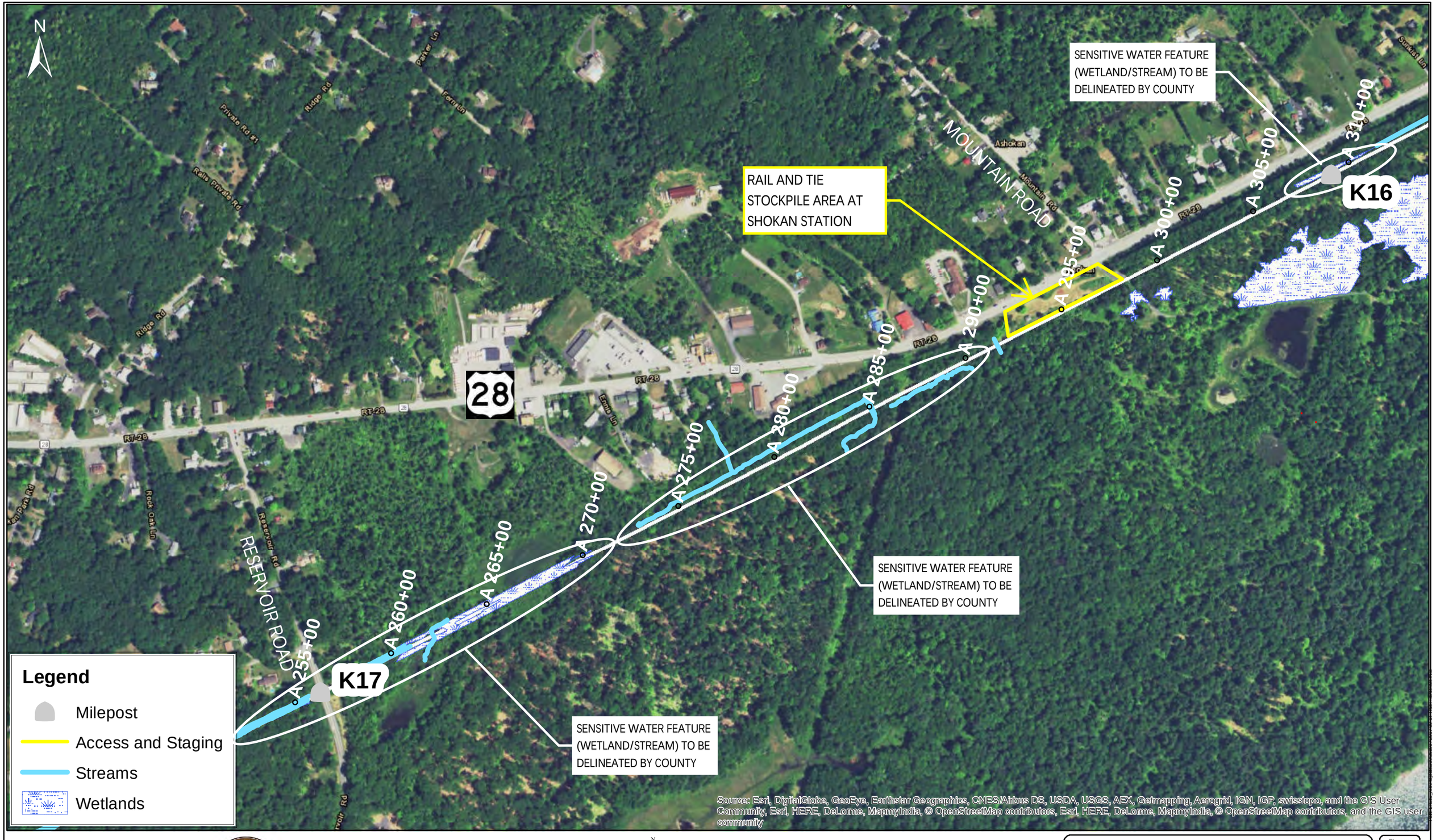
Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

N
W E
S

1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Track Removals K15-K16
Ulster County 9/14/2017 New York

Figure 7
Project RFB 17-152C



Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Track Removals K16-K17
Ulster County 9/14/2017 New York

Figure 8
Project RFB 17-152C

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Track Removals K17-K18
Ulster County 9/14/2017 New York

Figure 9
Project RFB 17-152C

N

RUNGE ROAD

DEP GATE W-7

DEP GATE W-5

BONNIE BRAE LANE

LONGYEAR ROAD

28

K19

K18

A 145+00

A 150+00

A 155+00

A 160+00

A 165+00

A 170+00

A 175+00

A 180+00

A 185+00

A 190+00

A 195+00

A 200+00

A 205+00

A 210+00

SENSITIVE WATER FEATURE (WETLAND/STREAM) TO BE DELINEATED BY COUNTY

Legend

- Milepost
- Access and Staging
- Streams
- Wetlands

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Track Removals K18-K19
Ulster County 9/14/2017 New York

Figure 10

Project RFB 17-152C

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Track Removals K19-K20
Ulster County 9/14/2017 New York

Figure 11

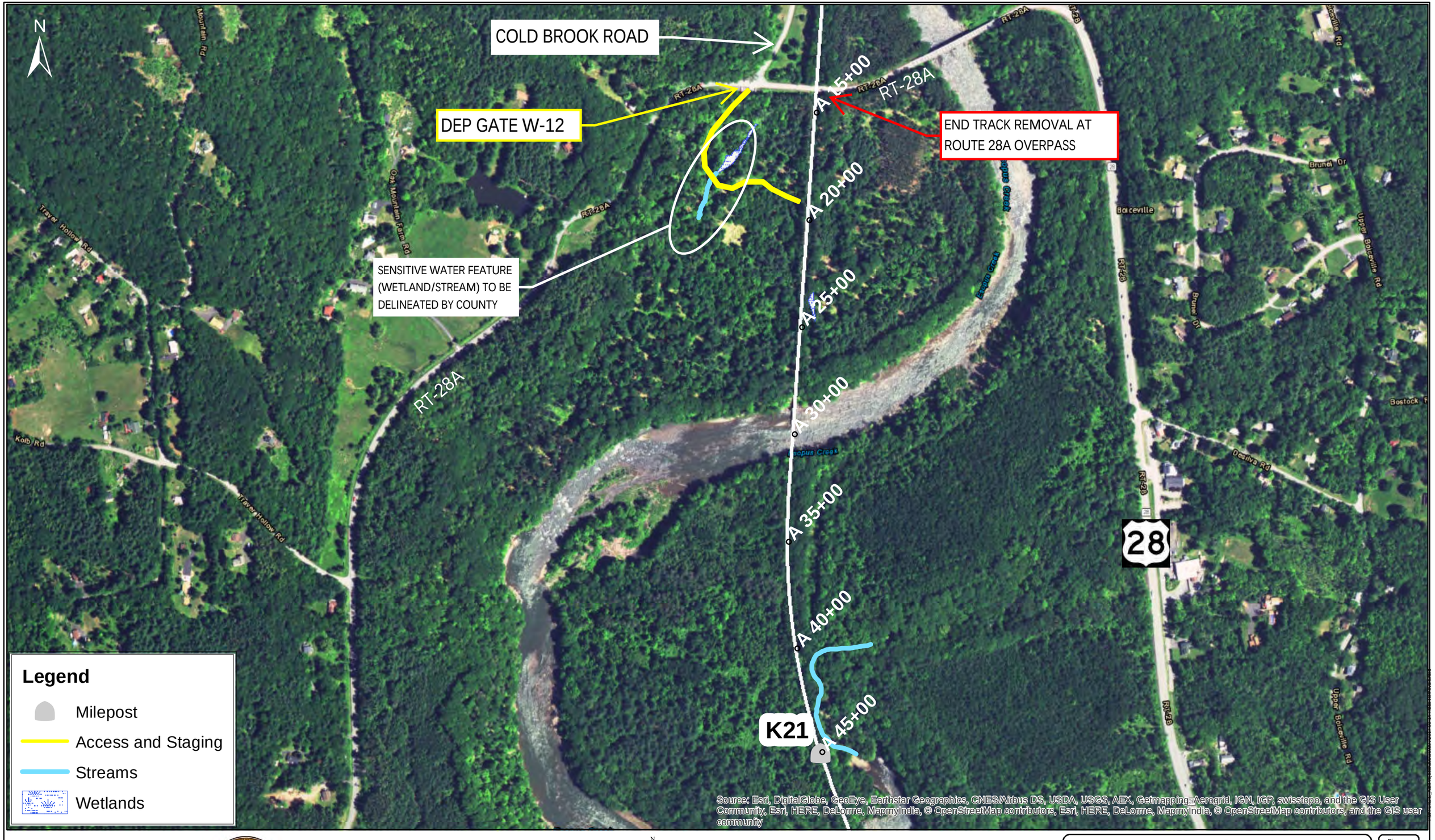
Project RFB 17-152C

Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Track Removals K20-K21
Ulster County 9/14/2017 New York

Figure 12
Project RFB 17-152C

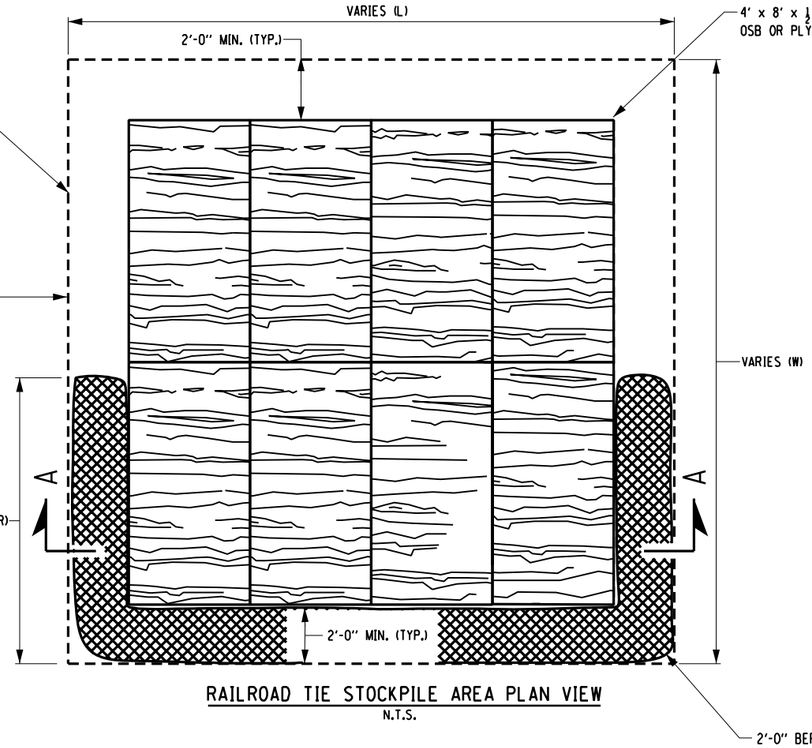


Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

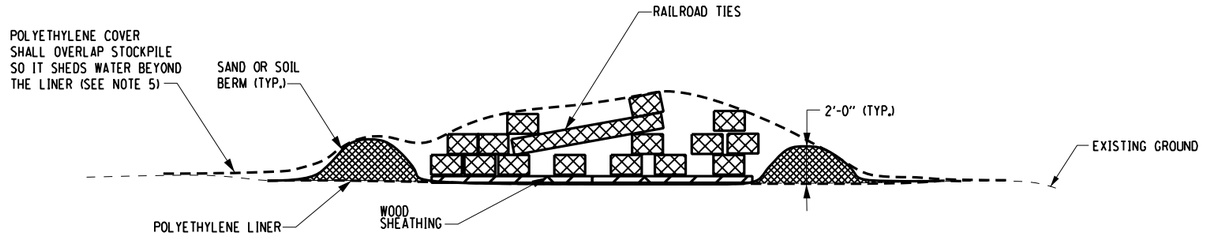
1 inch = 400 feet

Ulster County
Ashokan Rail Trail
Track Removals K21-K21.5
Ulster County 9/14/2017 New York

Figure 13
Project RFB 17-152C



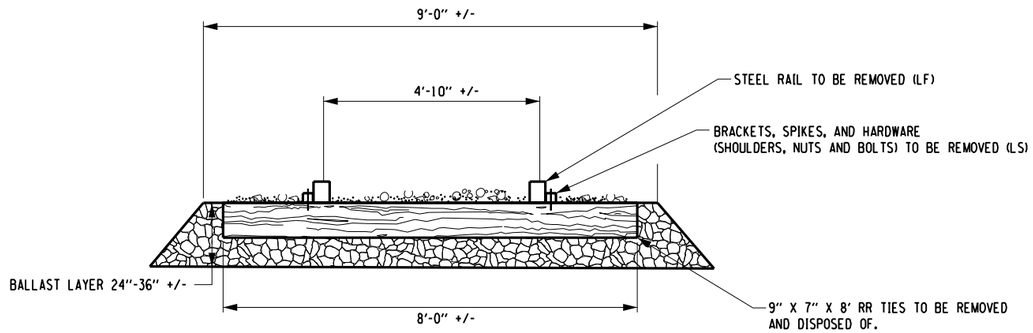
RAILROAD TIE STOCKPILE AREA PLAN VIEW
N.T.S.



DETAIL A-A
N.T.S.

RAILROAD TIE STOCKPILE SECTION NOTES:

1. IT IS STRONGLY ENCOURAGED THAT THE CONTRACTOR UTILIZES A SYSTEM THAT DOES NOT REQUIRE THE RAILROAD TIES TO BE STOCKPILED PRIOR TO TRANSPORT OFF-SITE. HOWEVER, IF STOCKPILING ON-SITE IS REQUIRED THE CONTRACTOR SHALL USE THIS DETAIL IN AREAS WHERE THE RAILROAD TIES WILL BE LAID DOWN.
2. RAILROAD TIES REMOVED FROM THEIR EXISTING LOCATION SHALL ONLY BE ALLOWED TO BE TEMPORARILY STORED IN DESIGNATED STOCKPILE AREAS PRIOR TO REMOVAL FROM THE PROJECT SITE. TIES SHALL NOT BE STORED IN ANY OTHER LOCATION WITHIN OR ADJACENT TO THE PROJECT CORRIDOR.
3. THE AREAS CHOSEN FOR RAILROAD TIE STOCKPILING SHALL BE DRY, STABLE, AND LEVEL AND NOT WITHIN THE DRIPLINE OR CANOPY OF TREES. THE LOCATIONS SHALL BE AS NOTED IN THE TRACK REMOVAL CONTRACT DRAWINGS.
4. NO STOCKPILE AREA SHALL BE LOCATED WITHIN FIFTY (50) FEET OF A SURFACE WATER, FLOODPLAIN, SLOPE, DRAINAGE FACILITY, OR ROADWAY.
5. COVER STOCKPILE AREA WITH 15 MIL OR THICKER POLYETHYLENE AND ANCHOR.



STEEL TRACK HARDWARE AND TIE REMOVAL DETAIL

1. REMOVAL PROCEDURE:

   REMOVE STEEL TRACK AND HARDWARE

   REMOVE TIE.

   GRADE REMAINING BALLAST INPLACE SMOOTH

2. AFTER ALL RAILROAD HARDWARE AND TIES HAVE BEEN REMOVED, THE REMAINING BALLAST SHALL BE GRADED SMOOTH TO REMOVE RUTS AND VOIDS FROM WHERE THE TIES WERE REMOVED.

PREPARED BY: BARTON & LOGUIDICE, D.P.C.
ON :

NO.	DATE	BY	REVISION
XX			

ASHOKAN RAIL TRAIL
ULSTER COUNTY

Barton & Loguidice, D.P.C.

TRACK REMOVAL DETAILS - 1

SCALE: AS SHOWN
DATE ISSUED: 9/2017
DRAWING TR-1

DESIGNED BY
DRAFTED BY
CHECKED BY
CHECKED BY
IN CHARGE OF

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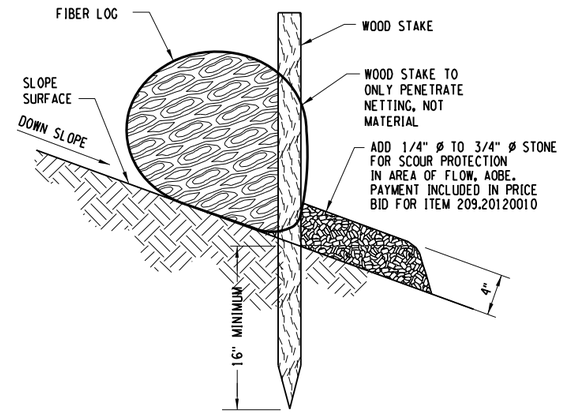
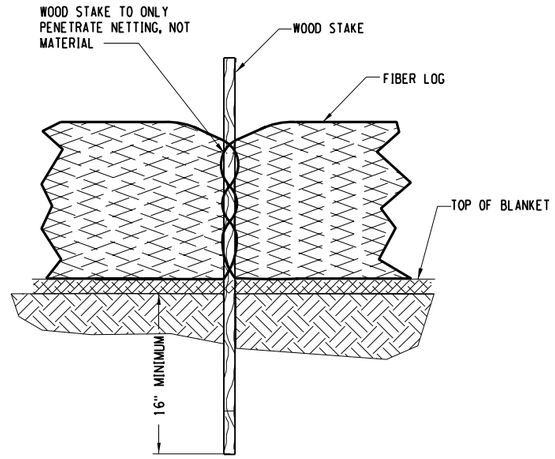


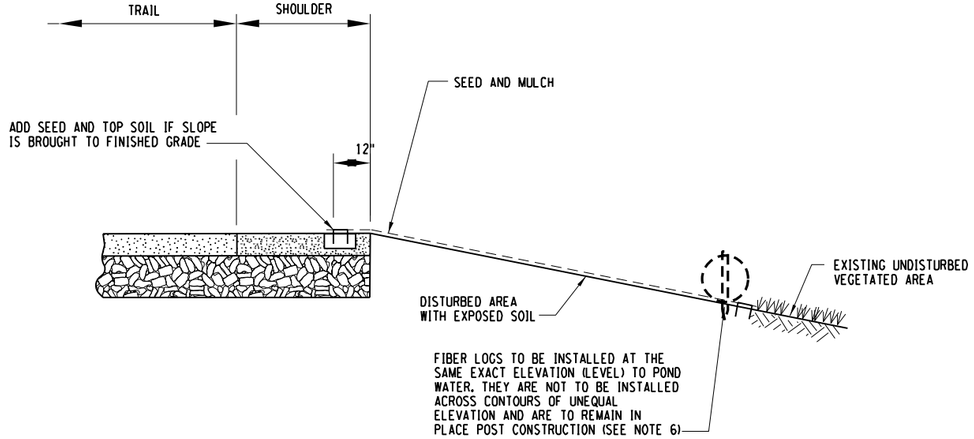
FIBER LOG STAKE DETAIL (ON BARE SOIL)

N.T.S.



FIBER LOG STAKE DETAIL (FRONT VIEW)

N.T.S.



EROSION AND SEDIMENT CONTROL FOR ALL DISTURBED AREAS TEMPORARY OR PERMANENT

N.T.S.

NOTES:

1. ITEMS IN THIS DETAIL MAY APPEAR EXAGGERATED TO SHOW DETAIL.
2. IF SLOPE IS BROUGHT TO FINISHED GRADE, PERMANENT TOP SOIL AND SEEDING SHALL BE INSTALLED PRIOR TO INSTALLING ITEM 209.2103 - SOIL STABILIZERS, CLASS IV TYPE C. IF SLOPES ARE NOT BROUGHT TO FINISH GRADE THEY ARE TO BE TREATED WITH ITEM 209.1003 - TEMPORARY SEED AND MULCH.
3. AS PART OF FINAL STABILIZATION, WOODEN STAKES TO BE REMOVED AND FIBER LOG MULCH NETTING CUT OPEN ALONG ENTIRE LENGTH.
4. USE STRAW MULCH FOR EROSION PREVENTION

FIBER LOG CHECK DAM APPLICATION NOTES:

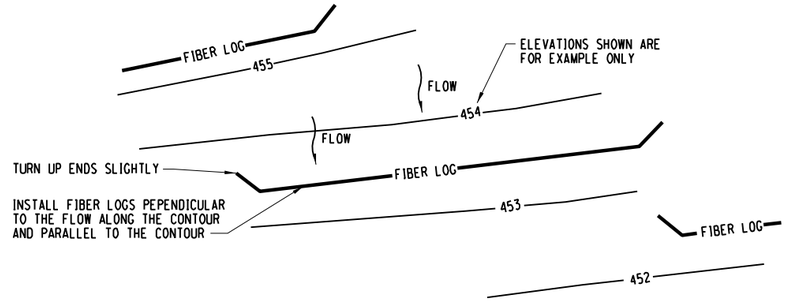
A. THE PRIMARY PURPOSE OF A CHECK DAM IS TO REDUCE EROSION IN A CHANNEL BY REDUCING FLOW VELOCITY IN THE CHANNEL.

B. CHECK DAMS WILL CAPTURE SEDIMENT THAT FALLS OUT OF SUSPENSION BEHIND THE CHECK DAM DUE TO DECREASED VELOCITY.

C. CHECK DAMS ARE NOT INTENDED TO, AND WILL NOT FILTER SEDIMENT FROM TURBID WATER.

NOTES:

1. DRAINAGE AREAS:
   MAXIMUM DRAINAGE AREA TRIBUTARY TO FIBER LOG CHECK DAM SHALL BE 1 ACRE. MAXIMUM DRAINAGE AREA TRIBUTARY TO PREFABRICATED CHECK DAM SHALL BE ½ ACRE.
2. POSTS MAY BE 1¼" x 1¼" (MIN.) HARDWOOD, 1½" x 3½" (MIN.) SOFTWOOD. ADDITIONAL POSTS ARE REQUIRED AT THE OUTER EDGES OF DITCH WIDTH.
3. THE FIBER LOG SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC AS SHOWN.
4. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT OF THE FIBER LOG. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.



FIBER LOG PLAN EXAMPLE

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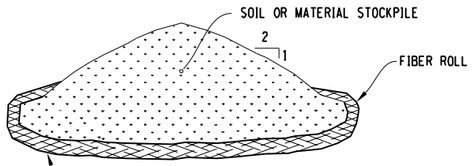
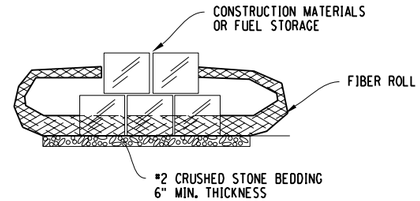


EXCAVATED AND IMPORTED SOIL AND MATERIAL STOCKPILE

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE. THE AREA SHALL NOT BE WITHIN THE DRIPLINE OR CANOPY OF EXISTING TREES. THE LOCATION SHALL BE AS NOTED ON THE DRAWINGS. DREDGED OR EXCAVATED MATERIALS SHALL BE PLACED UPON SILT FENCE FABRIC.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2(H) TO 1(V).
3. FIBER LOGS SHALL BE PLACED FIVE (5)-FEET DOWNSLOPE OF EACH PILE. UPON COMPLETION OF SOIL STOCKPILING, TOPSOIL SHALL BE STABILIZED WITH TEMPORARY SEED AND MULCH IF NOT TO BE DISTURBED/UTILIZED WITHIN FOURTEEN (14) DAYS.



FUEL, EQUIPMENT, OR MATERIAL STORAGE AREA

1. AREA CHOSEN FOR STORAGE OPERATIONS SHALL BE DRY AND STABLE. THE AREA SHALL NOT BE WITHIN THE DRIPLINE OR CANOPY OF TREES. THE LOCATION SHALL BE AS NOTED ON THE DRAWINGS.
2. NO STOCKPILE AREA SHALL BE LOCATED WITHIN FIFTY (50) FEET OF SURFACE WATER, FLOODPLAIN, SLOPE, DRAINAGE FACILITY OR ROADWAY.
3. IF STABLE SURFACE NOT AVAILABLE, THE TOP SIX (6) INCHES OF NATIVE MATERIAL SHALL BE EXCAVATED FROM THE MATERIAL/FUEL STORAGE AREA AND STOCKPILED TO REUSE FOR RESTORATION OF THIS AREA. IN THE AREA EXCAVATED, PLACE SEPARATION FABRIC AND SIX (6) INCHES OF #2 CRUSHED STONE BEDDING, SEE SPECIFICATIONS. IF APPROVED BY THE ENGINEER, USE OF EXISTING GRAVEL AREAS MAY BE USED IN LIEU OF EXCAVATION, STONE, AND FABRIC.
4. FIBER LOGS SHALL BE PLACED FIVE (5) FEET DOWN SLOPE OF STORAGE AREA.
5. REMOVE ALL MATERIALS INCLUDING STONE AND FABRIC WHEN NEED FOR STORAGE IS OVER. RESTORE TO ORIGINAL GRADE WITH STOCKPILED EXCAVATED SOIL (NO FOREIGN DEBRIS).

CONSTRUCTION STOCKPILE/STORAGE AREA DETAIL

N.T.S.

PREPARED BY: BARTON & LOGUIDICE, D.P.C.
ON :

NO.	DATE	BY	REVISION
XX			

Barton & Loguidice, D.P.C.

ASHOKAN RAIL TRAIL

ULSTER COUNTY

EROSION AND SEDIMENT CONTROL DETAILS - 1

SCALE: AS SHOWN

DATE ISSUED: 9/2017

DRAWING ESCD-1

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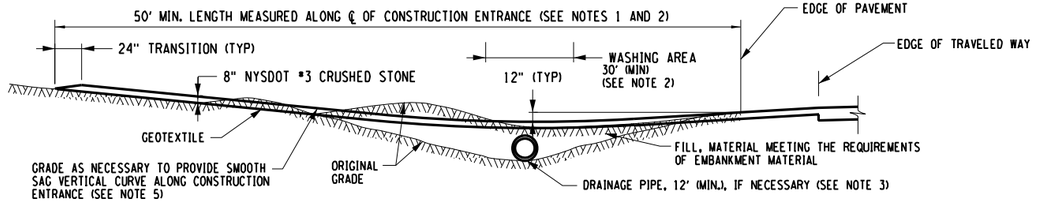
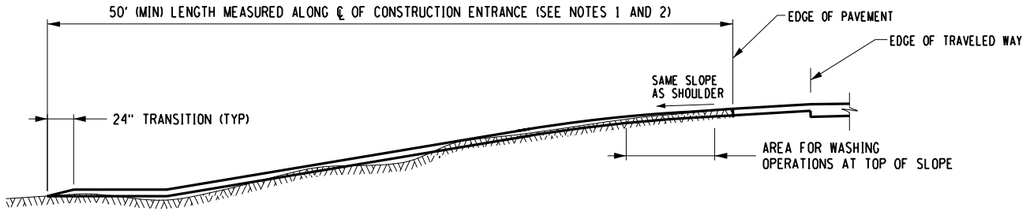
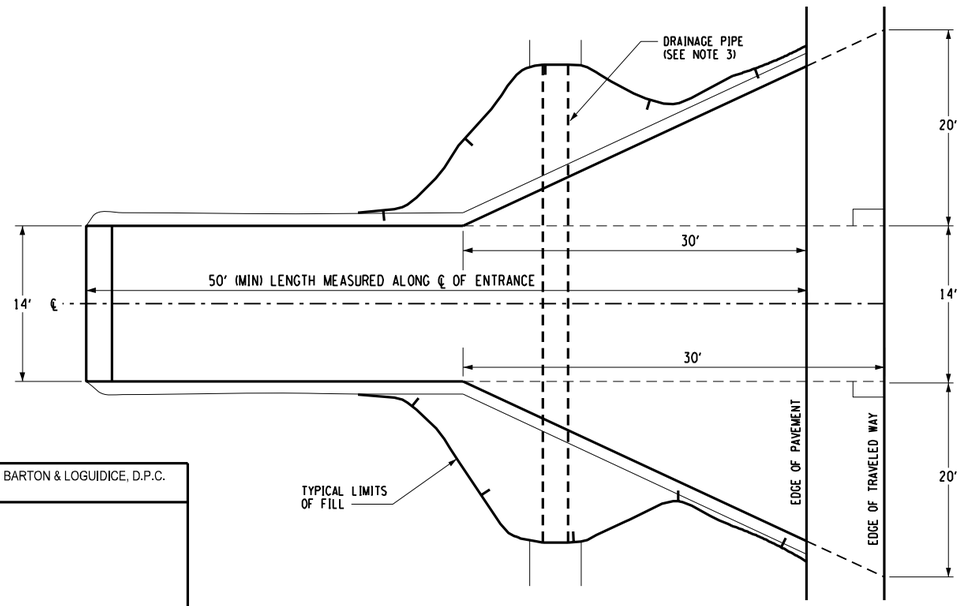


TYPICAL CONSTRUCTION ENTRANCE PROFILE
(CUT AND DITCH SECTIONS)



TYPICAL CONSTRUCTION ENTRANCE PROFILE
(FILL SECTIONS)



TYPICAL CONSTRUCTION ENTRANCE PLAN
(CUT/DITCH AND FILL SECTIONS)

CONSTRUCTION ENTRANCES:

APPLICATION NOTES:

A. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY OR STREETS.

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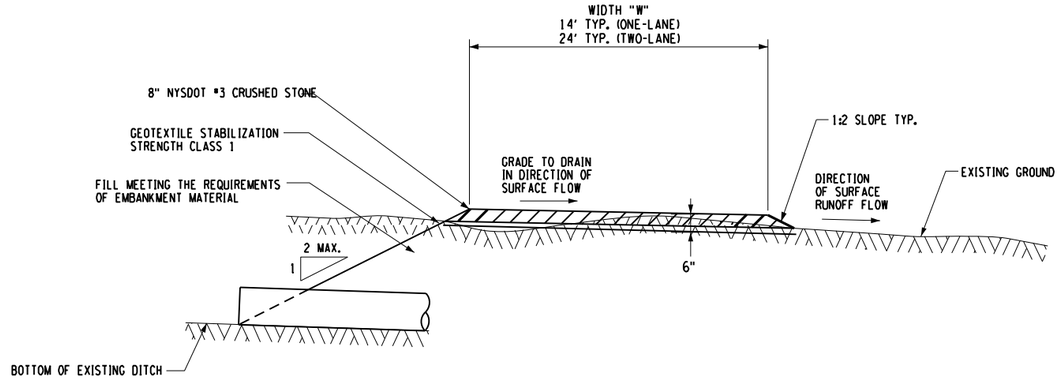
2. A 30' WASH AREA SHALL BE PROVIDED. ADDITIONAL GRADING MAY BE REQUIRED TO PROVIDE WASHING AREAS.
3. PROPOSED DRAINAGE PIPES SHALL BE SIZED WITH SUFFICIENT CAPACITY TO CARRY DITCH FLOWS. ALTERNATE WAYS OF TRANSPORTING DITCH DRAINAGE ACROSS CONSTRUCTION ENTRANCES MAY BE PROPOSED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER.
4. THE CONTRACTOR SHALL GRADE TO PREPARE AND SMOOTH ORIGINAL GROUND FOR PLACEMENT OF 8" OF #3 CRUSHED STONE ENTRANCE MATERIAL UP TO THE EDGE OF PAVEMENT.
5. ALL WORK TO CONSTRUCT THE STABILIZED ENTRANCE, INCLUDING GRADING, DRAINAGE PIPE, EXCAVATION, FILL, GEOTEXTILE AND CRUSHED STONE OR GRAVEL SHALL BE INCLUDED IN THE UNIT PRICE BID.
6. 100% CRUSHED STONE MEETING THE NYSDOT #3 STONE GRADATION SHALL BE UTILIZED FOR CONSTRUCTION ENTRANCES



TYPICAL CONSTRUCTION ENTRANCE SECTION

PREPARED BY: BARTON & LOGUIDICE, D.P.C.
ON :

NO.	DATE	BY	REVISION

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ASHOKAN RAIL TRAIL
ULSTER COUNTY

EROSION AND SEDIMENT CONTROL DETAILS - 2

SCALE: NONE
DATE ISSUED: 9/2017
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Appendix O

Erosion and Sediment Control Practices and Details

STANDARD AND SPECIFICATIONS FOR TOPSOILING

Definition

Spreading a specified quality and quantity of topsoil materials on graded or constructed subsoil areas.

Purpose

To provide acceptable plant cover growing conditions, thereby reducing erosion; to reduce irrigation water needs; and to reduce the need for nitrogen fertilizer application.

Conditions Where Practice Applies

Topsoil is applied to subsoils that are droughty (low available moisture for plants), stony, slowly permeable, salty or extremely acid. It is also used to backfill around shrub and tree transplants. This standard does not apply to wetland soils.

Design Criteria

1. Preserve existing topsoil in place where possible, thereby reducing the need for added topsoil.

2. Conserve by stockpiling topsoil and friable fine textured subsoils that must be stripped from the excavated site and applied after final grading where vegetation will be established.

3. Refer to USDA Soil Conservation Service (presently Natural Resource Conservation Service) soil surveys or soil interpretation record sheets for further soil texture information for selecting appropriate design topsoil depths.

Site Preparation

1. As needed, install erosion control practices such as diversions, channels, sediment traps, and stabilizing measures, or maintain if already installed.

2. Complete rough grading and final grade, allowing for depth of topsoil to be added.

3. Scarify all compact, slowly permeable, medium and fine textured subsoil areas. Scarify at approximately right angles to the slope direction in soil areas that are steeper than 5 percent. Areas that have been overly compacted shall be decompacted to a minimum depth of 12 inches with a deep ripper or chisel plow prior to topsoiling.

4. Remove refuse, woody plant parts, stones over 3 inches in diameter, and other litter.

Topsoil Materials

1. Topsoil shall have at least 6 percent by weight of fine textured stable organic material, and no greater than 20 percent. Muck soil shall not be considered topsoil.

2. Topsoil shall have not less than 20 percent fine textured material (passing the NO. 200 sieve) and not more than 15 percent clay.

3. Topsoil treated with soil sterilants or herbicides shall be so identified to the purchaser.

4. Topsoil shall be relatively free of stones over 1 1/2 inches in diameter, trash, noxious weeds such as nut sedge and quackgrass, and will have less than 10 percent gravel.

5. Topsoil containing soluble salts greater than 500 parts per million shall not be used.

Application and Grading

1. Topsoil shall be distributed to a uniform depth over the area. It shall not be placed when it is partly frozen, muddy, or on frozen slopes or over ice, snow, or standing water puddles.

2. Topsoil placed and graded on slopes steeper than 5 percent shall be promptly fertilized, seeded, mulched, and stabilized by “tracking” with suitable equipment.

3. Apply topsoil in the following amounts:

Site Conditions	Intended Use	Minimum Topsoil Depth
1. Deep sand or loamy sand	Mowed lawn	6 in.
	Tall legumes, unmowed	2 in.
	Tall grass, unmowed	1 in.
2. Deep sandy loam	Mowed lawn	5 in.
	Tall legumes, unmowed	2 in.
	Tall grass, unmowed	none
3. Six inches or more: silt loam, loam, or silt	Mowed lawn	4 in.
	Tall legumes, unmowed	1 in.
	Tall grass, unmowed	1 in.

STANDARD AND SPECIFICATIONS FOR MULCHING

Definition

Applying coarse plant residue or chips, or other suitable materials, to cover the soil surface.

Purpose

The primary purpose is to provide initial erosion control while a seeding or shrub planting is establishing. Mulch will conserve moisture and modify the surface soil temperature and reduce fluctuation of both. Mulch will prevent soil surface crusting and aid in weed control. Mulch is also used alone for temporary stabilization in non-growing months.

Conditions Where Practice Applies

On soils subject to erosion and on new seedings and shrub plantings. Mulch is useful on soils with low infiltration rates by retarding runoff.

Criteria

Site preparation prior to mulching requires the installation of necessary erosion control or water management practices and drainage systems.

Slope, grade and smooth the site to fit needs of selected mulch products.

Remove all undesirable stones and other debris to meet the needs of the anticipated land use and maintenance required.

Apply mulch after soil amendments and planting is accomplished or simultaneously if hydroseeding is used.

Select appropriate mulch material and application rate or material needs. Determine local availability.

Select appropriate mulch anchoring material.

NOTE: The best combination for grass/legume establishment is straw (cereal grain) mulch applied at 2 ton/ acre (90 lbs./1000sq.ft.) and anchored with wood fiber mulch (hydromulch) at 500 – 750 lbs./acre (11 – 17 lbs./1000 sq. ft.). The wood fiber mulch must be applied through a hydroseeder immediately after mulching.

Table 3.7
Guide to Mulch Materials, Rates, and Uses

Mulch Material	Quality Standards	per 1000 Sq. Ft.	per Acre	Depth of Application	Remarks
Wood chips or shavings	Air-dried. Free of objectionable coarse material	500-900 lbs.	10-20 tons	2-7"	Used primarily around shrub and tree plantings and recreation trails to inhibit weed competition. Resistant to wind blowing. Decomposes slowly.
Wood fiber cellulose (partly digested wood fibers)	Made from natural wood usually with green dye and dispersing agent	50 lbs.	2,000 lbs.	—	Apply with hydromulcher. No tie down required. Less erosion control provided than 2 tons of hay or straw.
Gravel, Crushed Stone or Slag	Washed; Size 2B or 3A—1 1/2"	9 cu. yds.	405 cu. yds.	3"	Excellent mulch for short slopes and around plants and ornamentals. Use 2B where subject to traffic. (Approximately 2,000 lbs./cu. yd.). Frequently used over filter fabric for better weed control.
Hay or Straw	Air-dried; free of undesirable seeds & coarse materials	90-100 lbs. 2-3 bales	2 tons (100-120 bales)	cover about 90% surface	Use small grain straw where mulch is maintained for more than three months. Subject to wind blowing unless anchored. Most commonly used mulching material. Provides the best micro-environment for germinating seeds.
Jute twisted yarn	Undyed, unbleached plain weave. Warp 78 ends/yd., Weft 41 ends/ yd. 60-90 lbs./roll	48" x 50 yds. or 48" x 75 yds.	—	—	Use without additional mulch. Tie down as per manufacturers specifications. Good for center line of concentrated water flow.
Excelsior wood fiber mats	Interlocking web of excelsior fibers with photodegradable plastic netting	8" x 100" 2-sided plastic, 48" x 180" 1-sided plastic	—	—	Use without additional mulch. Excellent for seeding establishment. Tie down as per manufacturers specifications. Approximately 72 lbs./roll for excelsior with plastic on both sides. Use two sided plastic for centerline of waterways.
Compost	Up to 3" pieces, moderately to highly stable	3-9 cu. yds.	134-402 cu. yds.	1-3"	Coarser textured mulches may be more effective in reducing weed growth and wind erosion.
Straw or coconut fiber, or combination	Photodegradable plastic net on one or two sides	Most are 6.5 ft. x 3.5 ft.	81 rolls	—	Designed to tolerate higher velocity water flow, centerlines of waterways, 60 sq. yds. per roll.

Table 3.8
Mulch Anchoring Guide

Anchoring Method or Material	Kind of Mulch to be Anchored	How to Apply
1. Peg and Twine	Hay or straw	After mulching, divide areas into blocks approximately 1 sq. yd. in size. Drive 4-6 pegs per block to within 2" to 3" of soil surface. Secure mulch to surface by stretching twine between pegs in criss-cross pattern on each block. Secure twine around each peg with 2 or more tight turns. Drive pegs flush with soil. Driving stakes into ground tightens the twine.
2. Mulch netting	Hay or straw	Staple the light-weight paper, jute, wood fiber, or plastic nettings to soil surface according to manufacturer's recommendations. Should be biodegradable. Most products are not suitable for foot traffic.
3. Wood cellulose fiber	Hay or straw	Apply with hydroseeder immediately after mulching. Use 500 lbs. wood fiber per acre. Some products contain an adhesive material ("tackifier"), possibly advantageous.
4. Mulch anchoring tool	Hay or straw	Apply mulch and pull a mulch anchoring tool (blunt, straight discs) over mulch as near to the contour as possible. Mulch material should be "tucked" into soil surface about 3".
5. Tackifier	Hay or straw	Mix and apply polymeric and gum tackifiers according to manufacturer's instructions. Avoid application during rain. A 24-hour curing period and a soil temperature higher than 45^0 Fahrenheit are required.

STANDARD AND SPECIFICATIONS FOR PROTECTING VEGETATION DURING CONSTRUCTION

Definition

The protection of trees, shrubs, ground cover and other vegetation from damage by construction equipment.

Purpose

To preserve existing vegetation determined to be important for soil erosion control, water quality protection, shade, screening, buffers, wildlife habitat, wetland protection, and other values.

Condition Where Practice Applies

On planned construction sites where valued vegetation exists and needs to be preserved.

Design Criteria

1. Planning Considerations

   A. Inventory:

      1) Property boundaries, topography, vegetation and soils information should be gathered. Identify potentially high erosion areas, areas with tree windthrow potential, etc. A vegetative cover type map should be made on a copy of a topographic map which shows other natural and manmade features. Vegetation that is desirable to preserve because of its value for screening, shade, critical erosion control, endangered species, aesthetics, etc., should be identified and marked on the map.

      2) Based upon this data, general statements should be prepared about the present condition, potential problem areas, and unique features of the property.

   B. Planning:

      1) After engineering plans (plot maps) are prepared, another field review should take place and recommendations made for the vegetation to be saved. Minor adjustments in location of roads, dwellings, and utilities may be needed. Construction on steep slopes, erodible soils, wetlands, and streams should be avoided. Clearing limits should be delineated (See Section 2).

      2) Areas to be seeded and planted should be identified. Remaining vegetation should blend with their surroundings and/or provide special function such as a filter strip, buffer zone, or screen.

      3) Trees and shrubs of special seasonal interest, such as flowering dogwood, red maple, striped maple, serviceberry, or shadbush, and valuable potential shade trees should be identified and marked for special protective treatment as appropriate.

      4) Trees to be cut should be marked on the plans. If timber can be removed for salable products, a forester should be consulted for marketing advice.

      5) Trees that may become a hazard to people, personal property, or utilities should be removed. These include trees that are weak-wooded, disease-prone, subject to windthrow, or those that have severely damaged root systems.

      6) The vigor of remaining trees may be improved by a selective thinning. A forester should be consulted for implementing this practice.

2. Measures to Protect Vegetation

   A. Limit soil placement over existing tree and shrub roots to a maximum of 3 inches. Soils with loamy texture and good structure should be used.

   B. Use retaining walls and terraces to protect roots of trees and shrubs when grades are lowered. Lowered grades should start no closer than the dripline of the tree. For narrow-canopied trees and shrubs, the stem diameter in inches is converted to feet and doubled, such that a 10 inch tree should be protected to 20 feet.

C. Trenching across tree root systems should be the same minimum distance from the trunk, as in “B”. Tunnels under root systems for underground utilities should start 18 inches or deeper below the normal grounds surface. Tree roots which must be severed should be cut clean. Backfill material that will be in contact with the roots should be topsoil or a prepared planting soil mixture.

D. Construct sturdy fences, or barriers, of wood, steel, or other protective material around valuable vegetation for protection from construction equipment. Place barriers far enough away from trees, but not less than the specifications in "B", so that tall equipment such as backhoes and dump trucks do not contact tree branches.

E. Construction limits should be identified and clearly marked to exclude equipment.

F. Avoid spills of oil/gas and other contaminants.

G. Obstructive and broken branches should be pruned properly. The branch collar on all branches whether living or dead should not be damaged. The 3 or 4 cut method should be used on all branches larger than two inches at the cut. First cut about one-third the way through the underside of the limb (about 6-12 inches from the tree trunk). Then (approximately an inch further out) make a second cut through the limb from the upper side. When the branch is removed, there is no splintering of the main tree trunk. Remove the stub. If the branch is larger than 5-6 inches in diameter, use the four cut system. Cuts 1 and 2 remain the same and cut 3 should be from the underside of the limb, on the outside of the branch collar. Cut 4 should be from the top and in alignment with the 3rd cut. Cut 3 should be 1/4 to 1/3 the way through the limb. This will prevent the bark from peeling down the trunk. Do not paint the cut surface.

H. Penalties for damage to valuable trees, shrubs, and herbaceous plants should be clearly spelled out in the contract.

STANDARD AND SPECIFICATIONS
FOR
FIBER ROLL

Definition

A fiber roll is a coir (coconut fiber), straw, or excelsior woven roll encased in netting of jute, nylon, or burlap.

Purpose

To dissipate energy along streambanks, channels, and bodies of water and reduce sheet flow on slopes.

Conditions Where Practice Applies

Fiber rolls are used where the water surface levels are relatively constant. Artificially controlled streams for hydropower are not good candidates for this technique. The rolls provide a good medium for the introduction of herbaceous vegetation. Planting in the fiber roll is appropriate where the roll will remain continuously wet.

Design Criteria

1. The roll is placed in a shallow trench dug below baseflow or in a 4 inch trench on the slope contour and anchored by 2" x 2", 3-foot long posts driven on each side of the roll (see Figure 4.9).

2. The roll is contained by a 9-gauge non-galvanized wire placed over the roll from post to post. Braided nylon rope (1/8" thick) may be used.

3. The anchor posts shall be spaced laterally 4 feet on center on both sides of the roll, staggered, and driven down to the top of the roll.

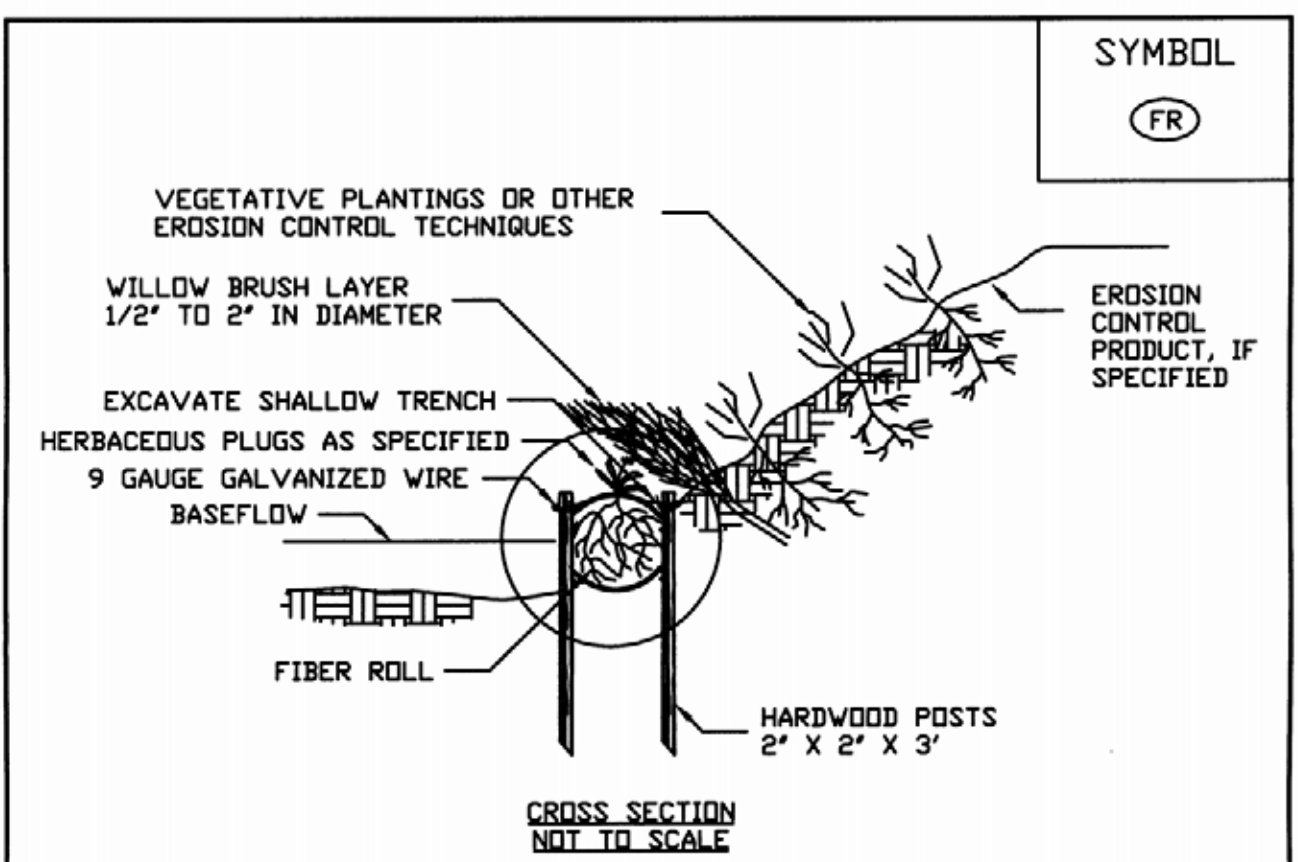
4. Soil is placed behind the roll and planted with suitable herbaceous or woody vegetation. If the roll will be continuously saturated, wetland plants may be planted into voids created in the upper surface of the roll.

5. Where water levels may fall below the bottom edge of the roll, a brush layer of willow should be installed so as to lay across the top edge of the roll.

Maintenance

Due to the susceptibility of plant materials to the physical constraints of the site, climate conditions, and animal populations, it is necessary to inspect installations frequently. This is especially important during the first year or two of establishment. Plant materials missing or damaged should be replaced as soon as possible. Sloughs or breaks in drainage pattern should be reestablished for the site as quickly as possible to maintain stability.

Figure 4.9
Fiber Roll



CONSTRUCTION SPECIFICATIONS

1. EXCAVATE A SHALLOW TRENCH SLIGHTLY BELOW BASEFLOW OR A 4" TRENCH ON SLOPE CONTOURS.
2. PLACE THE ROLL IN THE TRENCH AND ANCHOR WITH 2" x 2" POSTS PLACED ON BOTH SIDES OF THE ROLL AND SPACED LATERALLY ON 2' TO 4' CENTERS. TRIM THE TOP OF THE POSTS EVEN WITH THE EDGE OF THE ROLL, IF NECESSARY.
3. NOTCH THE POSTS AND TIE TOGETHER, ACROSS THE ROLL, WITH 9 GAUGE GALVANIZED WIRE OR 1/8" DIAMETER BRAIDED NYLON ROPE..
4. PLACE SOIL EXCAVATED FROM THE TRENCH BEHIND THE ROLL AND HAND TAMP. PLANT WITH SUITABLE HERBACEOUS OR WOODY VEGETATION AS SPECIFIED ELSEWHERE IN THE CONTRACT DOCUMENTS. VEGETATION SHALL BE PLACED IMMEDIATELY ADJACENT TO THE ROLL TO PROMOTE ROOT GROWTH INTO THE FIBER. HERBACEOUS VEGETATION, IF SPECIFIED, SHALL BE PLANTED INTO THE FIBER ROLL.

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

FIBER ROLL

STANDARD AND SPECIFICATIONS FOR CONCRETE TRUCK WASHOUT

Definition & Scope

A temporary excavated or above ground lined constructed pit where concrete truck mixers and equipment can be washed after their loads have been discharged, to prevent highly alkaline runoff from entering storm drainage systems or leaching into soil.

Conditions Where Practice Applies

Washout facilities shall be provided for every project where concrete will be poured or otherwise formed on the site. This facility will receive highly alkaline wash water from the cleaning of chutes, mixers, hoppers, vibrators, placing equipment, trowels, and screeds. Under no circumstances will wash water from these operations be allowed to infiltrate into the soil or enter surface waters.

Design Criteria

Capacity: The washout facility should be sized to contain solids, wash water, and rainfall and sized to allow for the evaporation of the wash water and rainfall. Wash water shall be estimated at 7 gallons per chute and 50 gallons per hopper of the concrete pump truck and/or discharging drum. The minimum size shall be 8 feet by 8 feet at the bottom and 2 feet deep. If excavated, the side slopes shall be 2 horizontal to 1 vertical.

Location: Locate the facility a minimum of 100 feet from drainage swales, storm drain inlets, wetlands, streams and other surface waters. Prevent surface water from entering the structure except for the access road. Provide appropriate access with a gravel access road sloped down to the structure. Signs shall be placed to direct drivers to the facility after their load is discharged.

Liner: All washout facilities will be lined to prevent leaching of liquids into the ground. The liner shall be plastic sheeting with a minimum thickness of 10 mils with no holes or tears, and anchored beyond the top of the pit with an earthen berm, sand bags, stone, or other structural appurtenance except at the access point.

If pre-fabricated washouts are used they must ensure the capture and containment of the concrete wash and be sized based on the expected frequency of concrete pours. They shall be sited as noted in the location criteria.

Maintenance

- All concrete washout facilities shall be inspected daily. Damaged or leaking facilities shall be deactivated and repaired or replaced immediately. Excess rainwater that has accumulated over hardened concrete should be pumped to a stabilized area, such as a grass filter strip.
- Accumulated hardened material shall be removed when 75% of the storage capacity of the structure is filled. Any excess wash water shall be pumped into a containment vessel and properly disposed of off site.
- Dispose of the hardened material off-site in a construction/demolition landfill. On-site disposal may be allowed if this has been approved and accepted as part of the projects SWPPP. In that case, the material should be recycled as specified, or buried and covered with a minimum of 2 feet of clean compacted earthfill that is permanently stabilized to prevent erosion.
- The plastic liner shall be replaced with each cleaning of the washout facility.
- Inspect the project site frequently to ensure that no concrete discharges are taking place in non-designated areas.

STANDARD AND SPECIFICATIONS FOR ROCK OUTLET PROTECTION

Definition & Scope

A **permanent** section of rock protection placed at the outlet end of the culverts, conduits, or channels to reduce the depth, velocity, and energy of water, such that the flow will not erode the receiving downstream reach.

Conditions Where Practice Applies

This practice applies where discharge velocities and energies at the outlets of culverts, conduits, or channels are sufficient to erode the next downstream reach. This applies to:

1. Culvert outlets of all types.
2. Pipe conduits from all sediment basins, dry storm water ponds, and permanent type ponds.
3. New channels constructed as outlets for culverts and conduits.

Design Criteria

The design of rock outlet protection depends entirely on the location. Pipe outlet at the top of cuts or on slopes steeper than 10 percent, cannot be protected by rock aprons or riprap sections due to re-concentration of flows and high velocities encountered after the flow leaves the apron.

Many counties and state agencies have regulations and design procedures already established for dimensions, type and size of materials, and locations where outlet protection is required. Where these requirements exist, they shall be followed.

Tailwater Depth

The depth of tailwater immediately below the pipe outlet must be determined for the design capacity of the pipe. If the tailwater depth is less than half the diameter of the outlet pipe, and the receiving stream is wide enough to accept divergence of the flow, it shall be classified as a Minimum Tailwater Condition; see Figure 3.16 on page 3.42 as an example. If the tailwater depth is greater than half the pipe diameter and the receiving stream will continue to confine the flow, it shall be classified as a Maximum Tailwater Condition; see Figure 3.17 on page 3.43 as an example. Pipes which outlet onto flat areas with no defined channel may be assumed to have a Minimum Tailwater Condition; see Figure 3.16 on page 3.42 as an example.

Apron Size

The apron length and width shall be determined from the curves according to the tailwater conditions:

Minimum Tailwater – Use Figure 3.16 on page 3.42
Maximum Tailwater – Use Figure 3.17 on page 3.43

If the pipe discharges directly into a well defined channel, the apron shall extend across the channel bottom and up the channel banks to an elevation one foot above the maximum tailwater depth or to the top of the bank, whichever is less.

The upstream end of the apron, adjacent to the pipe, shall have a width two (2) times the diameter of the outlet pipe, or conform to pipe end section if used.

Bottom Grade

The outlet protection apron shall be constructed with no slope along its length. There shall be no overfall at the end of the apron. The elevation of the downstream end of the apron shall be equal to the elevation of the receiving channel or adjacent ground.

Alignment

The outlet protection apron shall be located so that there are no bends in the horizontal alignment.

Materials

The outlet protection may be done using rock riprap, grouted riprap, or gabions. Outlets constructed on the bank of a stream or wetland shall not use grouted rip-rap, gabions or concrete.

Riprap shall be composed of a well-graded mixture of rock size so that 50 percent of the pieces, by weight, shall be larger than the d_{50} size determined by using the charts. A

well-graded mixture, as used herein, is defined as a mixture composed primarily of larger rock sizes, but with a sufficient mixture of other sizes to fill the smaller voids between the rocks. The diameter of the largest rock size in such a mixture shall be 1.5 times the d_{50} size.

Thickness

The minimum thickness of the riprap layer shall be 1.5 times the maximum rock diameter for d_{50} of 15 inches or less; and 1.2 times the maximum rock size for d_{50} greater than 15 inches. The following chart lists some examples:

D_{50} (inches)	d_{max} (inches)	Minimum Blanket Thickness (inches)
4	6	9
6	9	14
9	14	20
12	18	27
15	22	32
18	27	32
21	32	38
24	36	43

Rock Quality

Rock for riprap shall consist of field rock or rough unhewn quarry rock. The rock shall be hard and angular and of a quality that will not disintegrate on exposure to water or weathering. The specific gravity of the individual rocks shall be at least 2.5.

Filter

A filter is a layer of material placed between the riprap and the underlying soil surface to prevent soil movement into and through the riprap. Riprap shall have a filter placed under it in all cases.

A filter can be of two general forms: a gravel layer or a plastic filter cloth. The plastic filter cloth can be woven or non-woven monofilament yarns, and shall meet these base requirements: thickness 20-60 mils, grab strength 90-120 lbs; and shall conform to ASTM D-1777 and ASTM D-1682.

Gravel filter blanket, when used, shall be designed by comparing particle sizes of the overlying material and the base material. Design criteria are available in Standard and Specification for Anchored Slope and Channel Stabilization on page 4.7.

Gabions

Gabions shall be made of hexagonal triple twist mesh with heavily galvanized steel wire. The maximum linear dimension of the mesh opening shall not exceed 4 ½ inches and the area of the mesh opening shall not exceed 10 square inches.

Gabions shall be fabricated in such a manner that the sides, ends, and lid can be assembled at the construction site into a rectangular basket of the specified sizes. Gabions shall be of single unit construction and shall be installed according to manufacturer's recommendations.

The area on which the gabion is to be installed shall be graded as shown on the drawings. Foundation conditions shall be the same as for placing rock riprap, and filter cloth shall be placed under all gabions. Where necessary, key, or tie, the structure into the bank to prevent undermining of the main gabion structure.

Maintenance

Once a riprap outlet has been installed, the maintenance needs are very low. It should be inspected after high flows for evidence of scour beneath the riprap or for dislodged rocks. Repairs should be made immediately.

Design Procedure

1. Investigate the downstream channel to assure that nonerosive velocities can be maintained.

2. Determine the tailwater condition at the outlet to establish which curve to use.

3. Use the appropriate chart with the design discharge to determine the riprap size and apron length required. It is noted that references to pipe diameters in the charts are based on full flow. For other than full pipe flow, the parameters of depth of flow and velocity must be used to adjust the design discharges.

4. Calculate apron width at the downstream end if a flare section is to be employed.

Design Examples are demonstrated in Appendix B.

Construction Specifications

1. The subgrade for the filter, riprap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.

2. The rock or gravel shall conform to the specified grad-

ing limits when installed respectively in the riprap or filter.

3. Filter cloth shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps, whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.

4. Rock for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The rock for riprap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogenous with the smaller rocks and spalls filling the voids between the larger rocks. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

Figure 3.16
Outlet Protection Design—Minimum Tailwater Condition Chart (Design of Outlet Protection from a Round Pipe Flowing Full, Minimum Tailwater Condition: $T_w < 0.5D_o$) (USDA - NRCS)

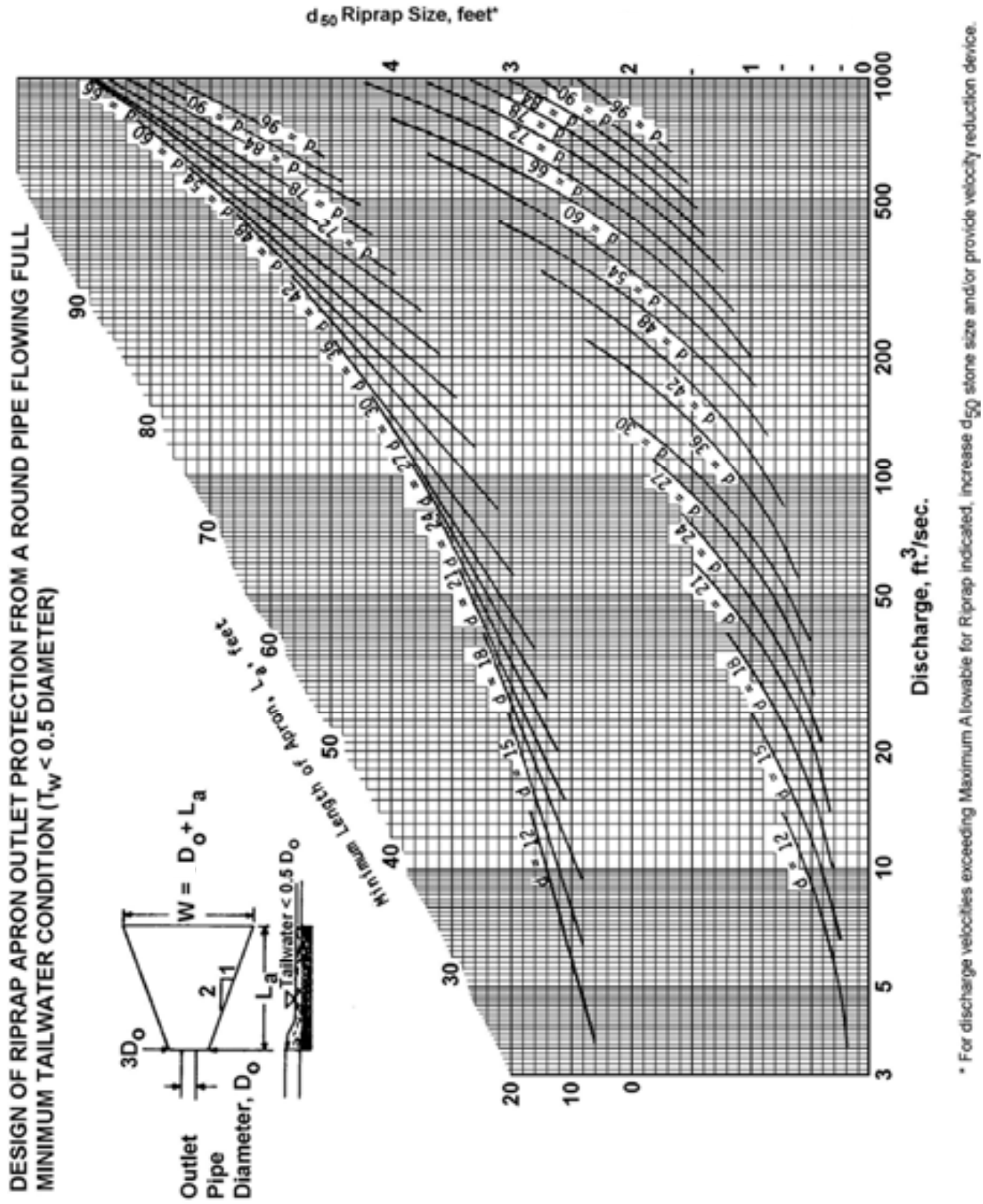


Figure 3.17
Outlet Protection Design—Maximum Tailwater Condition Chart (Design of Outlet Protection from a Round Pipe Flowing Full, Maximum Tailwater Condition: $T_w \geq 0.5D_o$) (USDA - NRCS)

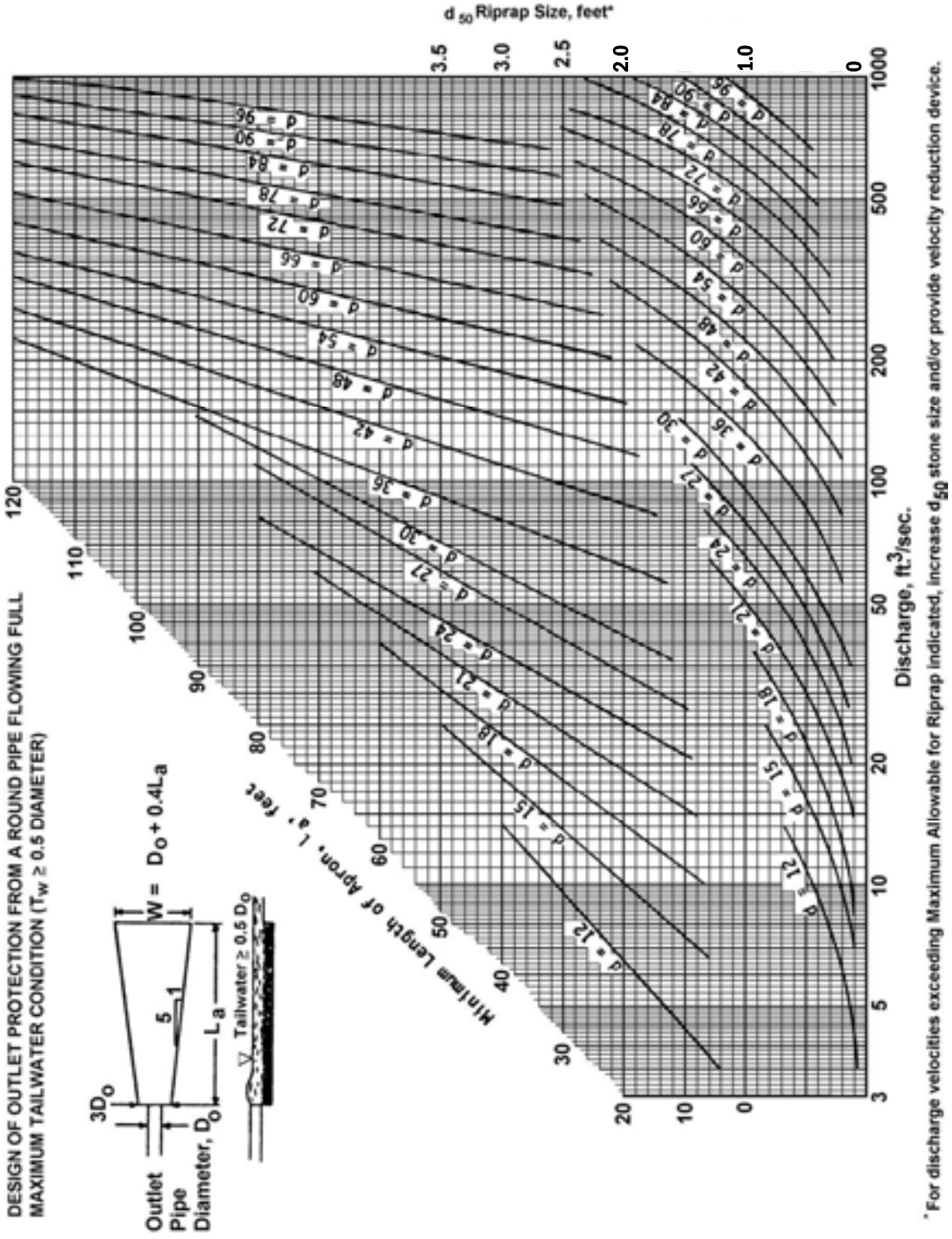


Figure 3.18
Riprap Outlet Protection Detail (1)

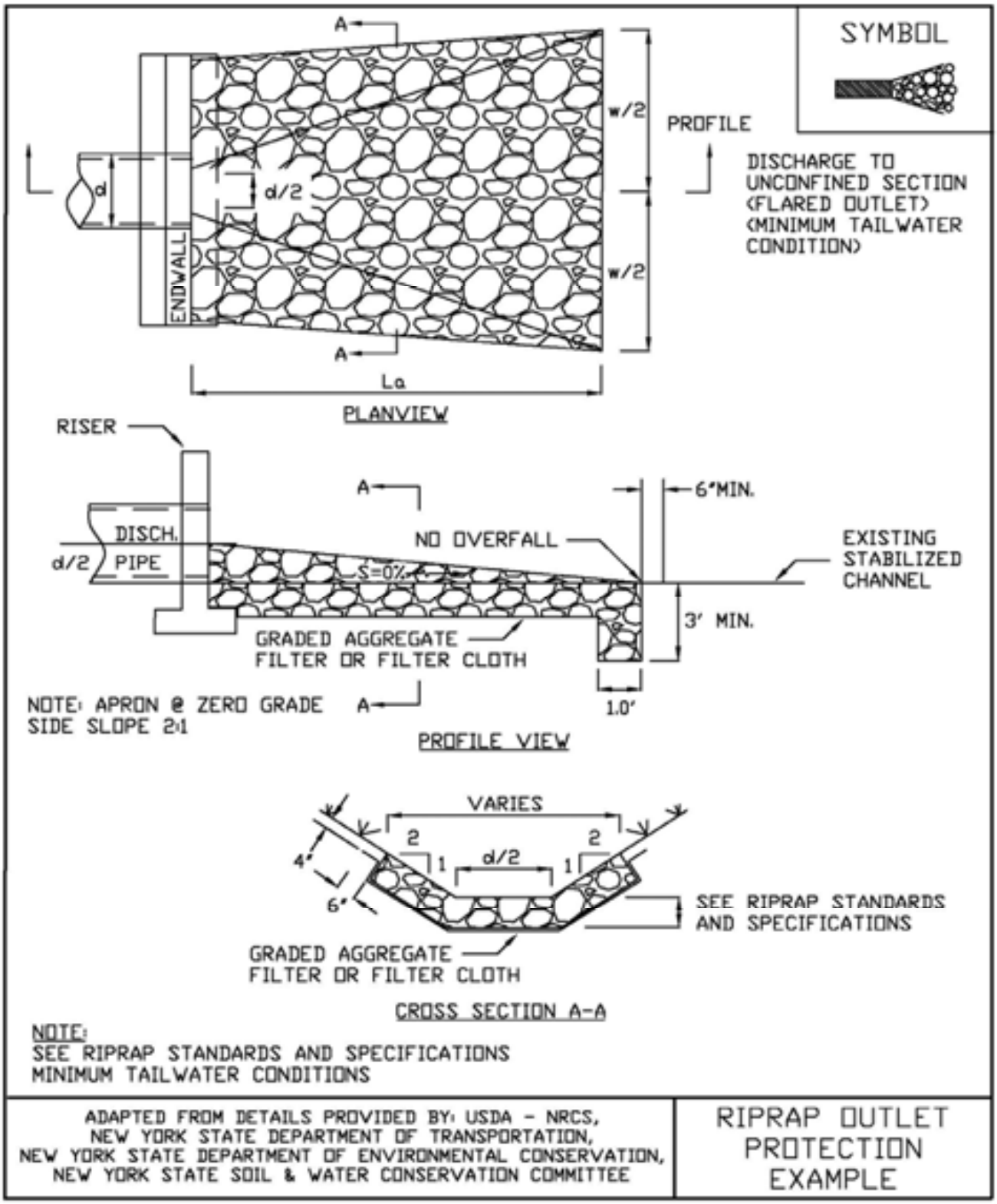


Figure 3.19
Riprap Outlet Protection Detail (2)

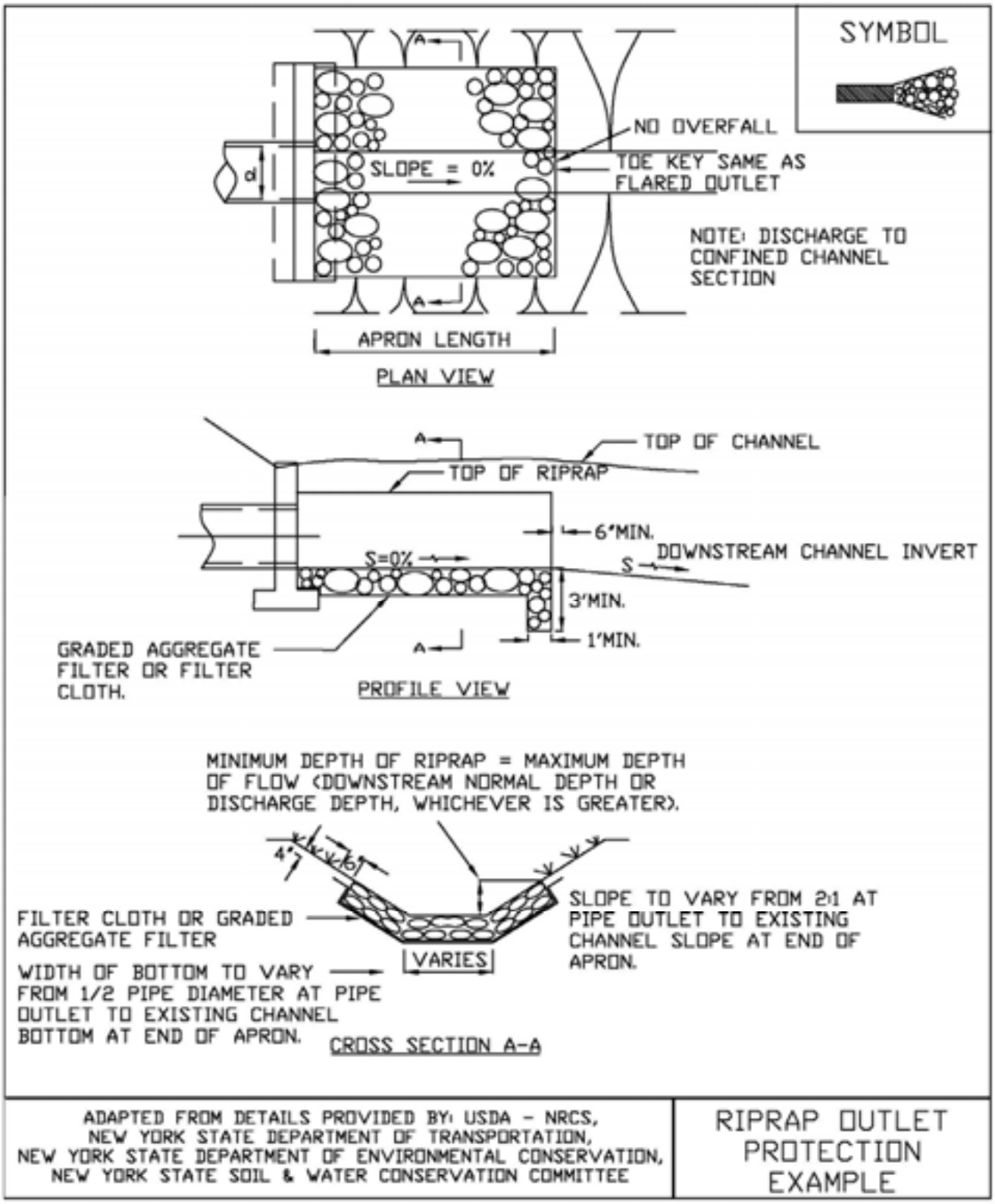
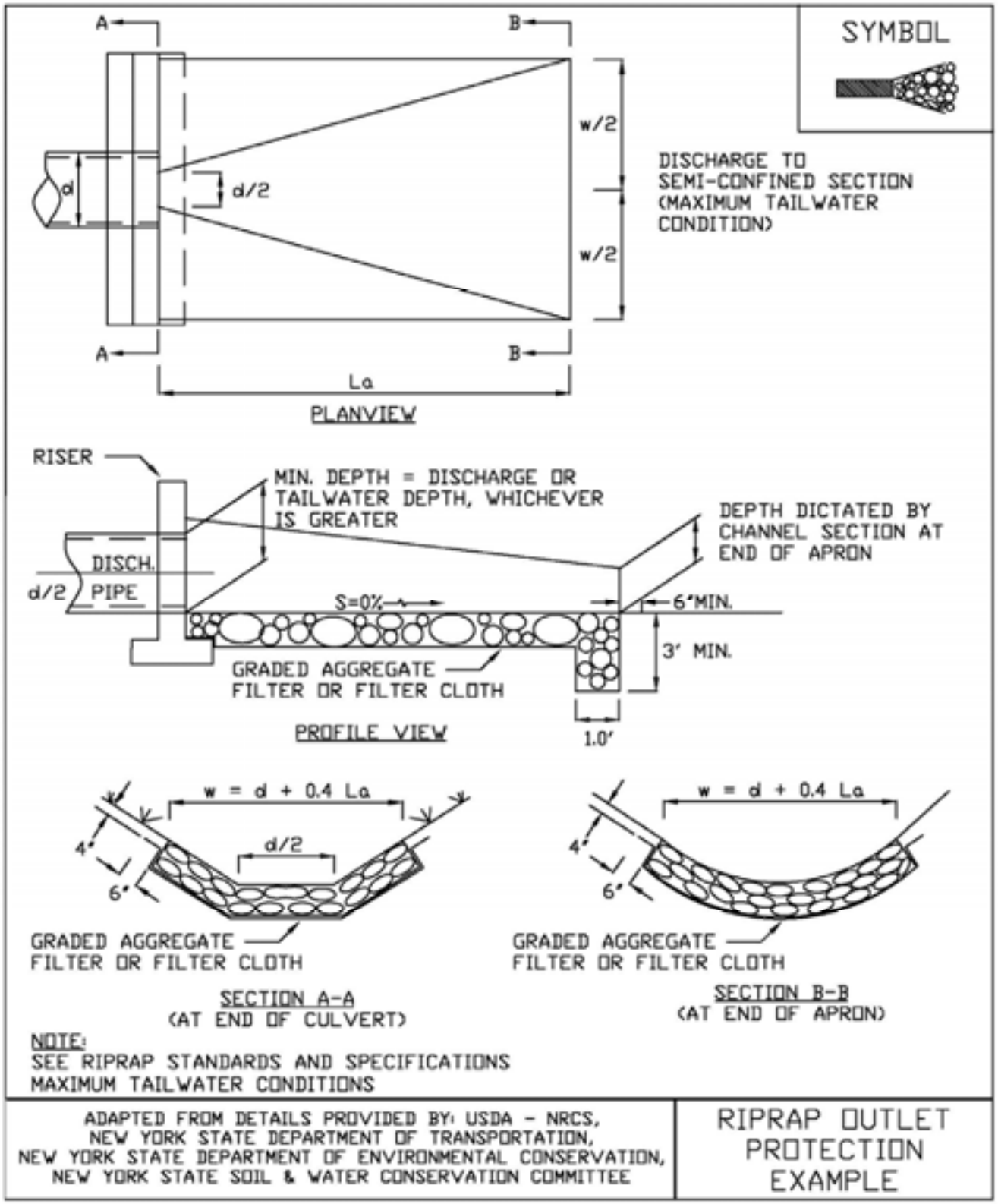


Figure 3.20
Riprap Outlet Protection Detail (3)



STANDARD AND SPECIFICATIONS FOR SURFACE ROUGHENING

Definition & Scope

Roughening a bare soil surface whether through creating horizontal grooves across a slope, stair-stepping, or tracking with construction equipment to aid the establishment of vegetative cover from seed, to reduce runoff velocity and increase infiltration, and to reduce erosion and provide for trapping of sediment.

Conditions Where Practice Applies

All construction slopes require surface roughening to facilitate stabilization with vegetation, particularly slopes steeper than 3:1.

Design Criteria

There are many different methods to achieve a roughened soil surface on a slope. No specific design criteria is required. However, the selection of the appropriate method depends on the type of slope. Methods include tracking, grooving, and stair-stepping. Steepness, mowing requirements, and/or a cut or fill slope operation are all factors considered in choosing a roughening method.

Construction Specifications

1. Cut Slope, No mowing.

   A. Stair-step grade or groove cut slopes with a gradient steeper than 3:1 (Figure 4.18).

   B. Use stair-step grading on any erodible material soft enough to be ripped with a bulldozer. Slopes of soft rock with some soil are particularly suited to stair-step grading.

   C. Make the vertical cut distance less than the horizontal distance, and slightly slope the horizontal position of the "step" to the vertical wall.

   D. Do not make vertical cuts more than 2 feet in soft materials or 3 feet in rocky materials.

Grooving uses machinery to create a series of ridges and depressions that run perpendicular to the slope following the contour. Groove using any appropriate implement that can be safely operated on the slope, such as disks, tillers, spring harrows, or the teeth of a front-end loader bucket. Do not make the grooves less than 3 inches deep or more than 15 inches apart.

2. Fill Slope, No mowing

   A. Place fill to create slopes with a gradient no steeper than 2:1 in lifts 9 inches or less and properly compacted. Ensure the face of the slope consists of loose, uncompacted fill 4 to 6 inches deep. Use grooving as described above to roughen the slope, if necessary.

   B. Do not back blade or scrape the final slope face.

3. Cuts/Fills, Mowed Maintenance

   A. Make mowed slopes no steeper than 3:1.

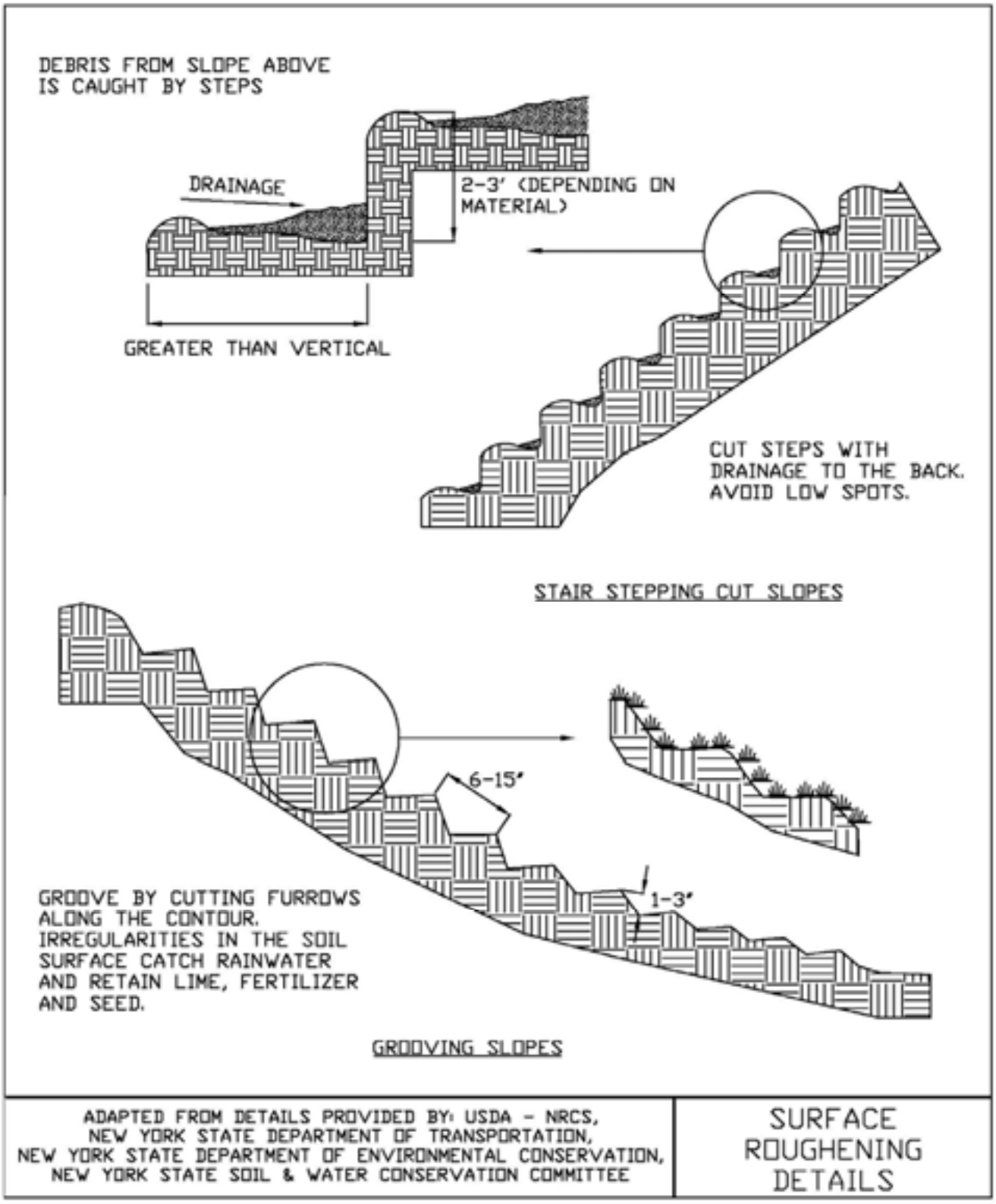
   B. Roughen these areas to shallow grooves by normal tilling, disking, harrowing, or use of cultipacker-seeder. Make the final pass of such tillage equipment on the contour.

   C. Make grooves at least 1 inch deep and a maximum of 10 inches apart.

   D. Excessive roughness is undesirable where mowing is planned.

Tracking should be used primarily in sandy soils to avoid undue compaction of the soil surface. Tracking is generally not as effective as the other roughening methods described. (It has been used as a method to track down mulch.) Operate tracked machinery up and down the slope to leave horizontal depressions in the soil. Do not back-blade during the final grading operation.

Figure 4.18
Surface Roughening



STANDARD AND SPECIFICATIONS FOR TEMPORARY CONSTRUCTION AREA SEEDING

Definition & Scope

Providing temporary erosion control protection to disturbed areas and/or localized critical areas for an interim period by covering all bare ground that exists as a result of construction activities or a natural event. Critical areas may include but are not limited to steep excavated cut or fill slopes and any disturbed, denuded natural slopes subject to erosion.

Conditions Where Practice Applies

Temporary seedings may be necessary on construction sites to protect an area, or section, where final grading is complete, when preparing for winter work shutdown, or to provide cover when permanent seedings are likely to fail due to mid-summer heat and drought. The intent is to provide temporary protective cover during temporary shutdown of construction and/or while waiting for optimal planting time.

Criteria

Water management practices must be installed as appropriate for site conditions. The area must be rough graded and slopes physically stable. Large debris and rocks are usually removed. Seedbed must be seeded within 24 hours of disturbance or scarification of the soil surface will be necessary prior to seeding.

Fertilizer or lime are not typically used for temporary seedings.

IF: Spring or summer or early fall, then seed the area with ryegrass (annual or perennial) at 30 lbs. per acre (Approximately 0.7 lb./1000 sq. ft. or use 1 lb./1000 sq. ft.).

IF: Late fall or early winter, then seed Certified 'Aroostook' winter rye (cereal rye) at 100 lbs. per acre (2.5 lbs./1000 sq. ft.).

Any seeding method may be used that will provide uniform application of seed to the area and result in relatively good soil to seed contact.

Mulch the area with hay or straw at 2 tons/acre (approx. 90 lbs./1000 sq. ft. or 2 bales). Quality of hay or straw mulch allowable will be determined based on long term use and visual concerns. Mulch anchoring will be required where wind or areas of concentrated water are of concern. Wood fiber hydromulch or other sprayable products approved for erosion control (nylon web or mesh) may be used if applied according to manufacturers' specification. Caution is advised when using nylon or other synthetic products. They may be difficult to remove prior to final seeding and can be a hazard to young wildlife species.

SEDIMENT CONTROL

Scope and Discussion

Sediment control is the second component in the site management plan after erosion control. Primary emphasis should be placed on erosion control first which combines runoff control and soil stabilization to minimize soil erosion. Sediment control practices are then integrated into the plan to further reduce the migration of eroded soil both on and off site.

The majority of sediment control practices utilize settling to capture sediment within a storage volume where it can be contained and managed. These practices include sediment basins, sediment traps and dikes, rock dams, water structures, silt fence, turbidity curtains, straw bale dikes, and portable settling tanks. There is also a group of practices that rely on both filtering and settling to capture sediment. These practices include storm drain inlet protection structures, geotextile filter bags, compost tubes, and buffer filter strips. In addition, the use of chemical polymer substances is a process that may, with NYSDEC approval, be used on sites where disturbed clay soils remain in suspension.

It is important that these sediment control practices be designed, constructed and installed in accordance with the criteria contained in these standards. For these practices to effectively remove sediment from turbid water, the volumes, dimensions, and appropriate attributes of these individual practices must be maintained. This includes the calculated relationships of dimensions to respective drainage areas, length to width ratios, and frequency of inspection and maintenance.

Note: Performing activities within or adjacent to wetlands, streams and waterbodies may require permits from the New York State Department of Environmental Conservation (NYSDEC) pursuant to Article 15 (Protection of Waters), Article 24 (Freshwater Wetlands) and Article 25 (Tidal Wetlands) of the Environmental Conservation Law (ECL). Project owners should contact NYSDEC's Regional Division of Environmental Permits early in the site planning process to discuss the requirements for meeting permit issuance standards. Following the New York State Standards and Specifications for Erosion and Sediment Control may not ensure compliance with the above referenced sections of the ECL.

To assist with the success of these sediment control practices, apply the following concepts for the practice design and location:

1. Keep the clean water clean by diverting runoff from upslope areas away from disturbed areas.
2. Employ natural vegetative buffers or artificial mats to assist in sediment capture in sheet flow areas.
3. Control concentrated flow to minimize additional erosion that could overwhelm a practice.
4. Stabilize all sediment control systems as soon as they are installed so they do not contribute sediment to site runoff.
5. Remove all practices after use and stabilize the regraded areas immediately.

Sediment accumulated in the sediment control practices must be removed when the sediment has filled the designated storage volume for the practice. The material must be disposed of in a manner that stabilizes it on the construction site. These details, as well as the frequency of inspection, sequences of installation and removal, and an inspection checklist shall be included in the Stormwater Pollution Prevention Plan for the site.

Chemical Treatment

Precipitation of sediment is enhanced with the use of specific chemical flocculants that can be applied to a sediment basin in liquid, powder, or solid form. Flocculants include polyacrylimide, aluminum sulfate (alum), and polyaluminum chloride.

Polymer flocculation shall only be used for dispersive soil-water mixtures that do not respond to normal settling times when allowed to set in sediment traps and basins, i.e. less than 7 days. Controlled application takes place in a sediment basin or trap with anionic polyelectrolytes in the form of liquid, powder, or solid form, such as polyacrylimide, aluminum sulfate, chitosan lactate, or chitosan acetate. Cationic polyelectrolytes have a greater toxicity to fish and other aquatic organisms than anionic

polyelectrolytes because they bind to the gills of fish resulting in respiratory failure (Pitt 2003).

Chemical treatment shall not be substituted for proper planning, phasing, sequencing, and the design of appropriate erosion and sediment control practices.

No polymer application shall take place without written approval from NYSDEC.

Field tests must be conducted on the proposed site at the design basin locations with the tributary soils to establish polymer dosing rates and verify settling performance.

Treated water discharged from sediment basins with polymer treatment will be tested to determine that any residual polymer meets the standards set by NYSDEC. Polymer flocculation systems require daily inspection.

STANDARD AND SPECIFICATIONS FOR ARMORED SLOPE AND CHANNEL STABILIZATION

Definition & Scope

A **permanent** layer of stone designed to protect and stabilize areas subject to erosion by protecting the soil surface from rain splash, sheet flow, rill and gully erosion and channel erosion. It can also be used to improve the stability of soil slopes that are subject to seepage or have poor soil structure.

Conditions Where Practice Applies

Riprap is used for cut and fill slopes subject to seepage, erosion, or weathering, particularly where conditions prohibit the establishment of vegetation. Riprap is also used for channel side slopes and bottoms, temporary dewatering diversion channels where the flow velocities exceed 6 feet/second, grade sills, on shorelines subject to erosion, and at inlets and outlets to culverts, bridges, slope drains, grade stabilization structures, and storm drains.

Slope Stabilization Design Criteria

Gradation – Riprap shall be a well-graded mixture with 50% by weight larger than the specified design size. The diameter of the largest stone size in such a mixture should be 1.5 times the d_{50} size with smaller sizes grading down to 1 inch. The designer should select the size or sizes that equal or exceed that minimum size based on riprap gradations commercially available in the area.

Thickness – The minimum layer thickness shall be 1.5 times the maximum stone diameter, but in no case less than 6 inches.

Quality – Stone for riprap shall be hard, durable field or quarry materials. They shall be angular and not subject to breaking down when exposed to water or weathering. The specific gravity shall be at least 2.5.

Size – The sizes of stones used for riprap protection are determined by purpose and specific site conditions:

1. Slope Stabilization – Riprap stone for slope stabilization not subject to flowing water or wave action shall be sized for the proposed grade. The gradient of the slope to be stabilized shall be less than the natural angle of repose of the stone selected. Angles of repose of riprap stones may be estimated from Figure 4.1.

   Riprap used for surface stabilization of slopes does not add significant resistance to sliding or slope failure and should not be considered a retaining wall. Slopes approaching 1.5:1 may require special stability analysis. The inherent stability of the soil must be satisfactory before riprap is used for surface stabilization.

2. Channel Stabilization - Design criteria for sizing stone for stability of channel side slopes are presented under Channel Stabilization Design Criteria on page 4.10.

2. Outlet Protection – Design criteria for sizing stone and determining dimensions of riprap aprons are presented in Standards and Specifications for Rock Outlet Protection on page 3.39.

Filter Blanket – A filter blanket is a layer of material placed between the riprap and the underlying soil to prevent soil movement into or through the riprap. A suitable filter may consist of a well-graded gravel or sand-gravel layer or a synthetic filter fabric manufactured for this purpose. The design of a gravel filter blanket is based on the ratio of particle size in the overlying filter material to that of the base material in accordance with the criteria below. Multiple layers may be designed to affect a proper filter if necessary.

A gravel filter blanket should have the following relationship for a stable design:

$$\frac{d_{15}\ \text{filter}}{d_{85}\ \text{base}} \leq 5$$

$$5 < \frac{d_{15}\ \text{filter}}{d_{50}\ \text{base}} \leq 40$$

and

$$\frac{d_{50}\ \text{filter}}{d_{50}\ \text{base}} \leq 40$$

Filter refers to the overlying material while base refers to the underlying material. These relationships must hold between the base and filter and the filter and riprap to prevent migration of material. In some cases, more than one filter may be needed. Each filter layer should be a minimum of 6 inches thick, unless an acceptable filter fabric is used.

A synthetic filter fabric may be used with or in place of gravel filters. The following particle size relationships should exist:

1. Filter fabric covering a base containing 50% or less by weight of fine particles (#200 sieve size):

   A. $\frac{d_{85}\ \text{base (mm)}}{\text{EOS} \times \text{filter fabric (mm)}} > 1$

   B. total open area of filter fabric should not exceed 36%

2. Filter fabric covering other soils:

   A. EOS is no larger than 0.21 mm (#70 sieve size)

   B. total open area of filter fabric should not exceed 10%

*EOS – Equivalent opening size compared to a U.S. standard sieve size.

No filter fabric should have less than 4% open area or an EOS less than U.S. Standard Sieve #100 (0.15 mm). The permeability of the fabric must be greater than that of the soil. The fabric may be made of woven or nonwoven monofilament yarns and should meet the following minimum requirements:

Thickness 20-60 mils

grab strength 90-120 lbs.

conform to ASTM D-1682 or ASTM D-177

Filter blankets should always be provided where seepage is significant or where flow velocity and duration of flow or turbulence may cause underlying soil particles to move though the riprap.

Construction Specifications

Subgrade Preparation – Prepare the subgrade for riprap and filter to the required lines and grades shown on the plans. Compact any fill required in the subgrade to a density approximating that of the undisturbed material or overfill depressions with riprap. Remove brush, trees, stumps, and other objectionable material. Cut the subgrade sufficiently deep so that the finished grade of the riprap will be at the elevation of the surrounding area. Channels shall be excavated sufficiently to allow placement of the riprap in a manner such that the finished inside dimensions and grade of the riprap meet design specifications.

Sand and gravel filter blanket – Place the filter blanket immediately after the ground foundation is prepared. For gravel, spread filter stone in a uniform layer to the specified depth. Where more than one layer of filter material is used, spread the layers with minimal mixing.

Synthetic filter fabric – Place the cloth directly on the prepared foundation. Overlap the edges by at least 2 feet, and space the anchor pins every 3 feet along the overlap. Bury the upper and lower ends of the cloth a minimum of 12 inches below ground. Take precautions not to damage the cloth by dropping the riprap. If damage occurs, remove the riprap and repair the sheet by adding another layer of filter fabric with a minimum overlap of 12 inches around the damaged area. Where large stones are to be placed, a 4-inch layer of fine sand or gravel is recommended to protect the filter cloth. Filter fabric is not recommended as a filter on slopes steeper than 2 horizontal to 1 vertical.

Stone placement – Placement of the riprap shall follow immediately after placement of the filter. Place riprap so that it forms dense, well-graded mass of stone with a minimum of voids. The desired distribution of stones throughout the mass may be obtained by selective loading at the quarry and controlled dumping during final placement. Place riprap to its full thickness in one operation. Do not place riprap by dumping through chutes or other methods that cause segregation of stone sizes. Be careful not to dislodge the underlying base or filter when placing the stones.

The toe of the riprap shall be keyed into a stable foundation at its base as shown in Figure 4.2 - Typical Riprap Slope Protection Detail. The toe should be excavated to a depth of 2.0 feet. The design thickness of the riprap shall extend a minimum of 3 feet horizontally from the slope. The finished slope should be free of pockets of small stone or clusters of large stones. Hand placing may be necessary to achieve proper distribution of stone sizes to produce a relatively smooth, uniform surface. The finished grade of the riprap should blend with the surrounding area.

Maintenance

Riprap shall be inspected periodically for scour or dislodged stones. Control weed and brush growth as needed.

Figure 4.1
Angles of Repose of Riprap Stones (FHWA)

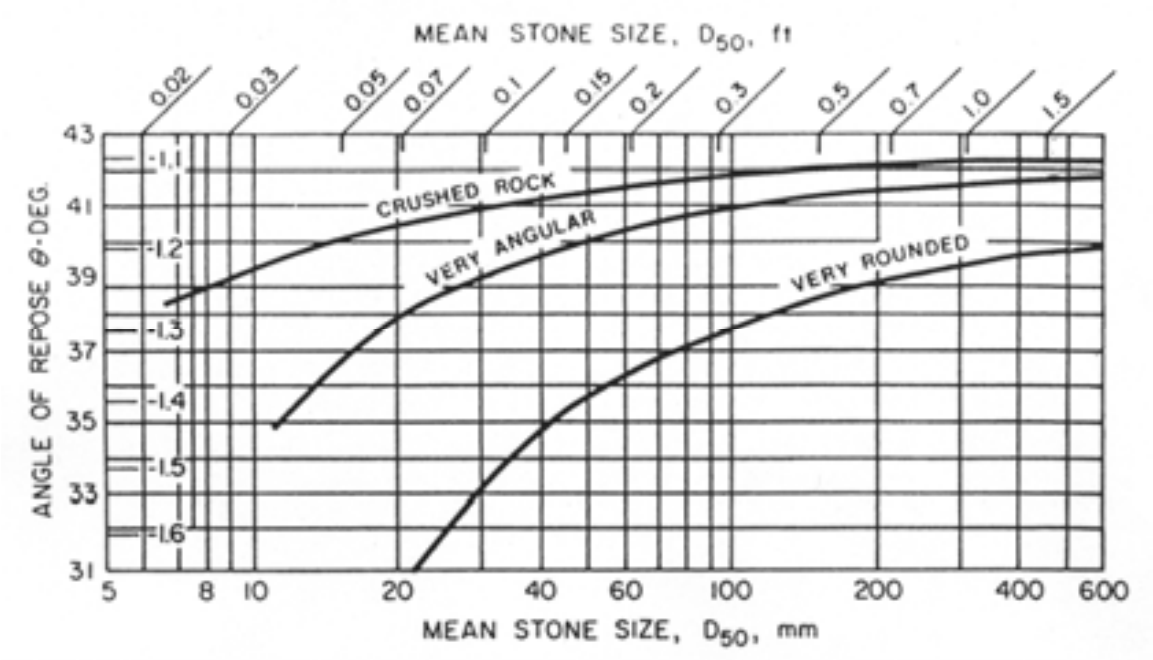
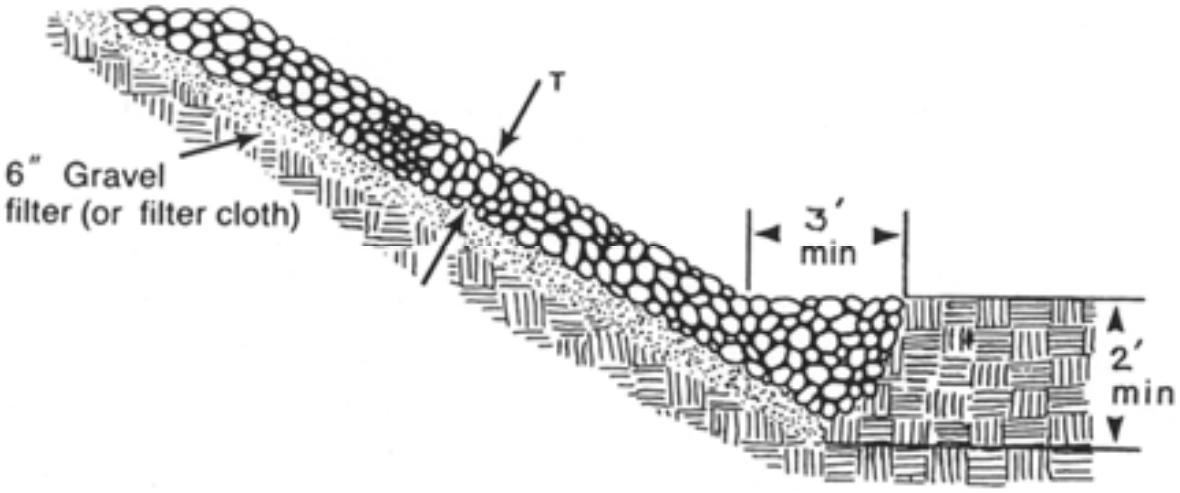


Figure 4.2
Typical Riprap Slope Protection Detail



Channel Stabilization Design Criteria

1. Since each channel is unique, measures for structural channel stabilization should be installed according to a design based on specific site conditions.

2. The plan and profile of the design reach should approximate a naturally stable channel from the project area, based on a stable "reference reach" for the subject channel type.

3. Develop designs according to the following principles:

   - Make protective measures compatible with other channel modifications planned or being carried out in the channel reaches.
   - Whenever excavation and re-shaping work is proposed within channels, the design should provide functional channel dimensions and geometry at each section. Work proposed within a stream channel may require permits from the NYS DEC and US Army Corps of Engineers.
   - Use the design velocity of the peak discharge of the 10-year storm or bankfull discharge, whichever is less. Structural measures should be capable of withstanding greater flows without serious damage.
   - Ensure that the channel bottom is stable or stabilized by structural means before installing any permanent slope protection.
   - Channel stabilization should begin at a stable location and end at a stable point along the bank.
   - Changes in alignment should not be done without a complete analysis of the environmental and stability effects on the entire system.
   - Provisions should be made to maintain and improve fish and wildlife habitat. For example, restoring lost vegetation will provide valuable shade, food, and/or cover.
   - Ensure that all requirements of state law and all permit requirements of local, state, and federal agencies are met.

Construction Specifications

Riprap – Riprap is the most commonly used material to structurally stabilize a channel. While riprap will provide the structural stabilization necessary, the side slope can be enhanced with vegetative material to slow the velocity of water, filter debris, and enhance habitat. See Principles of Biotechnical Practices on page 4.1, for more information.

1. Side slope – slopes shall be graded to 2:1 or flatter prior to placing bedding, filter fabric, or riprap.

2. Filter – filters should be placed between the base material and the riprap and meet the requirements of criteria listed pages 4.7 and 4.8.

3. Gradation – The gradation of the riprap is dependent on the velocity expected against the bank for the design conditions. See Table 4.1 on page 4.12. Once the velocity is known, gradation can be selected from the table for the appropriate class of rock. Note, this table was developed for a 2:1 slope; if the slope steepens to 1.5:1 the gradations should be increased 20%. The riprap should extend 2 feet below the channel bottom and be keyed into the side slope both at the upstream end and downstream end of the proposed work or reach.

See Figure 4.3 on page 4.13 for details.

Reinforced Concrete - Is often used to armor eroding sections of flow channel by constructing walls, bulk heads, or stabilize bank linings in urban areas for redevelopment work. Provide positive drainage behind these structures to relieve uplift pressures.

Grid Pavers – Modular concrete units with or without void areas can be used to stabilize flow channel. Units with void areas can allow the establishment of vegetation. These structures may be obtained in a variety of shapes (Figure 4.4) or they may be formed and poured in place. Maintain design and installation in accordance with manufacturer's instructions.

Revetment – Structural support or armoring to protect an embankment from erosion. Riprap and gabions are commonly used. Also used is a hollow fabric mattress with cells that receive a concrete mixture. Any revetment should be installed to a depth below the anticipated channel degradation and into the channel bed as necessary to provide stability.

Modular Pre-Cast Units – Interlocking modular precast units of different sizes, shapes, heights, and depths, have been developed for a wide variety of applications. They provide vertical support in tight areas as well as durability. Many types are available with textured surfaces. They also act as gravity retaining walls. They should be designed and installed in accordance with the manufacturer's recommendations (Figure 4.4). All areas disturbed by construction should be stabilized as soon as the structural measures are complete.

Maintenance

Check stabilized flow channel sections after every high-water event, and make any needed repairs immediately to prevent any further damage or unraveling of the existing work.

Table 4.1 - Riprap Gradations for Channel Stabilization

Class	Layer Thickness (in.)	Max. Velocity (ft/s)	Wave Height (ft.)		PERCENT FINER BY WEIGHT											
					D_{10}			D_{50}			D_{85}			D_{100}		
					Wt. (lbs.)	d_o (in.)	d□ (in.)	Wt. (lbs.)	d_o (in.)	d□ (in.)	Wt. (lbs.)	d_o (in.)	d□ (in.)	Wt. (lbs.)	d_o (in.)	d□ (in.)
I	18	8.5	-		5	5	4	50	10	8	100	13	10	150	15	12
II	18	10	-		17	7	6	170	15	12	340	19	15	500	22	18
III	24	12	2		46	10	8	460	21	17	920	26	21	1400	30	24
IV	36	14	3		150	15	12	1500	30	25	3000	39	32	4500	47	36
V	48	17	4.8		370	20	16	3700	42	34	7400	53	43	11,000	60	49

d_o = gravel material d□ = angular rock riprap
Wt = weight in pounds

Figure 4.3
Riprap Channel Stabilization

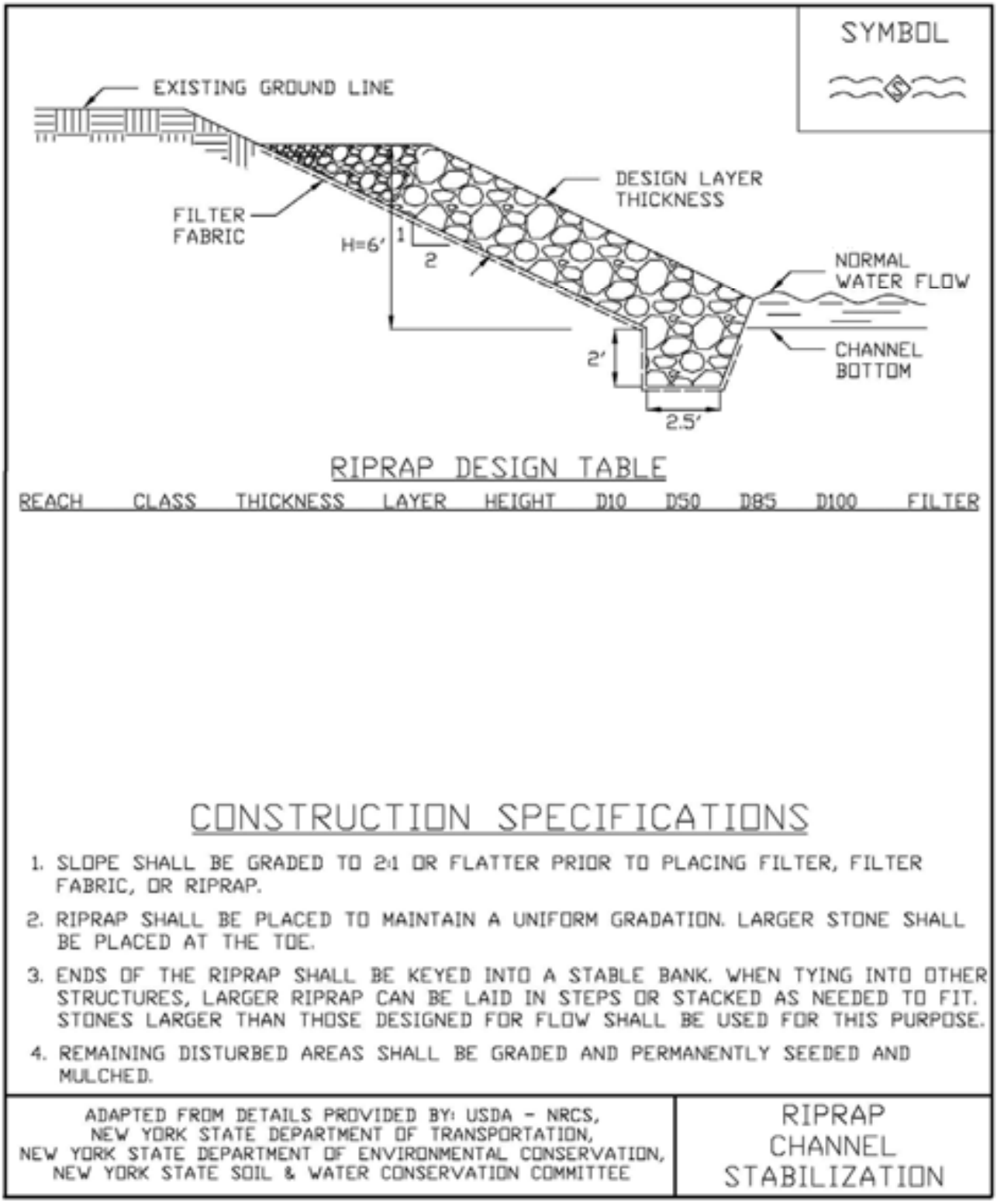
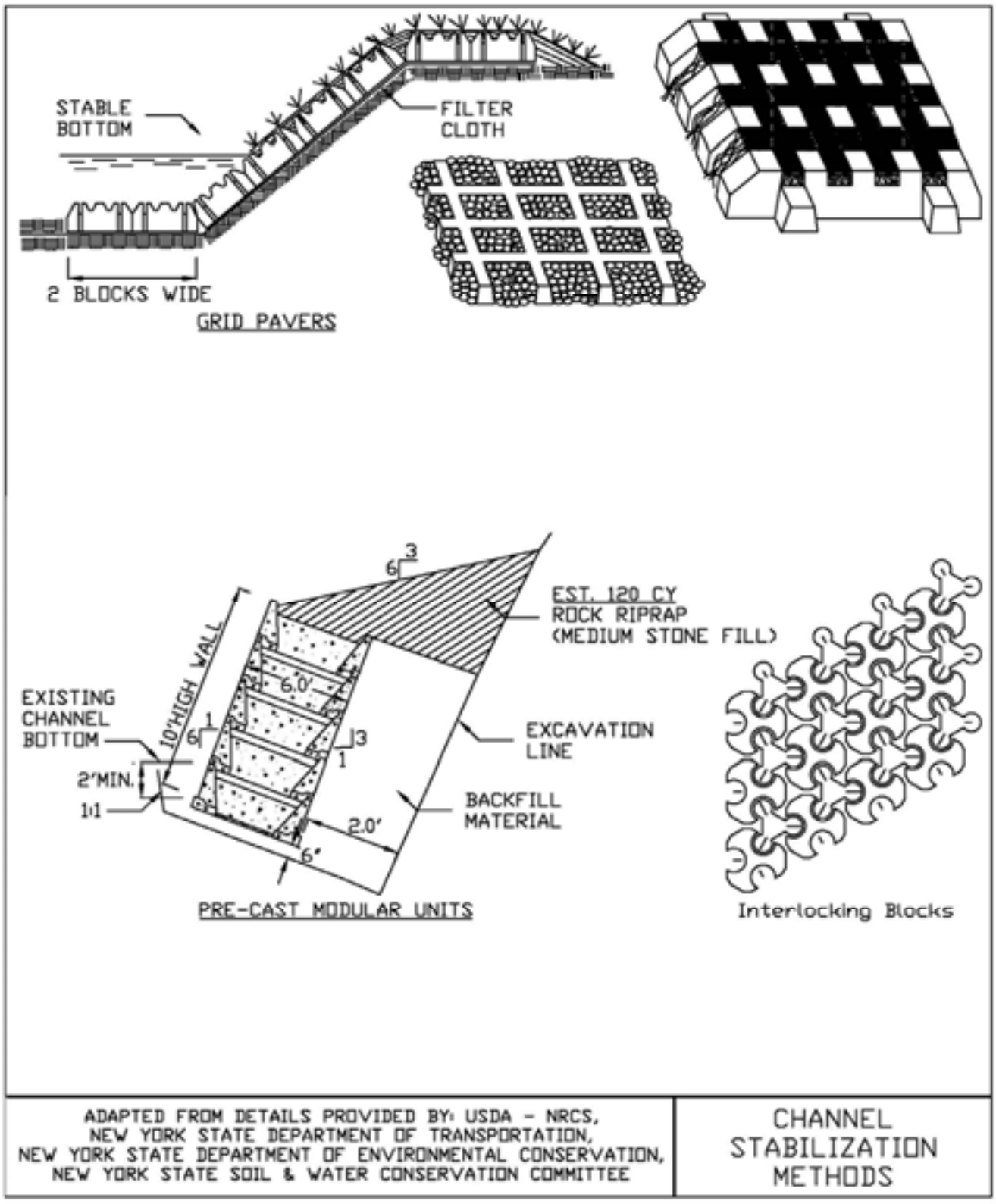


Figure 4.4
Channel Stabilization Methods



STANDARD AND SPECIFICATIONS FOR LANDGRADING

Definition & Scope

Permanent reshaping of the existing land surface by grading in accordance with an engineering topographic plan and specification to provide for erosion control and vegetative establishment on disturbed, reshaped areas.

Design Criteria

The grading plan should be based upon the incorporation of building designs and street layouts that fit and utilize existing topography and desirable natural surrounding to avoid extreme grade modifications. Information submitted must provide sufficient topographic surveys and soil investigations to determine limitations that must be imposed on the grading operation related to slope stability, effect on adjacent properties and drainage patterns, measures for drainage and water removal, and vegetative treatment, etc.

Many municipalities and counties have regulations and design procedures already established for land grading and cut and fill slopes. Where these requirements exist, they shall be followed.

The plan must show existing and proposed contours of the area(s) to be graded. The plan shall also include practices for erosion control, slope stabilization, safe disposal of runoff water and drainage, such as waterways, lined ditches, reverse slope benches (include grade and cross section), grade stabilization structures, retaining walls, and surface and subsurface drains. The plan shall also include phasing of these practices. The following shall be incorporated into the plan:

1. Provisions shall be made to safely convey surface runoff to storm drains, protected outlets, or to stable water courses to ensure that surface runoff will not damage slopes or other graded areas; see standards and specifications for Grassed Waterway, Diversion, or Grade Stabilization Structure.

2. Cut and fill slopes that are to be stabilized with grasses shall not be steeper than 2:1. When slopes exceed 2:1, special design and stabilization consideration are required and shall be adequately shown on the plans. (Note: Where the slope is to be mowed, the slope should be no steeper than 3:1, although 4:1 is preferred because of safety factors related to mowing steep slopes.)

3. Reverse slope benches or diversion shall be provided whenever the vertical interval (height) of any 2:1 slope exceeds 20 feet; for 3:1 slope it shall be increased to 30 feet and for 4:1 to 40 feet. Benches shall be located to divide the slope face as equally as possible and shall convey the water to a stable outlet. Soils, seeps, rock outcrops, etc., shall also be taken into consideration when designing benches.

   A. Benches shall be a minimum of six feet wide to provide for ease of maintenance.

   B. Benches shall be designed with a reverse slope of 6:1 or flatter to the toe of the upper slope and with a minimum of one foot in depth. Bench gradient to the outlet shall be between 2 percent and 3 percent, unless accompanied by appropriate design and computations.

   C. The flow length within a bench shall not exceed 800 feet unless accompanied by appropriate design and computations; see Standard and Specifications for Diversion on page 3.9

4. Surface water shall be diverted from the face of all cut and/or fill slopes by the use of diversions, ditches and swales or conveyed downslope by the use of a designed structure, except where:

   A. The face of the slope is or shall be stabilized and the face of all graded slopes shall be protected from surface runoff until they are stabilized.

   B. The face of the slope shall not be subject to any concentrated flows of surface water such as from natural drainage ways, graded ditches, downspouts, etc.

   C. The face of the slope will be protected by anchored stabilization matting, sod, gravel, riprap, or other stabilization method.

5. Cut slopes occurring in ripable rock shall be serrated as shown in Figure 4.9 on page 4.26. The serrations shall be made with conventional equipment as the excavation is made. Each step or serration shall be constructed on the contour and will have steps cut at nominal two-foot intervals with nominal three-foot horizontal shelves. These steps will vary depending on the slope ratio or the cut slope. The nominal slope line is 1 ½: 1. These steps will weather and act to hold moisture, lime, fertilizer, and seed thus producing a much quicker and longer-lived vegetative cover and better slope stabilization. Overland flow shall be diverted from the top of all serrated cut slopes and carried to a suitable outlet.

6. Subsurface drainage shall be provided where necessary to intercept seepage that would otherwise adversely affect slope stability or create excessively wet site conditions.

7. Slopes shall not be created so close to property lines as to endanger adjoining properties without adequately protecting such properties against sedimentation, erosion, slippage, settlement, subsidence, or other related damages.

8. Fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris, and other objectionable material. It should be free of stones over two (2) inches in diameter where compacted by hand or mechanical tampers or over eight (8) inches in diameter where compacted by rollers or other equipment. Frozen material shall not be placed in the fill nor shall the fill material be placed on a frozen foundation.

9. Stockpiles, borrow areas, and spoil shall be shown on the plans and shall be subject to the provisions of this Standard and Specifications.

10. All disturbed areas shall be stabilized structurally or vegetatively in compliance with the Permanent Construction Area Planting Standard on page 4.42.

Construction Specifications

See Figures 4.9 and 4.10 for details.

1. All graded or disturbed areas, including slopes, shall be protected during clearing and construction in accordance with the erosion and sediment control plan until they are adequately stabilized.

2. All erosion and sediment control practices and measures shall be constructed, applied and maintained in accordance with the erosion and sediment control plan and these standards.

3. Topsoil required for the establishment of vegetation shall be stockpiled in amount necessary to complete finished grading of all exposed areas.

4. Areas to be filled shall be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots, or other objectionable material.

5. Areas that are to be topsoiled shall be scarified to a minimum depth of four inches prior to placement of topsoil.

6. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence, or other related problems. Fill intended to support buildings, structures, and conduits, etc., shall be compacted in accordance with local requirements or codes.

7. All fill shall be placed and compacted in layers not to exceed 9 inches in thickness.

8. Except for approved landfills or nonstructural fills, fill material shall be free of frozen particles, brush, roots, sod, or other foreign objectionable materials that would interfere with, or prevent, construction of satisfactory fills.

9. Frozen material or soft, mucky or highly compressible materials shall not be incorporated into fill slopes or structural fills.

10. Fill shall not be placed on saturated or frozen surfaces.

11. All benches shall be kept free of sediment during all phases of development.

12. Seeps or springs encountered during construction shall be handled in accordance with the Standard and Specification for Subsurface Drain on page 3.48 or other approved methods.

13. All graded areas shall be permanently stabilized immediately following finished grading.

14. Stockpiles, borrow areas, and spoil areas shall be shown on the plans and shall be subject to the provisions of this Standard and Specifications.

Figure 4.9
Typical Section of Serrated Cut Slope

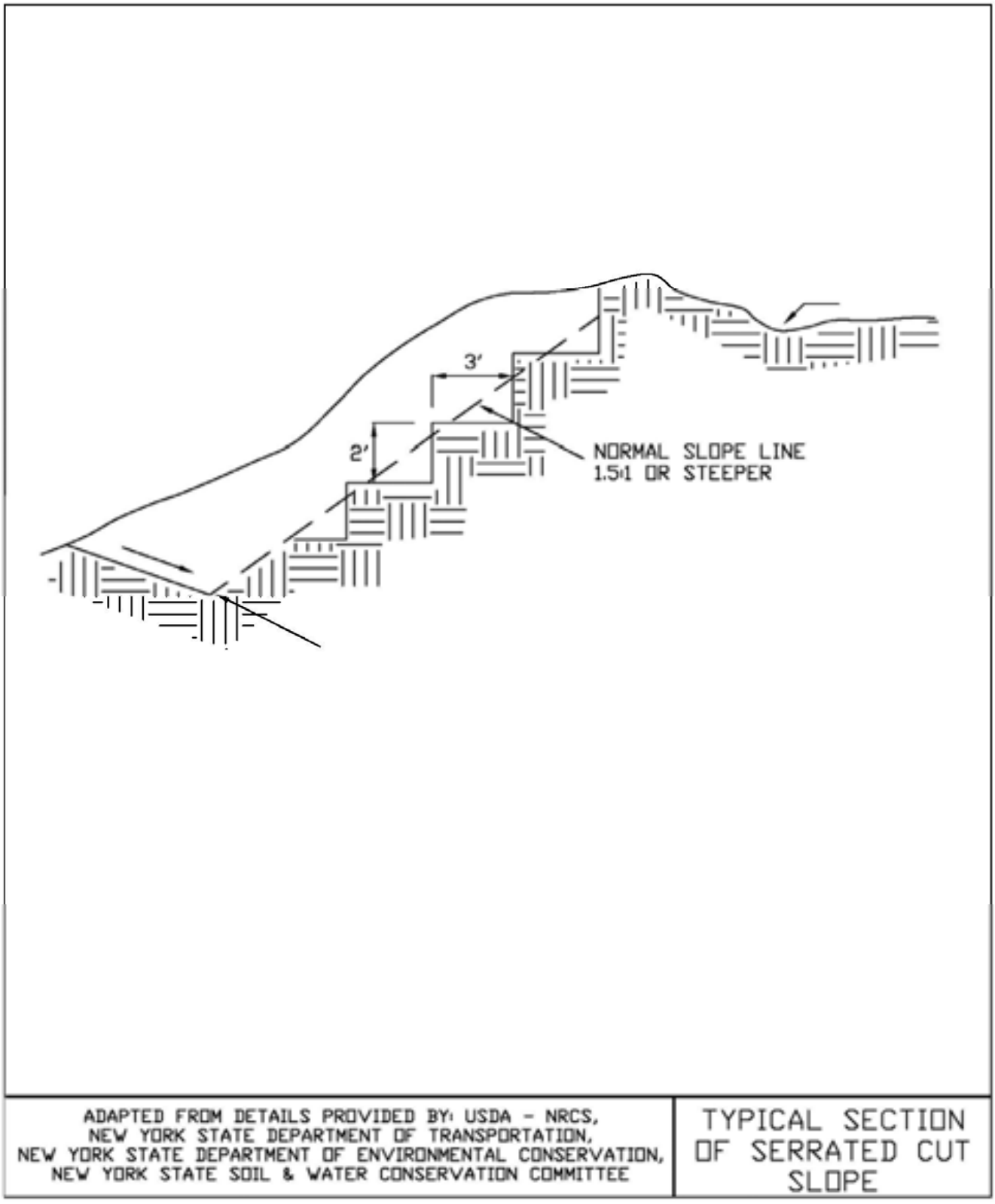


Figure 4.10
Landgrading

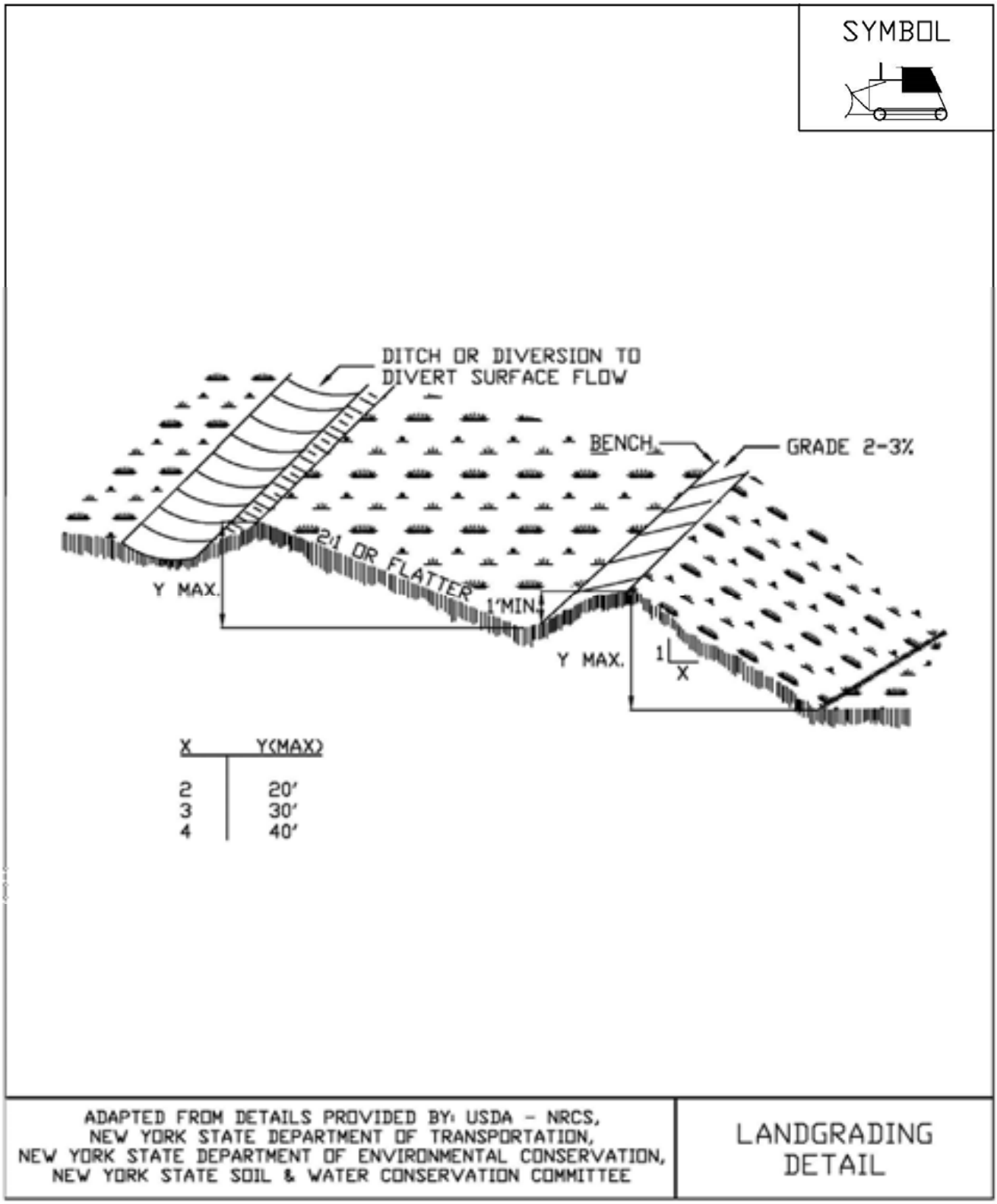


Figure 4.11
Landgrading - Construction Specifications

CONSTRUCTION SPECIFICATIONS

1. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN UNTIL THEY ARE PERMANENTLY STABILIZED.
2. ALL SEDIMENT CONTROL PRACTICES AND MEASURES SHALL BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
3. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNT NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS.
4. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL.
5. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF FOUR INCHES PRIOR TO PLACEMENT OF TOPSOIL.
6. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
7. ALL FILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
8. EXCEPT FOR APPROVED LANDFILLS, FILL MATERIAL SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
9. FROZEN MATERIALS OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED IN FILLS.
10. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
11. ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
12. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
13. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.
14. STOCKPILES, BORROW AREAS AND SPOIL AREAS SHALL BE SHOWN ON THE PLANS AND SHALL BE SUBJECT TO THE PROVISIONS OF THIS STANDARD AND SPECIFICATION.

ADAPTED FROM DETAILS PROVIDED BY: USDA – NRCS,
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

LANDGRADING
SPECIFICATIONS

STANDARD AND SPECIFICATIONS FOR ANCHORED STABILIZATION MATTING

Definition and Scope

A **temporary** or **permanent** protective covering placed on a prepared, seeded planting area that is anchored in place by staples or other means to aid in controlling erosion by absorbing rain splash energy and withstand overland flow as well as provide a microclimate to protect and promote seed establishment.

Conditions Where Practice Applies

Anchored stabilization mats are required for seeded earthen slopes steeper than 3 horizontal to 1 vertical; in vegetated channels where the velocity of the design flow exceeds the allowable velocity for vegetation alone (usually greater than 5 feet per second); on streambanks and shorelines where moving water is likely to erode newly seeded or planted areas; and in areas where wind prevents standard mulching with straw. This standard does not apply to slopes stabilized with sod, rock riprap or hard armor material.

Design Criteria

Slope Applications - Anchored stabilization mats for use on slopes are primarily used as mulch blankets where the mesh material is within the blanket or as a netting over previously placed mulch. These stabilization mats are NOT effective in preventing slope failures.

1. Required on all slopes steeper than 3:1
2. Matting will be designed for proper longevity need and strength based on intended use.
3. All installation details and directions will be included on the site erosion and sediment control plan and will follow manufactures specifications.

Channel Applications - Anchored stabilization mats, for use in supporting vegetation in flow channels, are generally a non-degradable, three dimensional plastic structure which can be filled with soil prior to planting. This structure provides a medium for root growth where the matting and roots become intertwined forming a continuous anchor for the vegetated lining.

1. Channel stabilization shall be based on the tractive force method.
2. For maximum design shear stresses less than 2 pounds per square foot, a temporary or bio-degradable mat may be used.
3. The design of the final matting shall be based on the mats ability to resist the tractive shear stress at bank full flow.
4. The installation details and procedures shall be included on the site erosion and sediment control plan and will follow manufacturers specifications.

Construction Specifications

1. Prepare soil before installing matting by smoothing the surface, removing debris and large stone, and applying lime, fertilizer and seed. Refer to manufacturers installation details.
2. Begin at the top of the slope by anchoring the mat in a 6” deep x 6” wide trench. Backfill and compact the trench after stapling.
3. In channels or swales, begin at the downslope end, anchoring the mat at the bottom and top ends of the blanket. When another roll is needed, the upslope roll

should overlay the lower layer, shingle style, so that channel flows do not peel back the material.

4. Roll the mats down a slope with a minimum 4" overlap. Roll center mat in a channel in direction of water flow on bottom of the channel. Do not stretch blankets. Blankets shall have good continuous contact with the underlying soil throughout its entire length.

5. Place mats end over end (shingle style) with a 6" overlap, use a double row of staggered staples 4" apart to secure mats.

6. Full length edge of mats at top of side slopes must be anchored in 6" deep x 6" wide trench; backfill and compact the trench after stapling.

7. Mats on side slopes of a channel must be overlapped 4" over the center mat and stapled.

8. In high flow channel applications, a staple check slot is recommended at 30 to 40 foot intervals. Use a row of staples 4" apart over entire width of the channel. Place a second row 4" below the first row in a staggered pattern.

9. The terminal end of the mats must be anchored in a 6"x6" wide trench. Backfill and compact the trench after stapling.

10. Stapling and anchoring of blanket shall be done in accordance with the manufactures recommendations.

Maintenance

Blanketed areas shall be inspected weekly and after each runoff event until perennial vegetation is established to a minimum uniform 80% coverage throughout the blanketed area. Damaged or displaced blankets shall be restored or replaced within 2 calendar days.

Appendix P

Contractor Submitted and Approved Erosion and Sediment Control Narrative and Plans for Specific Operations and Project Time Schedule

Appendix Q

B&L and NYCDEP Delineated Watercourses

N

DEP WETLAND J

A 15+00

A 20+00

DEP STREAM #20

Legend

- Trail Centerline
- DEP Stream
- DEP Wetland
- B&L Stream
- B&L Wetland

Barton & Loguidice, D.P.C.

Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 100 feet

Ulster County

Ashokan Rail Trail

B&L / DEP Delineated Resources

Ulster County 8/2/2017 New York

Figure 1

Project No. 369.007

N

DEP STREAM #20

A 20+00

B&L WETLAND P

A 25+00

Legend

- Trail Centerline
- DEP Stream
- DEP Wetland
- B&L Stream
- B&L Wetland

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N W E S

1 inch = 100 feet

Ulster County

Ashokan Rail Trail

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Figure 2

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N
W E
S

1 inch = 100 feet

Ulster County
Ashokan Rail Trail
B&L / DEP Delineated Resources
Ulster County 8/2/2017 New York

Figure 3
Project No. 369.007

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N
W E
S

1 inch = 100 feet

Ulster County
Ashokan Rail Trail
B&L / DEP Delineated Resources
Ulster County 8/2/2017 New York

Figure 4

Project No. 369.007

N

A 70+00

DEP STREAM #18

A 75+00

A 80+00

Legend

- Trail Centerline
- DEP Stream
- DEP Wetland
- B&L Stream
- B&L Wetland

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1 inch = 100 feet

Ulster County

Ashokan Rail Trail

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Figure 5

Project No. 369.007

N

A 110+00

B&L STREAM #16

A 115+00

Legend

- Trail Centerline
- DEP Stream
- DEP Wetland
- B&L Stream
- B&L Wetland

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N W E S

1 inch = 100 feet

Ulster County

Ashokan Rail Trail

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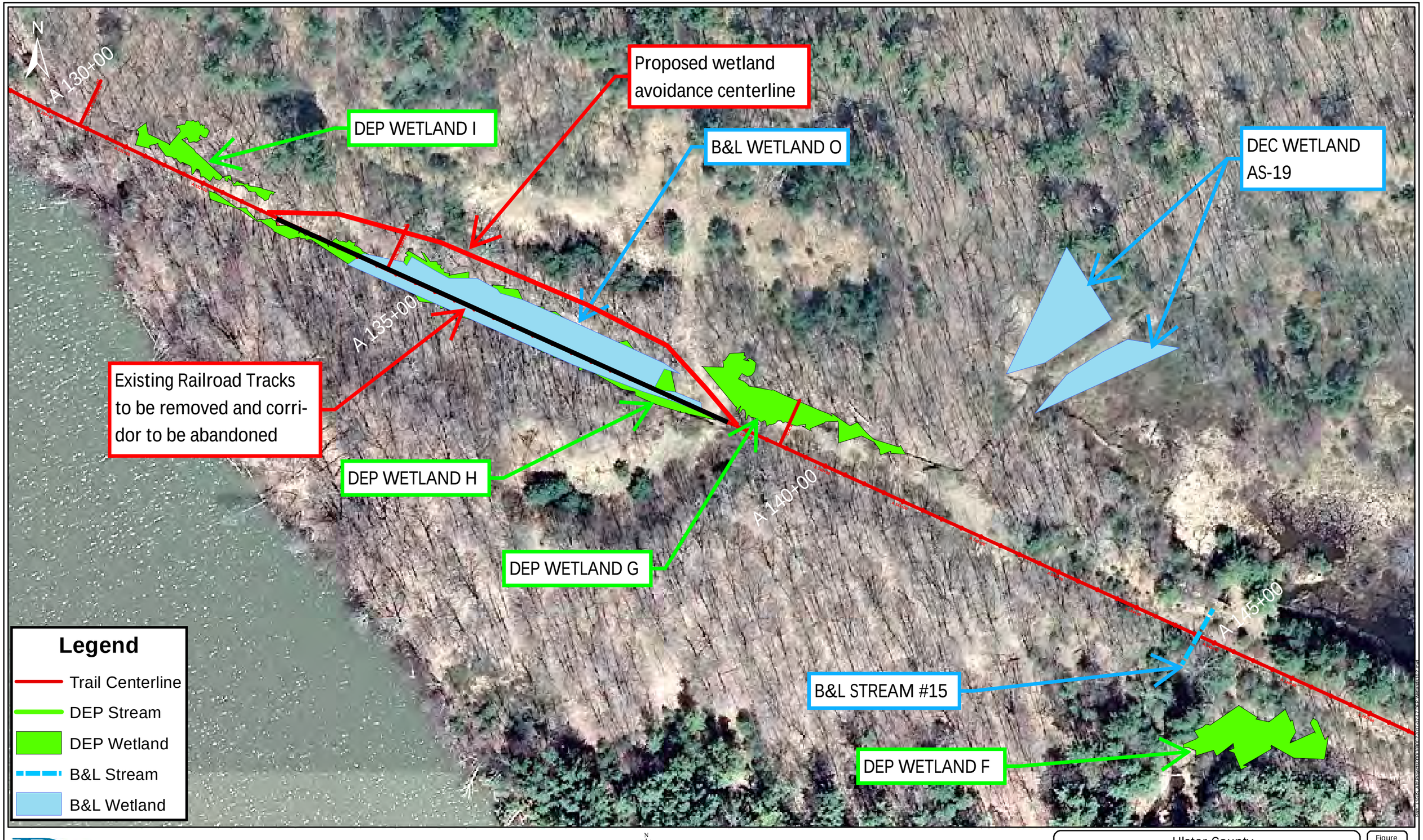
Figure 6

Project No. 369.007



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1 inch = 100 feet

Ulster County
Ashokan Rail Trail
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Ulster County 8/2/2017 New York

Figure 7

Project No. 369.007

N

DEP WETLAND E

B&L STREAM #14

A 175+00

DEP STREAM #17

A 180+00

DEP STREAM #16

A 185+00

Legend

- Trail Centerline
- DEP Stream
- DEP Wetland
- B&L Stream
- B&L Wetland

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N W E S

1 inch = 100 feet

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Ashokan Rail Trail

B&L / DEP Delineated Resources

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Figure 8

Project No. 369.007

N

DEP STREAM #17

DEP WETLAND D

DEP STREAM #16

A 185+00

A 190+00

A 195+00

Legend

- Trail Centerline
- DEP Stream
- DEP Wetland
- B&L Stream
- B&L Wetland

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1 inch = 100 feet

Ulster County

Ashokan Rail Trail

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Figure 9

Project No. 369.007

N

DEP WETLAND D

A 195+00

A 200+00

A 205+00

B&L STREAM #13

DEP STREAM #16

Legend

- Trail Centerline
- DEP Stream
- DEP Wetland
- B&L Stream
- B&L Wetland

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Figure 10

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N W E S

1 inch = 100 feet

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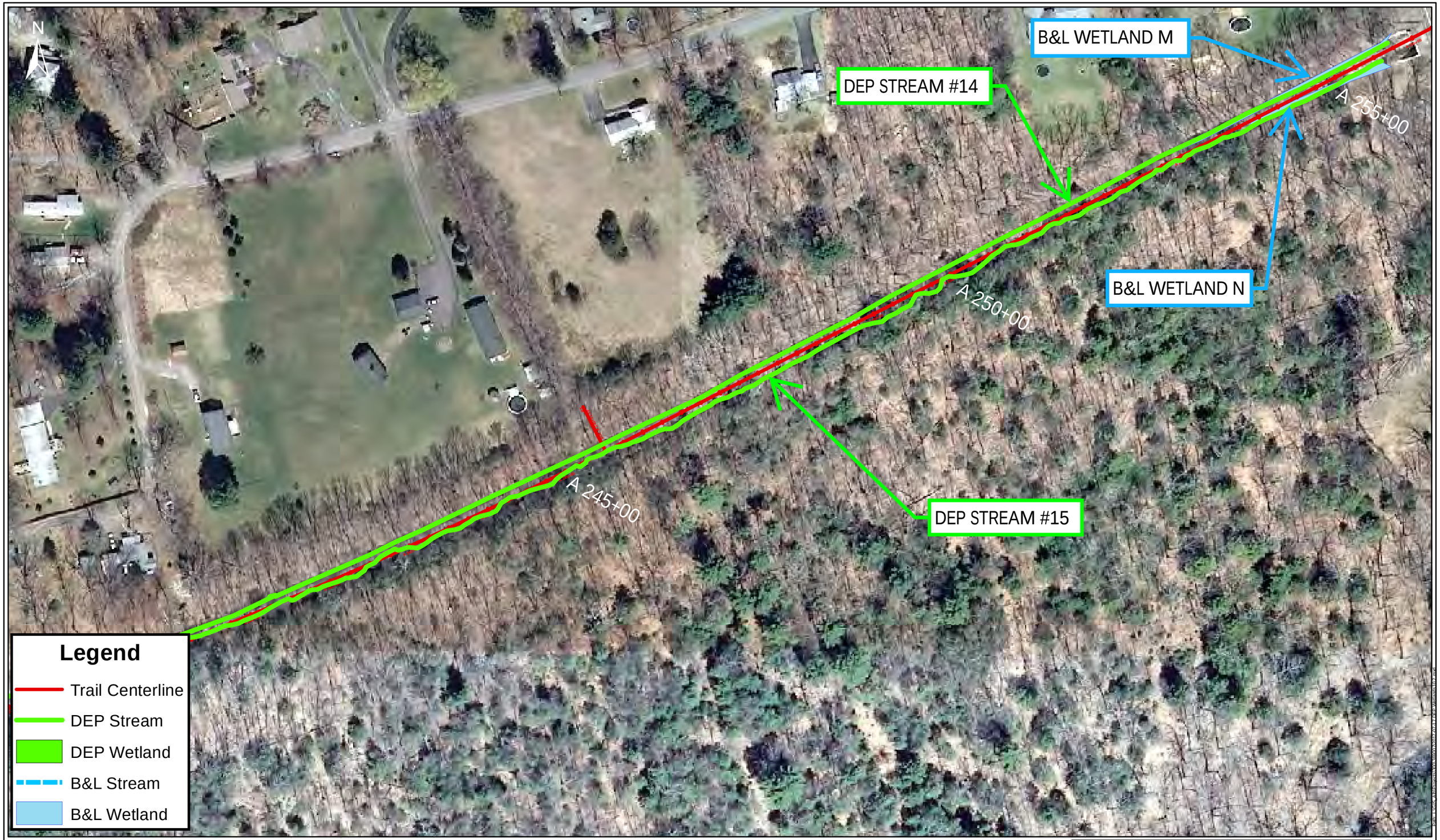
B&L / DEP Delineated Resources
Ulster County 8/2/2017 New York

Figure 11

Project No. 369.007



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1 inch = 100 feet

Ulster County

Ashokan Rail Trail

B&L / DEP Delineated Resources

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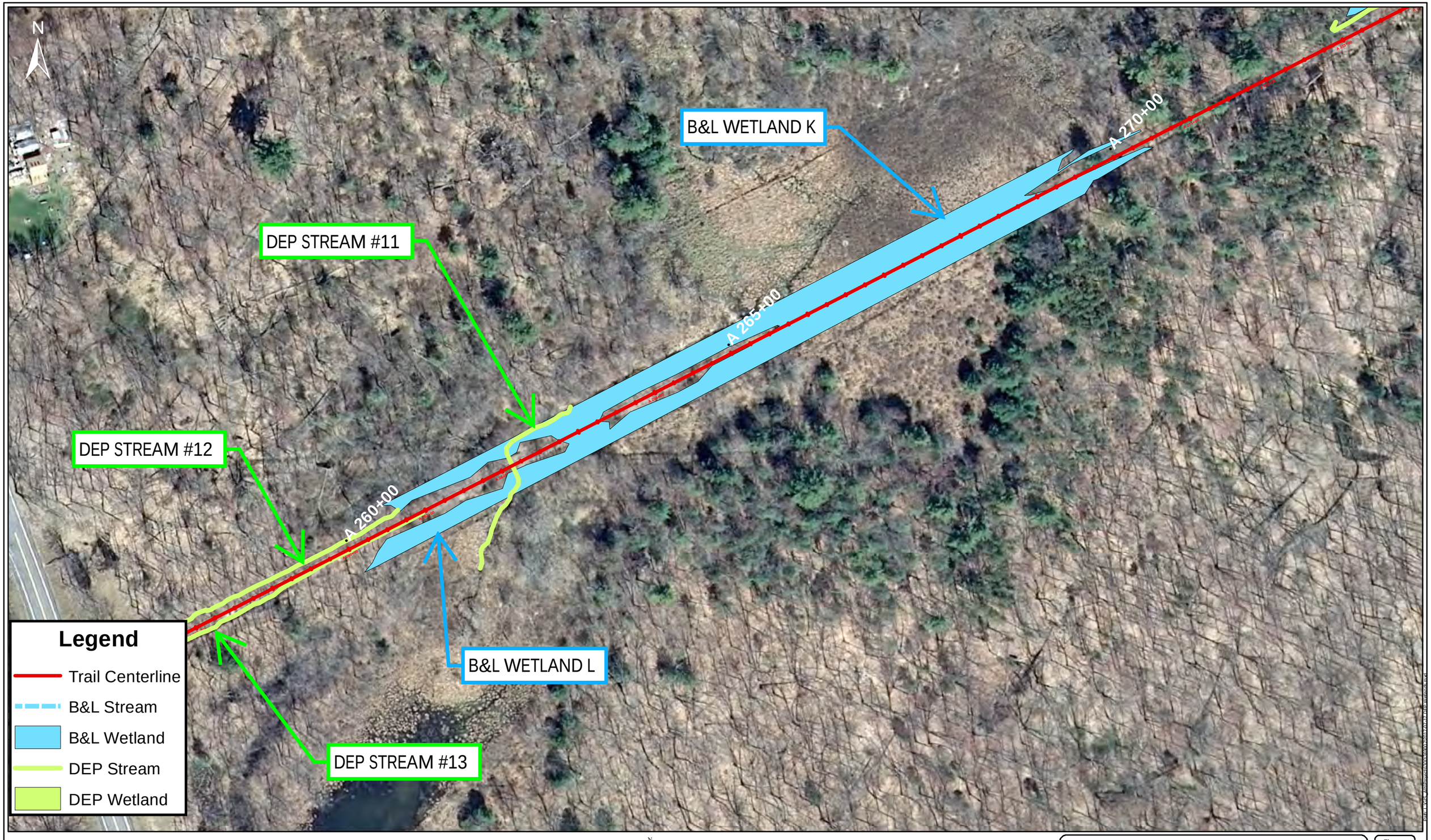
Figure 12

Project No. 369.007



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1 inch = 100 feet

Ulster County
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Figure 13

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Figure 14

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1 inch = 100 feet

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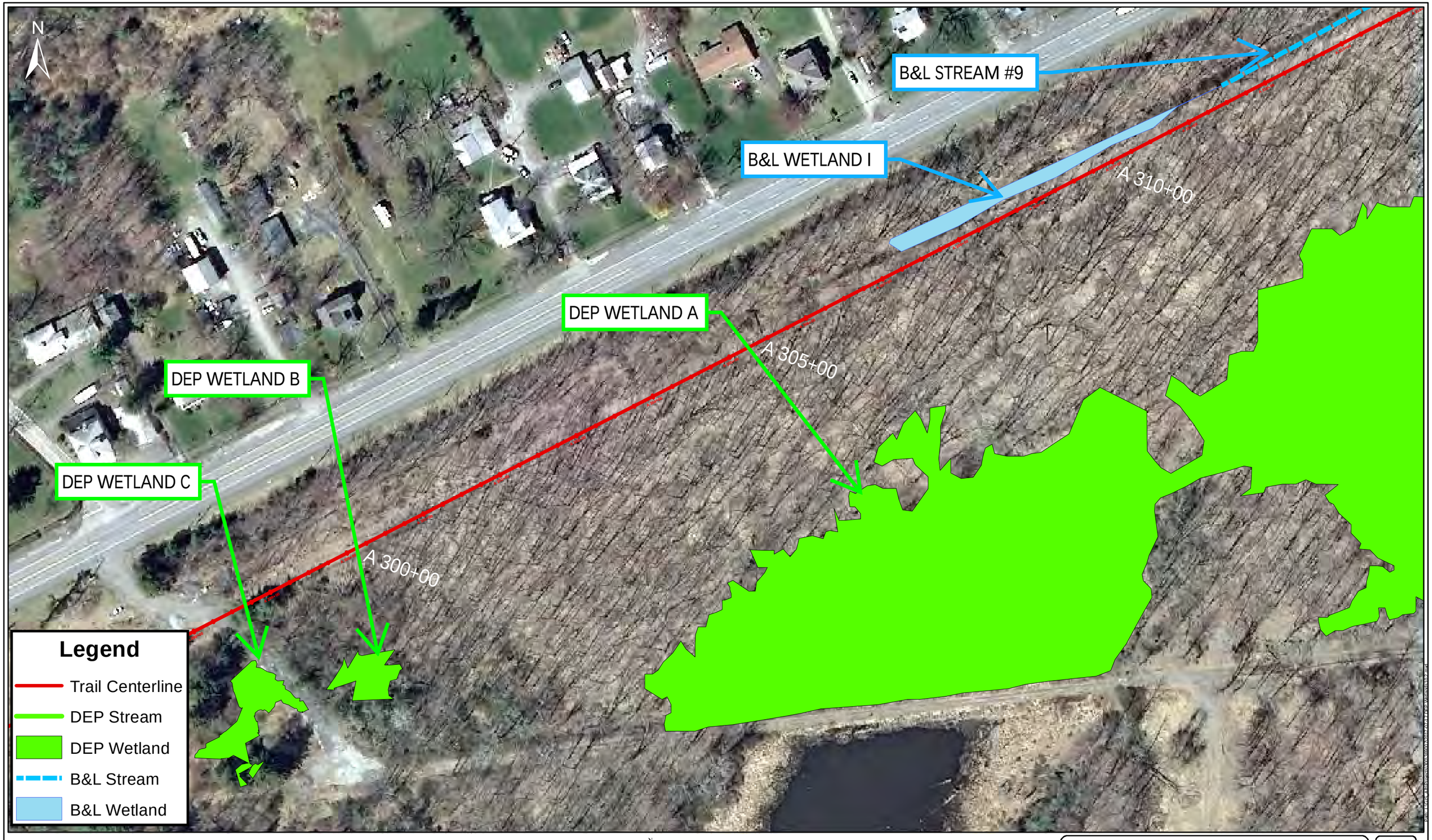
Ulster County 8/2/2017 New York

Figure 15
Project No. 369.007



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1 inch = 100 feet

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Figure 16
Project No. 369.007

N

B&L WETLAND H

DEP WETLAND A

B&L STREAM #9

B&L WETLAND I

A 325+00

A 320+00

A 315+00

Legend

- Trail Centerline
- DEP Stream
- DEP Wetland
- B&L Stream
- B&L Wetland

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N W E S

1 inch = 100 feet

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Figure 17

Project No. 369.007

N

DEP STREAM #6

B&L STREAM 8

DEP STREAM #7

A 350+00

A 345+00

B&L STREAM 7

B&L WETLAND F

A 340+00

B&L WETLAND G

Legend

- Trail Centerline
- DEP Stream
- DEP Wetland
- B&L Stream
- B&L Wetland

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N W E S

1 inch = 100 feet

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Figure 18

Project No. 369.007

N

A 415+00

A 410+00

A 405+00

B&L STREAM #6

Legend

- Trail Centerline
- DEP Stream
- DEP Wetland
- B&L Stream
- B&L Wetland

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N W E S

1 inch = 100 feet

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Figure 19

Project No. 369.007

N

A 420+00

A 425+00

A 430+00

DEP STREAM #5

Legend

- Trail Centerline
- DEP Stream
- DEP Wetland
- B&L Stream
- B&L Wetland

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Figure 20

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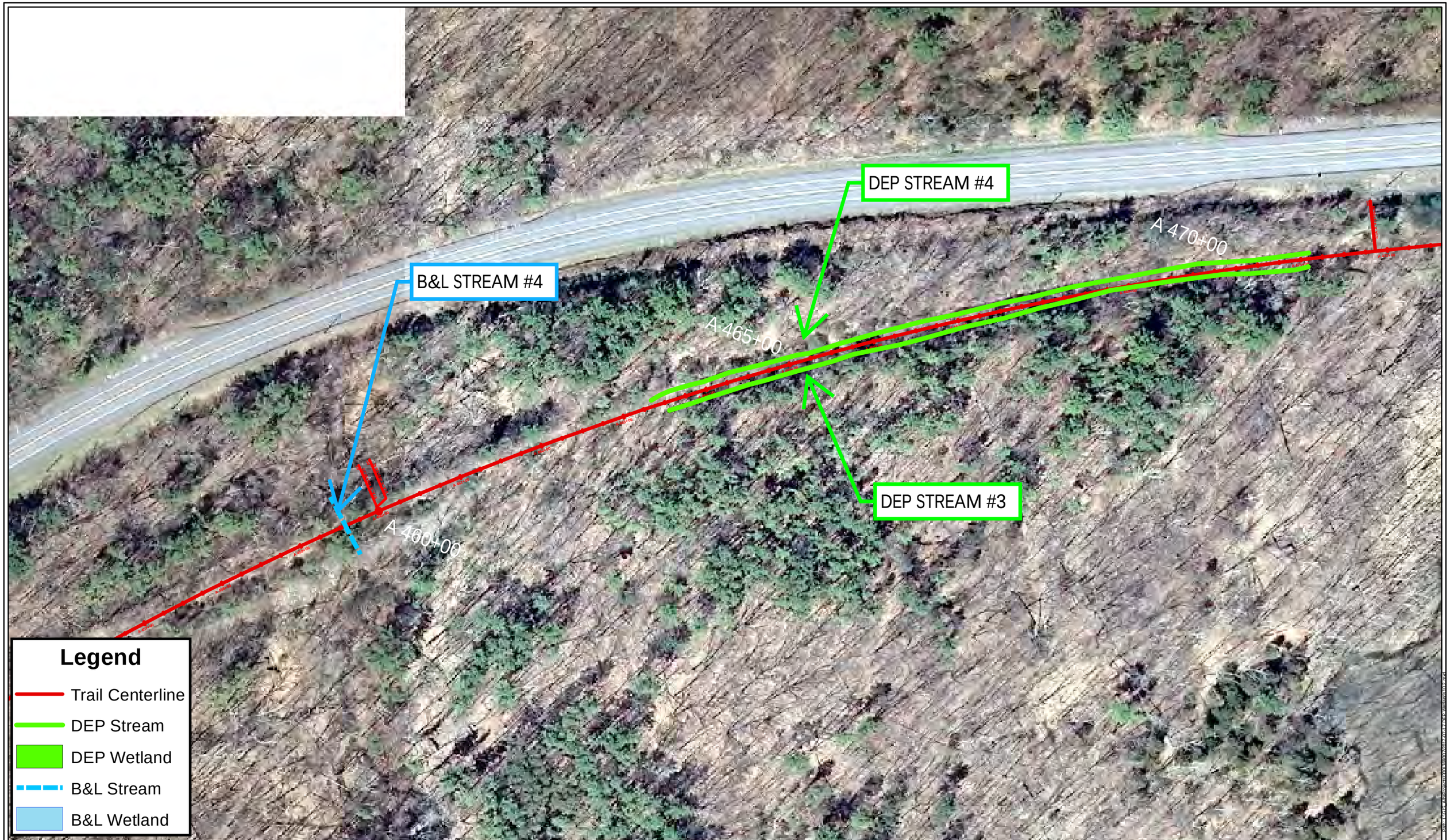
1 inch = 100 feet

Ulster County
Ashokan Rail Trail
B&L / DEP Delineated Resources
Ulster County 8/2/2017 New York

Figure 21

Project No. 369.007



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N W E S

1 inch = 100 feet

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Figure 22

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1 inch = 100 feet

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Ulster County 8/2/2017 New York

Figure 23

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1 inch = 100 feet

Ulster County

Ashokan Rail Trail

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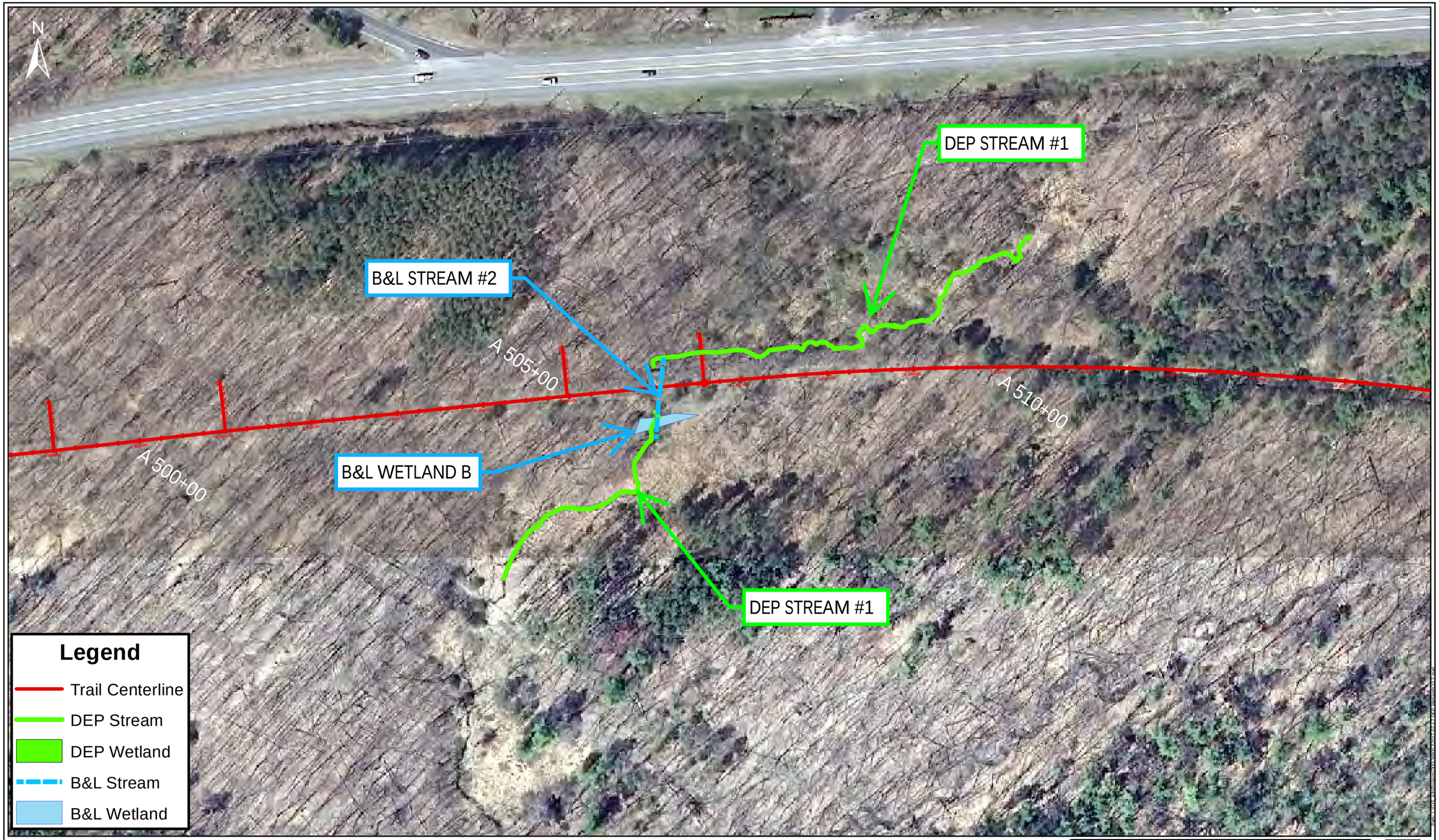
Ulster County 8/2/2017 New York

Figure 24

Project No. 369.007



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N W E S

1 inch = 100 feet

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Ulster County 8/2/2017 New York

Figure 25

Project No. 369.007

N

DEP STREAM #1

A 510+00

A 515+00

A 520+00

A 525+00

B&L STREAM #1

Legend

- Trail Centerline
- DEP Stream
- DEP Wetland
- B&L Stream
- B&L Wetland

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N W E S

1 inch = 100 feet

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Figure 26

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1 inch = 100 feet

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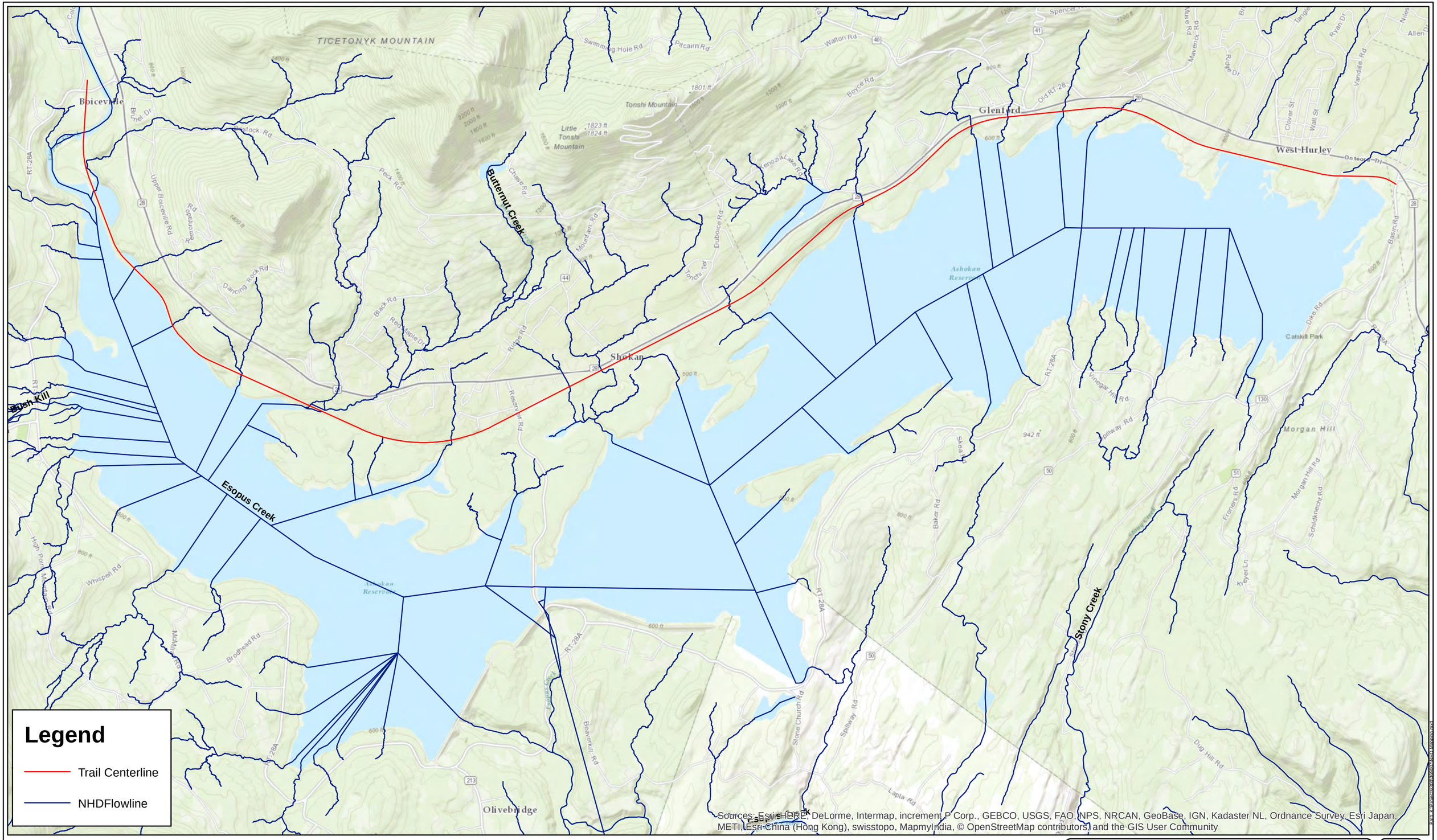
Figure 27
Project No. 369.007



Legend

- Trail Centerline
- NHDFlowline

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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1 inch = 3,250 feet

Ashokan Rail Trail
United States Geological Survey (USGS)
National Hydrography Dataset (NHD)
Ulster County — October 2017 — New York

Figure 28

Project No. 369.007