Attachment C –SWPPP

Part 2 of 6

Appendix S

NYS DEC Permit

PERMIT

Under the Environmental Conservation Law (ECL)

Permittee and Facility Information

Permit Issued To:
ULSTER COUNTY
244 FAIR ST
KINGSTON, NY 12401-3806

Facility:
ASHOKAN RAIL TRAIL
BASIN RD TO RTE 28A
HURLEY, NY 12443

Facility Location: In MULTIPLE TOWNS in ULSTER COUNTY
Facility Principal Reference Point: NYTM-E: 575.494 NYTM-N: 4649.495
Latitude: 41°59'37.9" Longitude: 74°05'18.7"
Project Location: Ulster Delaware Railroad corridor - Wetland AS-19 (II) & Wetland AS-20 (III)
Authorized Activity: Disturb approximately 0.18 acre of Freshwater Wetland AS-20 (Class III) and a total of approximately 1.036 acres of the respective 100 adjacent areas of Freshwater Wetland AS-20 and Freshwater Wetland AS-19 (Class II), to construct the 11.5 mile long Ashokan Rail Trail, including tree felling, track and debris removal, excavation, and filling & grading to construct the twelve feet (12') wide unpaved trail with associated drainage improvements, including repair to a number of deteriorated or failing culverts along the route of the trail. Authorized work includes disturbance to approximately 400 linear feet of the Esopus Creek, Class A(TS), to remove displaced steel girders from stream banks and replace the Boiceville bridge over the Esopus Creek with a new steel span bridge, and disturbance to approximately 300 linear feet of Butternut Creek Class A(T), to remove and replace a failing culvert with a new span pedestrian bridge and "daylight" the stream, in accordance with the plans and narratives referenced in Natural Resources Permit Condition Nos. 1 & 2 and as conditioned in this permit.

Indiana Bat Time-of-Year Restriction: All tree clearing activities shall be conducted only during the time period between October 1st and March 31st of any year this permit remains in effect. See also Natural Resources Permit Condition No. 3.

Trout Spawning Time-of-Year Restriction: All instream work, as well as any work that may result in the suspension of sediments, is prohibited during the trout spawning and incubation period period commencing October 1st and ending April 30th of any year this permit remains in effect. See also Natural Resources Permit Condition No. 4.

Permit Authorizations

Freshwater Wetlands - Under Article 24
Permit ID 3-5199-00041/00001
New Permit Effective Date: 12/26/2017 Expiration Date: 12/31/2020
Stream Disturbance - Under Article 15, Title 5
Permit ID 3-5199-00041/00002
New Permit Effective Date: 12/26/2017 Expiration Date: 12/31/2020

NYSDEC Approval

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.

Permit Administrator: SCOTT BALLARD, Deputy Regional Permit Administrator
Address: NYSDEC Region 3 Headquarters
21 S Putt Corners Rd
New Paltz, NY 12561

Authorized Signature: _____ Date 12/26/17

Distribution List

D. Doyle, Director - Ulster County Planning
C. White, Deputy Director - Ulster County Planning
T. Baird, PE - Barton & Loguidice
C. Laing - NYCDEP (Kingston)
B. Drumm/J. Fisher (ecc)
L. Masi/E. Burns (ecc)
A. Adewole (ecc)
W. Davey - NYS OPRHP
T. Kerpez, Regional Wildlife Manager (ecc)

Permit Components

NATURAL RESOURCE PERMIT CONDITIONS

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Permit Attachments

Miscellaneous Correspondence – Attachment 1: Letter from NYS OPRHP dated 10/3/16
Permit Sign

NATURAL RESOURCE PERMIT CONDITIONS - Apply to the Following Permits: FRESHWATER WETLANDS; STREAM DISTURBANCE

1. **Conformance With Plans** All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or applicant's agent as part of the permit application. Such approved plans were prepared by Barton & Loguidice, DPC for the Ulster County Ashokan Rail Trail project. Approved plans are specified below in Natural Resource Permit Condition No. 2, Approved Plans and Narratives.

2. **APPROVED PLANS AND NARRATIVES** Work shall be performed in strict accordance with the following plans and narratives prepared by Barton & Loguidice, DPC, for the Ulster County Ashokan Rail Trail project, dated October 2017 unless otherwise noted:

Drawing Nos:

- LE-1, LE-2, GCN-1, ESCN-1, ESCN-2, TS-1, TS-2, MD-1, MD-2, MD-3, MD-4, ESCD-1, ESCD-2, ESCD-3, K-1, K-2
- EPN-1 revised December 22, 2017
- PL-2, PL-3, PL-4, PL-5, PL-10, PL-15, PL-18 through PL-28, PL-32 through PL-45, PL-47, PL-48, PL-49, PL-58, PL-60, PL-61, PL-65, PL-66, PL-67, PL-70, PL-71, PL-72, PL-73, PL-87, PL-88
- ESCP-2, ESCP-3, ESCP-4, ESCP-5, ESCP-10, ESCP-15, ESCP-18 through ESCP-22, ESCP-24 through ESCP-28, ESCP-32 through ESCP-45, ESCP-47 through ESCP-50, ESCP-58, ESCP-60, ESCP-61, ESCP-65, ESCP-66, ESCP-67, ESCP-70 through ESCP-73, ESCP-87, ESCP-88
- BV-2, BV-2A, BV-2B, additional sheets labeled as "BV_" (total 18 sheets shown as "BV_"), BN-1, BN-2, additional sheets labeled as "BN_" (total 8 sheets shown as "BN_")
- XX-1, AP-1A, AP-1B, AP-2A, AP-2B through AP-2E, AP-3A, AP-3B, AP-3C, AP-6A, AP-6B, AP-7, AP-8, AP-10A, AP-10B

Ashokan Rail Trail Tree Removal Plans & Figures:

- Sheets labeled 17-151C: Figures 1 through 16
- Drawing Nos. ESCD-1 & ESCD-2
- Sheets labeled 17-152C: Figures 1 through 13
- Drawing Nos. TR-1, ESCD-1, SCD-2

Narratives

- Narratives prepared by Barton & Loguidice, DPC, as contained in the following:
- Submitted Joint Application for Permit dated October 2017
- Letter dated December 18, 2017 (five pages with attachment)

3. **Indiana Bat Time-of-Year Restriction: Tree Clearing** In order to protect the Indiana bat, the clearing of trees shall be performed only during the hibernation period of the Indiana bat: commencing **October 1st through March 31st** of any year this permit remains in effect.

4. **Trout Spawning Time-of-Year Restriction** All instream work, as well as any work that may result in the suspension of sediments, is prohibited during the trout spawning and incubation period period commencing October 1st and ending April 30th of any year this permit remains in effect.

5. **Sediment & Erosion Controls** Prior to the start of construction, all erosion, sediment and turbidity controls shall be installed as shown on approved plans. All erosion and sediment controls, as well as any accumulated silt or sediment, shall be entirely removed upon completion of work for disposal at an appropriate upland location.

6. **DEC Notification Required 48 Hours Prior to Start of Work** The permittee must provide notification to the Department at least 48 hours prior to the start of construction activities affecting Freshwater Wetland AS-19, Freshwater Wetland AS-20, Esopus Creek, or Butternut Creek. Such notification shall be provided via electronic mail to Joshua Fisher of the Bureau of Habitat at this web address: joshua.fisher@dec.ny.gov.

7. **Demolition of Boiceville Bridge Over the Esopus Creek** No debris from demolition activities shall be allowed to enter the Esopus Creek. Prior to the demolition of the existing Boiceville bridge, a system of platforms, screens or similar protective devices shall be installed to prevent debris from entering the Esopus Creek. Such protective devices shall remain in place until removal of all debris has been completed.

8. **Discharging Concrete Contaminated Waters** Wet concrete is highly toxic to fish and other aquatic organisms. Water which comes into contact with fresh concrete or is contaminated by concrete leachate shall be pumped to an upland vegetated area prior to any discharge to the Esopus Creek, Butternut Creek, Freshwater Wetland AS-19 or Freshwater Wetland AS-20.

9. **Maintain Water Flow During Work** During periods of work activity, sufficient flow of water shall be maintained at all times to sustain aquatic life downstream.

10. **Do Not Impede Passage Through Work Areas by Aquatic Organisms** Structures must not impede upstream and downstream migration of aquatic organisms.

11. **Historic/Cultural Resources Requirements- Ulster and Delaware Railroad Corridor** The route of the Ashokan Rail Trail lies partially within the National Register eligible Ulster and Delaware Railroad corridor. The project was reviewed by the New York State Office of Parks, Recreation & Historic Preservation (NYSOPRHP ID#16PR06122). The OPRHP Division of Historic Preservation issued a determination October 3, 2016, that the Ashokan Rail Trail project will have *No Adverse Impact* upon the historic Ulster and Delaware Corridor, provided that certain specified conditions are met. The Department hereby incorporates those requirements contained in the attached letter prepared by Weston Davey, NYS OPRHP Historic Site Preservation Coordinator, dated October 3, 2016. **The applicant shall comply with all requirements contained in the OPRHPs letter attached to this permit as *Attachment 1*.**

12. **Post Permit Sign** The permit sign enclosed with this permit shall be posted in a conspicuous location on the worksite and adequately protected from the weather.

13. **Material Stockpile Areas** Excavated materials and/or fill materials shall be stockpiled more than 100 feet landward of Freshwater Wetland AS-19 & Freshwater Wetland AS-20 and shall be contained by hay bales or silt fencing to prevent erosion.

14. **Precautions Against Contamination of Waters** All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.

15. **Fish Passage thru Culvert** The culvert must at all times remain passable by fish.

16. **No Turbid Discharges** No turbid water resulting from any construction or dewatering operations shall be discharged directly to or allowed to enter surface waters, including the Esopus Creek, Butternut Creek, Freshwater Wetland AS-19, Freshwater Wetland AS-20, or federally regulated wetland areas. Such turbid water shall be pumped to upland vegetated areas, settling basins, or other suitable device for controlling turbid discharges prior to any release to surface waters.

17. **Clean Fill Only** All fill material utilized for this project shall consist of uncontaminated earthen materials only. Acceptable fill materials include gravel, rock, overburden, topsoil and similar natural mineral resources.

18. **Remove Debris & Excess Materials** Any debris or excess materials from construction of this project shall be immediately and completely removed from the bed and banks of all water areas to an appropriate upland area for disposal.

19. **Seed & Mulch Disturbed Areas** All areas of soil disturbance resulting from this project shall be seeded with an appropriate perennial grass and mulched with hat or straw within one week of final grading. Mulch shall be maintained until a suitable vegetative cover is established.

20. **State May Order Removal or Alteration of Work** If future operations by the State of New York require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Department of Environmental Conservation it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety or welfare of the people of the State, or cause loss or destruction of the natural resources of the State, the owner may be ordered by the Department to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State, and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners, shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.

21. **State May Require Site Restoration** If upon the expiration or revocation of this permit, the project hereby authorized has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may lawfully require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.

22. **State Not Liable for Damage** The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

GENERAL CONDITIONS - Apply to ALL Authorized Permits:

1. Facility Inspection by The Department The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. Relationship of this Permit to Other Department Orders and Determinations Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. Applications For Permit Renewals, Modifications or Transfers The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator
NYSDEC Region 3 Headquarters
21 S Putt Corners Rd
New Paltz, NY12561

4. Submission of Renewal Application The permittee must submit a renewal application at least 30 days before permit expiration for the following permit authorizations: Freshwater Wetlands, Stream Disturbance.

5. Permit Modifications, Suspensions and Revocations by the Department The Department reserves the right to exercise all available authority to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

a. materially false or inaccurate statements in the permit application or supporting papers;

b. failure by the permittee to comply with any terms or conditions of the permit;

c. exceeding the scope of the project as described in the permit application;

d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

6. Permit Transfer Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights
This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

Item E: SEQR Type I Action, No Significant Impact Under the State Environmental Quality Review Act (SEQR), the project associated with this permit is classified as a Type I Action with Ulster County Legislature designated as the lead agency. It has been determined that the project will not have a significant effect on the environment.

Attachment 1

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)

New York State
Department of Environmental Conservation

NOTICE

The Department of Environmental Conservation (DEC) has issued permit(s) pursuant to the Environmental Conservation Law for work being conducted at this site. For further information regarding the nature and extent of work approved and any Department conditions on it, contact the DEC at 845/256-3054. Please refer to the permit number shown when contacting the DEC.

Permittee: Ulster County Permit No. 3- 5199-00041/1

Effective Date: 12/26/17 Expiration date: 12/31/20

☑ Applicable if checked. No instream work allowed between October 1 & April 30

NOTE: This notice is **NOT** a permit.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 3
21 South Putt Corners Road, New Paltz, NY 12561-1620
P: (845) 256-3054 | F: (845) 255-4659
www.dec.ny.gov

IMPORTANT NOTICE TO ALL PERMITTEES

The permit you requested is enclosed. Please read it carefully and note the conditions that are included in it. The permit is valid for only that activity expressly authorized therein; work beyond the scope of the permit may be considered a violation of law and be subject to appropriate enforcement action. Granting of this permit does not relieve the permittee of the responsibility of obtaining any other permission, consent or approval from any other federal, state, or local government which may be required.

Please note the expiration date of the permit. Applications for permit renewal should be made well in advance of the expiration date (minimum of 30 days) and submitted to the Regional Permit Administrator at the above address. For SPDES, Solid Waste and Hazardous Waste Permits, renewals must be made at least 180 days prior to the expiration date.

The DEC permit number & program ID number noted on page 1 under "Permit Authorization" of the permit are important and should be retained for your records. These numbers should be referenced on all correspondence related to the permit, and on any future applications for permits associated with this facility/project area.

If a permit notice sign is enclosed, you must post it at the work site with appropriate weather protection, as well as a copy of the permit per General Condition 1.

If the permit is associated with a project that will entail construction of new water pollution control facilities or modifications to existing facilities, plan approval for the system design will be required from the appropriate Department's regional Division of Water or delegated local Health Department, as specified in the State Pollutant Discharge Elimination System (SPDES) permit.

If you have any questions on the extent of work authorized or your obligations under the permit, please contact me at (845) 256-2250 or at the above address.

Scott Ballard SB
Deputy Regional Permit Administrator
Division of Environmental Permits, Region 3

- ☐ Applicable only if checked. Please note all work authorized under this permit is prohibited during trout spawning season commencing October 1 and ending April 30.
- ☐ Applicable only if checked for STORMWATER SPDES INFORMATION: We have determined that your project requires coverage under the General Stormwater SPDES Permit. You must file a Notice of Intent to obtain coverage under the General Permit. This form can be downloaded at: http://www.dec.ny.gov/chemical/43133.html
- ☐ Applicable only if checked - MS4 Areas: This site is within an MS4 area (Municipal Separate Storm Sewer System), therefore the SWPPP must be reviewed and accepted by the municipality. The MS-4 Acceptance Form must be submitted in addition to the Notice of Intent.

Send the completed form(s) to: NYS DEC, Stormwater Permitting, Division of Water, 625 Broadway, Albany, New York 12233-3505; in addition, DEC requests that you provide one electronic copy of the approved SWPPP directly to NYS DEC, 100 Hillside Avenue - Suite 1W, White Plains, NY 10603-2860.

Appendix T

USACE Permit

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278-0090

Regulatory Branch

MAR 1 2 2018

SUBJECT: Permit Application Number NAN-2017-01571-WOR
by Ulster County

Thomas Baird
Barton & Loguidice, D.P.C.
10 Airline Drive, Suite 200
Albany, New York 12205

Dear Mr. Baird:

On October 25, 2017, the New York District of the U.S. Army Corps of Engineers received a request for Department of the Army authorization for the discharge of fill material into waters of the United States for activities associated with the construction of an 11.5-mile pedestrian and bike trail, including the replacement of a bridge over Esopus Creek, to be known as the Ashokan Rail Trail. The project site is located in the Esopus Creek watershed, in the Towns of Hurley and Olive, Ulster County, New York.

The submitted information indicates that the total impacts to waters of the United States would involve the permanent discharge of fill material into a maximum of 0.2499 acres of streams and wetlands. Approximately 300 linear feet of the trail, from Stations 265+75 to 268+75 would be elevated, on 8-inch-diameter piles, approximately 4 feet above wetlands that have established within the ballast of the former railroad bed. Beneath the new boardwalk, the railroad ballast would be removed to a depth of approximately 18 inches, and replaced with 6 inches of native wetland soils. In addition, approximately 0.41 acres of waters would be temporarily impacted for construction access. Upon completion of the work, all temporarily impacted areas would be returned to pre-construction contours. The work would be accomplished as shown on the following drawings:

- "Ashokan Rail Trail Ulster County", Drawings K-1, K-2, ESCP-3, ESCP-4, ESCP-10, ESCP-18, ESCP-19, ESCP-20, ESCP-24, ESCP-28, ESCP-33, ESCP-34, ESCP-35, ESCP-36, ESCP-37, ESCP-38, ESCP-40, ESCP-41, ESCP-44, ESCP-48, ESCP-58, ESCP-61, ESCP-65, ESCP-70, ESCP-71, ESCP-73 and MD-4, prepared by Barton & Loguidice, D.P.C., Drawings K-1 and K-2 dated September, 2017, Drawings ESCP-3, ESCP-4, ESCP-18, ESCP-19, ESCP-20, ESCP-24, ESCP-28, ESCP-33, ESCP-34, ESCP-35, ESCP-40, ESCP-41, ESCP-44, ESCP-48, ESCP-58, ESCP-61, ESCP-70, ESCP-71 and ESCP-73 dated February, 2018, and Drawings ESCP-10, ESCP-36, ESCP-37, ESCP-38, ESCP-65 and MD-4 dated March 7, 2018;
- "Ashokan Rail Trail Boiceville Bridge Over Esopus Creek Ulster County", Drawings BV-1, BV-2 and BV-3, prepared by Barton & Loguidice, D.P.C., Drawings BV-1 and BV-2 dated March 7, 2018, and Drawing BV-3 dated January, 2018; and

MAR 1 2 2018

- "Ashokan Rail Trail Butternut Cove Structure Replacement Ulster County", Drawing BN-1, prepared by Barton & Loguidice, D.P.C., dated January, 2018.

Based on the information submitted to this office, and accomplishment of notification in accordance with the applicable federal requirements, our review of the project indicates that an individual permit is not required. It appears that the activities within the jurisdiction of this office could be accomplished under Department of the Army Nationwide General Permit Number 14. The nationwide permits are prescribed as a Reissuance of Nationwide Permits in the Federal Register dated January 6, 2017 (82 FR 1860). The work may be performed without further authorization from this office provided the activity complies with the permit conditions listed in Section B, No. 14, Section C, any applicable New York District regional conditions, the following special conditions, and any applicable regional conditions added by the State of New York, copies enclosed.

Special Conditions

(A) In order to protect the Federally-listed endangered Indiana bat (*Myotis sodalis*) and the Federally-listed threatened northern long-eared bat (*Myotis septentrionalis*), the clearing of potential roosting trees shall occur only between November 1 and March 31. Orange construction fencing shall be used to separate areas to be graded from areas to be left undisturbed. Artificial dyes, coloring, insecticide or algaecide, such as copper sulfate, shall not be used in stormwater control structures. The permittee shall use shields to direct lights towards the ground.

(B) The permittee shall comply with the terms and conditions of the enclosed letter from the New York State Office of Parks Recreation and Historic Preservation, dated October 3, 2016.

This determination covers only the work described in the submitted material. Any major changes in the project may require additional authorizations from the New York District.

Care should be taken so that construction materials, including debris, do not enter any waterway to become drift or pollution hazards. You are to contact the appropriate state and local government officials to ensure that the subject work is performed in compliance with their requirements.

Please note that this nationwide permit (NWP) verification is based on a preliminary jurisdictional determination (JD). A preliminary JD is not appealable. If you wish, prior to commencement of the authorized work you may request an approved JD, which may be appealed, by contacting the New York District, U.S. Army Corps of Engineers for further instruction. To assist you in this decision and address any questions you may have on the differences between preliminary and approved jurisdictional determinations, please review U.S. Army Corps of Engineers Regulatory Guidance Letter No. 16-01, which can be found at: http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rgl_6-01_app1-2.pdf

MAR 1 2 2018

This verification is valid until March 18, 2022, unless the nationwide permit is modified, reissued, or revoked. This verification will remain valid until March 18, 2022, if the activity complies with the terms of any subsequent modifications of the nationwide permit authorization. If the nationwide permits are suspended, revoked, or modified in such a way that the activity would no longer comply with the terms and conditions of a nationwide permit, and the proposed activity has commenced, or is under contract to commence, the permittee shall have 12 months from the date of such action to complete the activity.

Within 30 days of the completion of the activity authorized by this permit and any mitigation required by this permit, you are to sign and submit the attached compliance certification form to this office.

In order for us to better serve you, please complete our Customer Service Survey located at http://www.nan.usace.army.mil/Missions/Regulatory/CustomerSurvey.aspx.

If any questions should arise concerning this matter, please contact Brian A. Orzel, of my staff, at (917) 790-8413.

Sincerely,

Rosita Miranda
Chief, Western Section

Enclosures

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD:

B. NAME AND ADDRESS OF PERSON REQUESTING PJD: Thomas Baird, Barton & Loguidice, 10 Airline Dr, Albany, NY

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: NY District, Ulster County, NAN-2017-01571-WOR

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: New York County/parish/borough: Ulster City: Hurley and Olive

Center coordinates of site (lat/long in degree decimal format):

Lat.: 41.9841 Long.: -74.1801

Universal Transverse Mercator:

Name of nearest waterbody: Esopus Creek/Ashokan Reservoir

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: March 8, 2018

☐ Field Determination. Date(s):

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
Stream 1	42.0011	-74.1266	70 linear ft	non-wetland waters	404
Stream 2	42.0012	-74.1307	90 linear ft	non-wetland waters	404
Stream 3	42.0003	-74.1425	180 linear ft	non-wetland waters	404
Stream 4	41.9994	-74.1479	105 linear ft	non-wetland waters	404
Stream 5	41.9946	-74.1554	75 linear ft	non-wetland waters	404
Stream 6	41.9914	-74.1630	110 linear ft	non-wetland waters	404

1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.

2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there *"may be"* waters of the U.S. and/or that there *"may be"* navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- [x] Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
  Map: _____.
- [x] Data sheets prepared/submitted by or on behalf of the PJD requestor.
  - [x] Office concurs with data sheets/delineation report.
  - [ ] Office does not concur with data sheets/delineation report. Rationale: _____.
- [ ] Data sheets prepared by the Corps: _____.
- [ ] Corps navigable waters' study: _____.
- [ ] U.S. Geological Survey Hydrologic Atlas: _____.
  - [ ] USGS NHD data.
  - [ ] USGS 8 and 12 digit HUC maps.
- [x] U.S. Geological Survey map(s). Cite scale & quad name: Ashokan, Woodstock NY.
- [x] Natural Resources Conservation Service Soil Survey. Citation: Ulster County, NY.
- [x] National wetlands inventory map(s). Cite name: Ashokan, Woodstock NY.
- [x] State/local wetland inventory map(s): Ashokan, Woodstock NY.
- [ ] FEMA/FIRM maps: _____.
- [ ] 100-year Floodplain Elevation is: _____.(National Geodetic Vertical Datum of 1929)
- [x] Photographs: [x] Aerial (Name & Date): _____.
  or [x] Other (Name & Date): _____.
- [ ] Previous determination(s). File no. and date of response letter: _____.
- [ ] Other information (please specify): _____.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

3/12/2018

Signature and date of
Regulatory staff member
completing PJD

_____

Signature and date of
person requesting PJD
(REQUIRED, unless obtaining
the signature is impracticable)[1]

[1] Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

RGL 16-01: TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION					
Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
Stream 7	41.9801	-74.1811	120 linear ft	non-wetland waters	404
Stream 9	41.9768	-74.1922	175 linear ft	non-wetland waters	404
Stream 10	41.9745	-74.1991	50 linear ft	non-wetland waters	404
Stream 11	41.9735	-74.2013	80 linear ft	non-wetland waters	404
Stream 13	41.9673	-74.2285	40 linear ft	non-wetland waters	404
Stream 14	41.9708	-74.2392	130 linear ft	non-wetland waters	404
Stream 15	41.9738	-74.2485	85 linear ft	non-wetland waters	404
Esopus Creek	41.999	-74.2705	250 linear ft	non-wetland waters	404
Stream 31	41.9688	-74.2138	2465 linear ft	wetland	404
Stream 32	41.9686	-74.2138	1425 linear ft	wetland	404
Wetland AS-20	41.9712	-74.2071	0.054 acres	wetland	404
Wetland M	41.9698	-74.2109	0.011 acres	wetland	404
Wetland N	41.9698	-74.2107	0.006 acres	wetland	404

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK NY 10278-0090

CENAN-OP-RW

NATIONWIDE PERMIT COMPLIANCE CERTIFICATION AND REPORT FORM

Permittee: Ulster County

Permit No.: NAN-2017-01571

Date Permit Issued: MAR 12 2018

Location: Towns of Hurley and Woodstock, Ulster County, New York

Within 30 days of the **COMPLETION** of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the address at the bottom of this form.

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of said permit, and required mitigation was completed in accordance with the permit conditions.

_____ _____
Signature of Permittee Date

Fold this form into thirds, with the bottom third facing outward. Tape it together and mail to the address below **or FAX to (212) 264-4260.**

Place Stamp
Here

Department of the Army
New York District Corps of Engineers
Jacob K. Javits Federal Building
26 Federal Plaza, Room 1937
ATTN: CENAN-OP-RW
New York, New York 10278-0090

Final Regional Conditions, Water Quality Certification and Coastal Zone Concurrence for Nationwide Permit 14 – (Linear Transportation Projects) within the New York District Regulatory Boundary in the State of New York Expiration March 18, 2022

NOTE: This document is derived from the New York District Public Notice dated March 21, 2017, which listed all the Nationwide Permits (NWP) and their regional conditions for all of New York State. That document can be obtained from the New York District web site, located at: http://www.nan.usace.army.mil/Missions/Regulatory/Nationwide-Permits/

This document focuses specifically on NWP 14 (Linear Transportation Projects) and the regional conditions applicable to the counties within the New York District Corps of Engineers.

Table of Contents:

Final Regional Conditions, Water Quality Certification and Coastal Zone Concurrence for Nationwide Permit 14 – (Linear Transportation Projects) within the New York District Regulatory Boundary in the State of New York Expiration March 18, 2022

A. Nationwide Permits Index:

B. Nationwide Permits

14. Linear Transportation Projects. Activities required for crossings of waters of the United States associated with the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10-acre; or (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 32.) (Authorities: Sections 10 and 404)

Note 1: For linear transportation projects crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. Linear transportation projects must comply with 33 CFR 330.6(d).

Note 2: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under section 404(f) of the Clean Water Act (see 33 CFR 323.4).

Note 3: For NWP 14 activities that require pre-construction notification, the PCN must include any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require pre-construction notification (see paragraph (b) of general condition 32). The district engineer will evaluate the PCN in accordance with Section D, "District Engineer's Decision." The district engineer may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see general condition 23).

Permit-specific Regional Conditions:

a. Within Essential Fish Habitat as discussed in Section G-E.8. below, if any work is proposed within areas supporting anadromous fish migration and spawning, sediment removal and pile and sheet pile/cofferdam installation and removal shall be avoided from March 1 to June 30 of any year. Work within cofferdams can proceed any time during the year provided that the cofferdams are installed or removed outside of the seasonal work restriction. A PCN is required if a variance of this seasonal work window is requested.

b. Within Essential Fish Habitat, if any work is proposed within areas identified as EFH for winter flounder eggs and larvae, in-water work shall be avoided from January 15 to May 31 of any year. A PCN is required if a variance of this seasonal work window is requested.

c. Within Essential Fish Habitat, if any work is proposed within submerged aquatic vegetation (SAV) habitat or within 50 feet of SAV habitat, a PCN is required.

d. Within National Marine Fisheries Service (NMFS) Threatened, Endangered or Candidate (TE&C) habitat as discussed in Section G-E.8. below, any work that would generate turbidity or sedimentation shall be avoided from March 16 to October 31. A PCN is required if a variance of this seasonal work window is requested.

e. Within National Marine Fisheries Service (NMFS) Threatened, Endangered or Candidate (TE&C) habitat, any proposed pilings which would be steel or would exceed 12 inches in diameter shall require a PCN.

REMINDER TO APPLICANT: For projects involving culverts, please take particular note of the requirements of General Regional Conditions G-B.1. and B.2. below.

Section 401 Water Quality Certification:
The New York State Department of Environmental Conservation (NYSDEC) has granted blanket Section 401 Water Quality Certification in New York State provided that the project complies with **all** the Special Conditions listed below and General Conditions listed in Section H. Where the Special Conditions differ from the General Conditions, the Special Conditions shall prevail. Any party conducting the activities authorized by this NWP that cannot comply with **all** these conditions must apply for and obtain an individual Section 401 Water Quality Certification from the NYSDEC.

NYSDEC WQC NWP #14 Special Conditions:

- Linear transportation activities that cross multiple waterbodies or cross the same waterbody at multiple locations, while viewed as multiple "single and complete" projects for the purposes of the Nationwide Permit program, will be considered by the Department as a single project for all crossings for the entire length of the project in New York State for the purpose of obtaining Water Quality Certification from New York State and determining the disturbance threshold of 300 linear feet or ¼ acre.

- This certification does not authorize the construction of new linear transportation facilities (such as new roads or crossings structures in riparian wetlands located within a FEMA designated 100 year floodplain.)

New York State Department of State Coastal Zone Management Consistency Determination:
Pursuant to 15 CFR Part 930.41 and 930.43, the New York State Department of State (NYSDOS) objects to the USACE' consistency determination and therefore, an individual consistency concurrence determination from NYSDOS is required for this NWP to be valid in the New York coastal area. See Section I below for further information.

C. Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. (a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: http://www.rivers.gov/.

17. Tribal Rights. No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the USACE' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

(e) Authorization of an activity by an NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental

take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.nmfs.noaa.gov/pr/species/esa/ respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed.

(d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f)).

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is

not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____
(Transferee)

_____
(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States. If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission is not authorized by NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be

used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-Federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

D. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the individual crossings of waters of the United States to determine

whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51, 52, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects. For those NWPs that have a waivable 300 linear foot limit for losses of intermittent and ephemeral stream bed and a 1/2-acre limit (i.e., NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52), the loss of intermittent and ephemeral stream bed, plus any other losses of jurisdictional waters and wetlands, cannot exceed 1/2-acre.

2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters (e.g., streams). The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or

31, or to evaluate PCNs for activities authorized by NWPs 21, 49, and 50), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

E. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

F. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term "discharge" means any discharge of dredged or fill material into waters of the United States.

Ecological reference: A model used to plan and design an aquatic habitat and riparian area restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on the structure, functions, and dynamics of an aquatic habitat type or a riparian area type that currently exists in the region where the proposed NWP 27 activity is located. Alternatively, an ecological reference may be based on a conceptual model for the aquatic habitat type or riparian area type to be restored, enhanced, or established as a result of the proposed NWP 27 activity. An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the acres or linear feet of stream bed that are filled or excavated as a result of the regulated activity. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Protected tribal resources: Those natural resources and properties of traditional or customary religious or cultural importance, either on or off Indian lands, retained by, or reserved by or for, Indian tribes through treaties, statutes, judicial decisions, or executive orders, including tribal trust resources.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper

areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of "independent utility"). Single and complete non-linear projects may not be "piecemealed" to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

Tribal lands: Any lands title to which is either: 1) held in trust by the United States for the benefit of any Indian tribe or individual; or 2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a jurisdictional water of the United States. If a wetland is adjacent to a waterbody determined to be a water of the United States, that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of "waterbodies" include streams, rivers, lakes, ponds, and wetlands.

G. Buffalo and New York District General Regional Conditions

These conditions apply to ALL Nationwide Permits.

G-A. Construction Best Management Practices (BMP's): Unless specifically approved otherwise through issuance of a variance by the District Engineer, the following BMP's must be implemented to the maximum degree practicable, to minimize erosion, migration of sediments, and adverse environmental impacts. Note that at a minimum, all erosion and sediment control and stormwater management practices must be designed, installed and maintained throughout the entire construction project in accordance with the latest version of the *"New York Standards and Specifications for Erosion and Sediment Control"* and the *"New York State Stormwater Management Design Manual"*. These documents are available at: http://www.dec.ny.gov/chemical/29066.html and http://www.dec.ny.gov/chemical/29072.html , respectively. Prior to the discharge of any dredged or fill material into waters of the United States, including wetlands, authorized by NWP, the permittee must install and maintain erosion and sedimentation controls in and/or adjacent to wetlands or other waters of the United States.

1. All synthetic erosion control features (e.g., silt fencing, netting, mats), which are intended for temporary use during construction, shall be completely removed and properly disposed of after their initial purpose has been served. Only natural fiber materials, which will degrade over time, may be abandoned in place.

2. Materials resulting from trench excavation for utility line installation or ditch reshaping activities which are temporarily sidecast or stockpiled into waters of the United States must be backfilled or removed to an upland area within 30 days of the date of deposition. Note: upland options shall be utilized prior to temporary placement within waters of the U.S., unless it can be demonstrated that it would not be practicable or if the impacts of complying with this upland option requirement would result in more adverse impacts to the aquatic environment.

3. For trenching activities in wetlands the applicant shall install impermeable trench dams or trench breakers at the wetland boundaries and every 100 feet within wetland areas to prevent inadvertent drainage of wetlands or other waters of the United States.

4. Dry stream crossing methods (e.g., diversion, dam and pump, flume, bore) shall be utilized for culvert or other pipe, or utility installations to reduce downstream impacts from turbidity and sedimentation. This may require piping or pumping the stream flow around the work area and the use of cofferdams.

5. No in-stream work shall occur during periods of high flow, except for work that occurs in dewatered areas behind temporary diversions, cofferdams or causeways.

6. Construction access and staging areas shall be by means that avoid or minimize impacts to aquatic sites (e.g. use of upland areas for access & staging, floating barges, mats, etc.). Discharges of fill material associated with the construction of temporary access roads, staging areas and work pads in wetlands shall be placed on filter fabric. All temporary fills shall be removed upon completion of the work and the disturbed area restored to pre-construction contours, elevations and wetland conditions, including cover type. All vegetation utilized in the restoration activity shall consist of native species.

7. All return flow from dredged material disposal areas shall not result in an increase in turbidity in the receiving water body that will cause a substantial visible contrast to natural conditions. (See NWP #16)

8. For activities involving the placement of concrete into waters of the U.S., the permittee must employ watertight forms. The forms shall be dewatered prior to the placement of the concrete. The use of tremie concrete is allowed, provided that it complies with New York State water quality standards.

9. New stormwater management facilities shall be located outside of waters of the U.S. A variance of this requirement may be requested with the submission of a PCN. The PCN must include justification which demonstrates that avoidance and minimization efforts have been met.

10. To the maximum extent practicable, the placement of fill in wetlands must be designed to maintain pre-construction surface water flows/conditions between remaining on or off-site waters and to prevent draining of the wetland or permanent hydrologic alteration. This may require the use of culverts and/or other measures. Furthermore, the activity must not restrict or impede the passage of normal or expected high flows (unless the primary purpose of the fill is to impound waters). The activity may alter the pre-construction flows/conditions if it can be shown that it benefits the aquatic environment (i.e. wetland restoration and/or enhancement).

G-B. CULVERTS

1. **ALL NEW OR REPLACEMENT CULVERTS** in streams shall be constructed/installed in accordance with the following, in order to ensure compliance with NWP General Condition #2 – Aquatic Life Movement and #9 Management of Water Flows:

a. Size: Bank-full flows shall be accommodated through maintenance of the existing bank-full channel cross sectional dimensions within one culvert. Bank-full width is generally considered to be the top width at the stage where a stream begins to overtop its banks and spread into the floodplain. Either a bottomless culvert or bridge must be used where practicable. If the stream cannot be spanned, the culvert width shall be minimum of 1.25 times width of the stream channel at the ordinary high water, or a 2 year design storm.

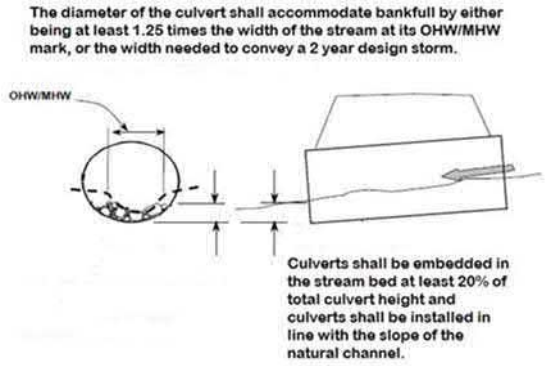
b. Depth: To maintain low flow and aquatic life movement within culverts with a bottom, the culvert invert must be embedded. Specifically, the culvert must be installed with its bottom buried below the grade of the stream bed, as measured at the average low point, to a depth of a minimum of 20 percent of the culvert vertical rise (height) throughout the length of the culvert. (Note: When not practicable to do so due to small culvert size, it is acceptable to allow natural deposition to cover the interior of the culvert bed following placement of the culvert invert to the 20% depth.)

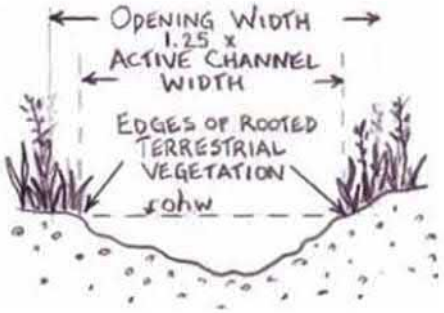
c. The dimension, pattern, and profile of the stream above and below the stream crossing shall not be permanently modified by changing the width or depth of the stream channel.

d. The culvert bed slope shall remain consistent with the slope of the adjacent stream channel.

e. Stone aprons and scour protection placed in streams shall not extend higher than the stream bed in order to create a uniform grade and shall be filled with native stream bed material and supplemented with similarly sized material, if needed, to fill interstitial spaces to maintain water flow on the surface of the stream bed.

Note 1: Use of the requirements alone will not satisfy the need for proper engineering and design. In particular, appropriate engineering is required to ensure structures are sized and designed to provide adequate capacity (to pass various flood flows) and stability (bed, bed forms, footings and abutments, both upstream and downstream). It is the permittee's responsibility to ensure the structure is appropriately designed.
Note 2: This condition does not apply to temporary culverts used for construction access that are in place for less than one construction season. However, compliance with General Conditions #2 and #9 still applies.





Preconstruction Notification (PCN) Requirements:
A PCN is required for projects that do not meet all of the above requirements. In addition to the PCN requirements of General Condition #32, the PCN must include the following information:

i. A statement indicating which of the above requirements will not be met by the proposed project;

ii. Information as to why the use of such structures or measures would not be practicable;

iii. A brief description of the stream discussing:
- Site specific information (i.e. stream bed slope, type and size of stream bed material, stream type, existing natural or manmade barriers, etc.) assessed to determine appropriate culvert design and to ensure management of water flows and aquatic life movement.

- Evaluation of the replacement for its impacts on: downstream flooding, upstream and downstream habitat (in-stream habitat, wetlands), potential for erosion and headcutting, and stream stability.

- Flow/storm event the proposed culvert is designed to pass (2 year, 50 year, etc.)

iv. Cross sections of the stream used to calculate the stream bed low point and ordinary high water width, consisting of:

- Stream channel cross sections shall be taken at proximal locations to the crossing location to determine the average of the lowest points in elevation of the stream bed and the average width at ordinary high water.
    - For new crossing locations, the average values from at least three measurements (project location and straight sections of the stream upstream and downstream) shall be used.
    - For replacement of an existing structure, the average values from at least two cross sections (straight sections of the stream upstream and downstream from the existing structure representative of the natural channel) shall be used.
- This average low point shall be used to ensure low flow is maintained through the culvert and from which all embedment depths are measured.
- If the above cross section method was not practicable to use, an alternative method may be utilized. The PCN shall include justification for the method used including the data used and an explanation as to how it provides an equivalent measure.

v. An evaluation of the effects the crossing would have on aquatic life movement and/or water flows; and

vi. Mitigation measures that will be employed to minimize these effects. Mitigation measures may include, but are not limited to baffles, weirs, roughened channels, and grade control structures

A variance of the requirement(s) will be issued by the Corps if it can be demonstrated that the proposal would meet General Conditions #2 & #9 and would result in the least environmentally damaging practicable alternative (e.g. compliance with any of the requirement(s) would result in detrimental impacts to the aquatic system).

2. **ALL CULVERT REHABILITATION PROJECTS** in streams, not including culvert replacement projects, shall be constructed in accordance with the following, in order to ensure compliance with NWP General Condition #2 – Aquatic Life Movement and #9 Management of Water Flows:

a. An evaluation of the existing culvert shall be conducted prior to the proposed culvert rehabilitation to determine if the existing culvert is in compliance with NWP GC #2 and #9. Specifically, the culvert shall be evaluated regarding its effect upon aquatic life movements and low/ high water flow. If the above requirements in General Regional Condition B. 1 (a)-(e) are met then the culvert is considered in compliance with NWP General Conditions #2 & # 9. (Potential evaluation methods to consider include: North Atlantic Aquatic Connectivity Collaborative (NAACC), US Forest Service Aquatic Organism Passage FishXing, etc.)

b. A PCN is not required for projects that utilize cured-in-place pipe lining or other repair activities that do not raise the existing invert elevation such that it causes an impediment to the passage of either aquatic life movement or water flow unless there is an existing impediment.

c. A PCN is required for any culvert rehabilitation project that includes a culvert which is not in compliance with GC #2 and/or #9 (i.e. impedes aquatic life movement or water flow) and which will not be corrected by the proposed repair.

d. A PCN is required for culvert rehabilitation projects which will involve pipe slip lining or other activities, including concrete invert paving and concrete lining that raise the existing invert elevation such that it causes an impediment to the passage of low flow or aquatic life movement. Slip lining is defined as the insertion of a smaller diameter pipe into an existing pipe by pulling pushing, or spiral winding.

Preconstruction Notification (PCN) Requirements:
In addition to the PCN requirements of General Condition #32, the PCN must include the following information:

i. A summary of the evaluation required in Item a. above including a discussion of the impediment(s) to aquatic life movement and/or water flow.

ii. Information as to how the proposal will mitigate for the impediment. Mitigation measures may include, but are not limited to baffles, weirs, roughened channels, and grade control structures.

G-C. No regulated activity authorized by a Nationwide Permit can cause the loss of areas classified as a bog or fen in the State of New York, as determined by the Buffalo or the New York District Corps of Engineers, due to the scarcity of this habitat in New York State and the difficulty with in-kind mitigation. The Districts will utilize the following document in the classification:

Reschke, C. 1990. *Ecological Communities of New York State*. New York Natural Heritage Program. New York State Department of Environmental Conservation. Latham, N.Y. 96p. This document is available at the following location: http://www.dec.ny.gov/animals/29389.html

G-D. National Wild and Scenic Rivers (NWSR): The Upper Delaware River has been designated as a National Wild and Scenic River from the confluence of the East and West Branches below Hancock, New York, to the existing railroad bridge immediately downstream of Cherry Island in the vicinity of Sparrow Bush, New York. Also, the portion of the Genesee River located within Letchworth Gorge State Park, beginning at the southern boundary of the park and extending downstream to the Mt. Morris Dam, was designated by Congress as a permanent Study River in the Genesee River Protection Act of 1989. In accordance with General Condition #16, no activity may occur within a NWSR, including Study Rivers, unless the National Park Service (NPS) has determined in writing that the proposed work will not adversely affect the NWSR designation or study status**.** Therefore, a PCN is required for any NWP which would impact the designated portions of the Genesee River or the Upper Delaware River, unless NPS has previously indicated the project will not adversely affect the waterway. (Note: the applicant may not commence work under any NWP until the NPS determines in writing that the project will not adversely affect the NWSR even if 45-days have passed since receipt of the PCN package.) Information regarding NWSR may be found at**:** https://www.rivers.gov/new-york.php

G-E. For all proposals requiring a pre-construction notification (PCN), in addition to the requirements in General Condition 32, the applicant shall also include: (Note: the application will not be considered complete until all of the applicable information is received).

1. New York State/USACE Joint Application Form: The application form shall be completed and signed and shall clearly indicate that the submission is a PCN. (http://www.lrb.usace.army.mil/Missions/Regulatory/Application-Forms/)

2. Drawings: The PCN must include legible, black and white project drawings on 8.5" x 11" paper. Full size drawings may be submitted in addition to the 8.5" x 11" plans to aid in the application review. Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are a Vicinity Map (i.e. a location map such as a USGS topographical map), a Plan View and a Cross-Section Map. Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view or cross section). The Vicinity Map shall provide the location of the entire project site. In addition, each illustration should be identified with a figure or attachment number. The location map shall include the Latitude and Longitude or UTM coordinates of the project. For linear projects, the PCN shall include a map of the entire project including a delineation of all waters of the U.S. within the

corridor. Aquatic resource information shall be submitted using the Cowardin Classification System mapping conventions (e.g. PFO, PEM, etc.)

3. Color photographs: The photos should be sufficient to accurately portray the project site, keyed to a location map and not taken when snow cover is present.

4. Avoidance and Minimization: The PCN must include a written narrative explaining how avoidance and minimization of temporary impacts and permanent losses of waters of the U.S. were achieved on the project site (i.e. site redesign, reduction in scope, alternate methods, etc.). It should include a description of the proposed construction practices that would be implemented to perform the proposed work and a description of the reasonably foreseeable direct and indirect effects to waters of the U.S. from the proposed construction practices.

5. Mitigation (See General Conditions 23 & 32(b)(6)):The PCN must include at least a conceptual compensatory mitigation plan for all projects resulting in the loss of greater than $1/10^{th}$ of an acre of waters of the United States; or for which a waiver of the 300 linear foot limit on intermittent and ephemeral streams is being requested. Mitigation conceptual plans submitted with the PCN must include the following information at a minimum: proposed compensation type (bank or in-lieu fee credit, restoration, creation, preservation, etc.), location and brief discussion on factors considered for site selection (i.e. soils, water source, potential for invasive species, etc.), amount proposed per resource type and a discussion of how the proposal will compensate for aquatic resource functions and services lost as a result of the project.

Note 1: All mitigation projects must comply with the Federal Regulations on compensatory mitigation (33 CFR 332) entitled "Compensatory Mitigation for Losses of Aquatic Resources: Final Rule", dated April 10, 2008, which is available at:
http://www.lrb.usace.army.mil/Portals/45/docs/regulatory/MitandMon/FinalMitigaitonRuleApril2008.pdf
and any applicable District Guidelines.

Note 2: Although a conceptual mitigation plan may be sufficient for the purposes of a PCN submission, a detailed mitigation plan must be approved by the Corps before any jurisdictional work may occur on the project site.

Note 3: If more than 0.10 acres of designated EFH habitat (as discussed in Section G-E.8. below) would be impacted such that habitat would be lost, compensatory mitigation at a minimum ratio of 1:1 is required. A ratio of more than 1:1 may be required depending upon the ecological value of the habitat to be lost or degraded and the form of compensatory mitigation proposed to be provided.

6. Nationwide Rivers Inventory: The PCN shall indicate if a river segment listed within the National Park Service Nationwide Rivers Inventory (NRI) is located within the proposed project area. For project areas containing a listed NRI segment, the PCN shall also include a statement as to how adverse effects to the river have been avoided or mitigated. The list is available at:
http://www.nps.gov/ncrc/programs/rtca/nri/states/ny.html.

7. Historic or Cultural Resources: In accordance with General Condition 20, a PCN is required for any non-federal activity which may have the potential to cause effects to any historic properties* listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places (NR). Please refer to General Condition 20 for submission requirements. In addition, all PCNs must include:

- A written statement indicating if any such properties may be affected by the proposed project.
- A copy of any completed archaeology or building/structure survey reports. If a survey has not been performed, the statement shall include a list of resources checked in the determination.

- Copies of any available correspondence from the New York State Office of Parks, Recreation, and Historic Preservation State Historic Preservation Officer (SHPO) regarding historic properties.
- Copies of any available correspondence from federally recognized Indian Nations regarding historic properties that may be affected by the project.
- Projects with ground disturbance may have the potential to cause effects to buried historic properties, regardless of occurring outside SHPO designated archaeological sensitive areas. Therefore, the PCN shall indicate if the ground disturbance will occur in any areas of previously undisturbed soil. For areas with prior disturbance, the PCN shall include a brief narrative describing the disturbance and its limit (i.e. type of disturbance, size of area with current undisturbed soil, size of area with existing disturbed soils, when the disturbance occurred, an estimate on how deep the soil disturbance extends, etc.) as well as photos of the existing ground disturbance.
- Above ground buildings/structures that are over 50 years old and potentially affected by the project will need to be assessed to determine if they are eligible for the NR. The PCN shall: identify any structures present in the project area, which have not already been subject to SHPO review, include photos of the structures, and describe how the project would/would not affect them.

* - see NWP definition section for further clarification

NOTE 1**:** Information regarding historic properties may be found at: https://cris.parks.ny.gov. In addition, assistance regarding the determination of the presence of historic or cultural resources at or near the project site should be directed to SHPO.

NOTE 2**:** as stated in General Condition 20, if any listed, eligible or potentially eligible properties are present, the applicant shall not begin the activity until notified by the district engineer in writing either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

8. Endangered Species and Essential Fish Habitat: In accordance with General Condition 18, non-federal applicants must submit a PCN if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat. Please refer to General Condition 18 for submission requirements. In addition, all PCNs must include:

- a written statement and documentation concerning any Essential Fish Habitat (EFH) and any federally listed or proposed Threatened, Endangered, or Candidate (TE&C) species or designated and/or proposed critical habitat that might be affected or located in the vicinity of the project.
- a copy of any correspondence from the U.S. Fish and Wildlife Service (USFWS) and/or National Oceanic and Atmospheric Administration Fisheries Service (NOAA-Fisheries), regarding the potential presence of TE&C species on the project site. USFWS TE&C website: http://www.fws.gov/northeast/nyfo/es/section7.htm . Information on NOAA-Fisheries (NMFS) species (both TE&C and EFH) can be found at: https://www.greateratlantic.fisheries.noaa.gov/]
- an official TE&C species list printed within 90 days of the PCN submission from the USFWS Website.
- For projects where TE&C species are listed, a discussion of potential TE&C species habitat within the project site (See USFWS T&E website for species habitat information).
- If there is potential habitat for any TE&C species within the project site the following, as applicable, shall be submitted:

  a. The results of any habitat surveys and presence/absence surveys. Note: all surveys should be coordinated with the USFWS and/or NOAA-Fisheries (NMFS) prior to initiation.

b. A detailed description of the proposed project, including secondary impacts and approximate proposed project construction schedule of project activities (e.g. land clearing, utilities, stormwater management).
c. A description of the natural characteristics of the property and surrounding area (e.g. forested areas, freshwater wetlands, open waters, and soils) and a description of surrounding land use (residential, agricultural, or commercial).
d. A description of the area to be impacted by the proposed project, including the species, typical sizes (d.b.h.) and number or acres of trees to be removed.
e. The location of the above referenced property and extent of any project related activities or discharges clearly indicated on a copy of a USGS 7.5 minute topographic quadrangle (quad) with the name of the quad(s) and latitude/longitude clearly labeled.
f. A description of conservation measures to avoid, minimize and/or mitigate impacts to listed species.

NOTE 1**:** There are no known TE&C species or EFH species under the jurisdiction of the NOAA-Fisheries (NMFS) within the Buffalo District. Therefore, all Buffalo District requests for information regarding the presence of TE&C species should be directed to the USFWS. In addition, no EFH review is necessary within the following New York District counties: Clinton, Essex, Franklin, Fulton, Hamilton, Montgomery, Otsego, Schenectady, Schoharie and Warren.

NOTE 2**:** Please refer to the following website for further guidance and information relating to regulatory permits & TE&C species in New York:
http://www.lrb.usace.army.mil/Missions/Regulatory/Endangered-Species/Endangered-Species-New-York/

NOTE 3**:** General Condition #18 is emphasized, …"In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed work will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed."

9. 100 Year Floodplain: For permanent fills within waters of the United States within the 100 year floodplain, documentation of compliance with FEMA-approved state or local floodplain management requirements.

10. Submission of Multiple Copies of PCN:

a) One (1) additional copy of the application drawings shall be provided to USACE for coordination with National Oceanic and Atmospheric Administration (NOAA) for utility lines to be constructed or installed in navigable waters of the U.S. proposed under NWP #12, (See Note 1 of NWP #12)
b) One (1) additional copy of the PCN package shall be provided to USACE for coordination with Department of Defense Siting Clearinghouse (See NWP #12, 39, 51 & 52 Notes) for:
    i. overhead utility lines proposed under NWP #12 and
    ii. any activity that involves the construction of a wind energy generating structure, solar tower, or overhead transmission lines proposed under NWP #39, 51 or 52

c) Two (2) additional copies of the PCN package shall be provided to USACE when the project is located within the New York City Watershed, for coordination with the New York City Department of Environmental Protection.

d) Five (5) additional copies of the PCN package shall be submitted to USACE for agency coordination in accordance with General Condition # 31(d)(2) for:
    i. All NWP activities that result in the loss of greater than 1/2-acre of waters of the United States,

ii. NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that will result in the loss of greater than 300 linear feet of intermittent & ephemeral stream bed,
iii. NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites;
iv. NWP 54 activities in excess of 500 linear feet or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

G-F. CRITICAL RESOURCE WATERS

In accordance with NWP General Condition (GC) #22, certain activities in Critical Resource Waters cannot be authorized under the NWP program or would require a PCN (see GC #22 for a list of the NWP activities that are either excluded or require a PCN).

Critical Resource Waters in New York State include the following:

1. **East-of-Hudson portion of the New York City Water Supply:** This area includes portions of Dutchess, Putnam and Westchester Counties as delineated on Enclosure 2.

2. **Hudson River National Estuarine Research Reserves (NERR):** The Hudson River NERR consists of four components: Piermont Marsh, Iona Island, Tivoli Bay, and Stockport Flats.

H. NYSDEC General Water Quality Certification (WQC) Conditions applicable to all NWPs for which WQC has been provided are as follows:

1. Non-contamination of Waters
   • All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, resins, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate, inadvertent returns of drilling muds (frac-outs) or any other environmentally deleterious materials associated with the project.

2. Installation and Replacement of Culverts
To be covered under this blanket Water Quality Certification, all of the following criteria must be met:
   • Culvert pipes shall be designed to safely pass a 2% annual chance storm event.
   • This certification does not authorize the installation of any culverts that are not embedded beneath the existing grade of the stream channel.
   • Width of the structure must be a minimum of 1.25 times (1.25X) width of the Mean (Ordinary) High Water Channel.
   • The culvert bed slope shall remain consistent with the slope of the adjacent stream channel. For slopes greater than 3%, an open bottom culvert must be used.
   • This certification does not authorize work on culverts that provide sole access to "Critical Facilities": An individual WQC must be obtained for work on these culverts.
   • This certification does not authorize culvert rehabilitation projects that involve slip lining, or similar treatments.
   • This certification does authorize the rehabilitation of culverts utilizing Cure in Place Pipe Lining (CIPP) or concrete spray lining for culverts which currently meet Nationwide Permit General Condition # 2 - Aquatic Life Movements.

3. Discharge and Disturbance Limits of the Blanket WQC
   • For Nationwide Permits # 5, 7,12, 13, 14, 15, 18, 19, 23, 25, 29, 31, 32, 34, 36, 37, 39, 40, 42, 45, 46, 48, 51, utility line replacement projects under Nationwide Permit #3 and non-maintenance activities under Nationwide Permit #43.
   • The following discharge limits apply:

a) Temporary or permanent discharges of dredged or fill material into wetlands and other waters of the U.S. must not exceed ¼ acre;
b) Temporary or permanent impacts (i.e., loss) to stream beds must not exceed 300 linear feet.
c) The discharge area limit under paragraph (a) plus the equivalent stream impact area limit under paragraph (b) must not exceed ¼ acre total.

•For Nationwide Permits # 3, 4, 6, 20, 22, 27, 30, 33, 41 and maintenance activities under Nationwide Permit # 43, this certification authorizes discharges and disturbances up to the limit of the respective Nationwide Permit or regional conditions, whichever is most restrictive.

•If a project requiring coverage under two or more Nationwide Permits results in a temporary or permanent discharge or disturbance, the most restrictive threshold applies to the project.

4. Bulkheads
   - This certification does not authorize the construction of new bulkheads or vertical walls.
   - This certification does not authorize the waterward extension of existing bulkheads.
   - New toe-stone protection may not extend more than 36 inches waterward from the existing bulkhead face.

5. Maintenance of Water Levels
   - This certification does not authorize any activity that results in a permanent water level alteration in waterbodies, such as draining or impounding, with the exception of activities authorized by Nationwide Permit #27.

6. Dewatering
   - Authorized dewatering is limited to immediate work areas that are within coffer dams or otherwise isolated from the larger waterbody or waters of the United States.
   - Dewatering must be localized and must not drain extensive areas of a waterbody or reduce the water level such that fish and other aquatic organisms are killed, or their eggs and nests are exposed to desiccation, freezing or depredation in areas outside of the immediate work site.
   - Cofferdams or diversions shall not be constructed in a manner that causes or exacerbates erosion of the bed or banks of a waterbody.
   - All dewatering structures must be permanently removed and disturbed areas must be graded and stabilized immediately following completion of work. Return flows from the dewatering structure shall be as visibly clear as the receiving waterbody.

7. Endangered or Threatened Species
   - This certification does not authorize projects likely to result in the take or taking of any species listed as endangered or threatened species listed in 6 NYCRR Part 182.5 (a), (b) or projects likely to destroy or adversely modify the habitat of such species. Applicants must either verify that the activity is outside of the occupied habitat of such species or, if located within the habitat of such species, obtain a determination from the NYS Department of Conservation Regional Office that the proposed activity will not be likely to result in the take or taking of any species listed as endangered or threatened species listed in 6 NYCRR Part 182. Information on New York State endangered or threatened species may be obtained from the NYS Department of Environmental regional offices, the New York Natural Heritage Program in Albany, New York or on the DEC website at http://www.dec.ny.gov/animals/29338.html

   If it is determined that the project is likely to result in the take of (or modify the habitat of such species) a New York listed endangered or threatened species , then this blanket water quality certification is not applicable, and the applicant will need an individual water quality certification from the department.

8. Rare Mollusks

• This Certification may not be issued for and does not authorize disturbances or discharges to waters of the state listed as supporting mollusks S-1 or S-2 on the New York State Natural Heritage database. http://www.dec.ny.gov/animals/29338.html

9. Prohibition Period for In-water Work

In-water work is prohibited during the following time period:

• in cold water trout fisheries (waterbodies classified under Article 15 of New York State Environmental Conservation Law with a "t" or "ts" designation), beginning October 1 and ending May 31.

To determine if the prohibition period is in effect for a particular water, contact the Regional Natural Resources Supervisor in the appropriate New York State Department of Environmental Conservation regional office. Water Classification values can be determined on the DEC's Environmental Resource Mapper available on the Departments Website @ http://www.dec.ny.gov/gis/erm/ Work windows may be extended by the Regional Natural Resources Supervisor or their designee.

10. Significant Coastal Fish and Wildlife Habitat

• This certification does not authorize any discharge occurring in a designated Significant Coastal Fish and Wildlife Habitat area pursuant to 19 NYCRR Part 602; Title 19 Chapter 13, Waterfront Revitalization and Coastal Resources. https://www.dos.ny.gov/opd/programs/consistency/scfwhabitats.html

11. Coastal Erosion Hazard Areas

• This certification does not authorize projects in Coastal Erosion Hazard Areas, as identified in New York State Environmental Conservation Law Article 34, and its implementing regulations, 6 NYCRR Part 505. http://www.dec.ny.gov/lands/86541.html

12. State-owned Underwater Lands

Prior to undertaking any Nationwide Permit activity that will involve or occupy state-owned lands now or formerly under the waters of New York State, the party proposing the activity must first obtain all necessary approvals from:

New York State Office of General Services
Division of Real Estate Development
Corning Tower Building, 26th Floor
Empire State Plaza
Albany, NY 12242
Tel. (518) 474-2195

13. Tidal Wetlands

• This certification does not authorize any activities in tidal wetlands as defined in Article 25 of New York State Environmental Conservation Law, with the exception of activities authorized by Nationwide Permits # 4, 20 and 48. http://www.dec.ny.gov/lands/4940.html

14. Wild, Scenic and Recreational Rivers

• This certification does not authorize activities in any Wild, Scenic or Recreational River pursuant to 6 NYCRR Part 666 or state designated Wild, Scenic or Recreational River corridors. http://www.dec.ny.gov/permits/6033.html

15. Floodplains

• Authorized projects subject to this certification must first be in compliance with State and Local Floodplain Regulations prior to commencement of construction.

16. Public Service Commission
    - This certification does not authorize activities regulated pursuant to Article VII or Article 10 of the New York State Public Service Law. For such projects, Section 401 Water Quality Certification is obtained from the New York State Public Service Commission.

17. Utility Projects
    - This certification does not authorize maintenance or other activities associated with hydroelectric power generation projects.
    - This certification does not authorize the construction of substation facilities or permanent access roads in wetlands.
    - Excess materials resulting from trench excavation must be permanently removed from the waters of the United States and contained so that they do not re-enter any waters of the United States.

18. Preventing the Spread of Terrestrial and Aquatic Invasive Species
    - To prevent the unintentional introduction or spread of invasive species, the permittee must ensure that all construction equipment be cleaned of mud, seeds, vegetation and other debris before entering any approved construction areas within waters of the U.S. When using construction equipment projects authorized under this Certification shall take reasonable precautions to prevent the spread of aquatic invasive species as required under the provisions in ECL § 9-1710.

I. New York State Department of State (NYSDOS) Coastal Zone Management Consistency Determination Additional Information (applicable to all NWPs located within or affecting the NYS Coastal Zone):

Where NYSDOS has objected to the USACE consistency determination or where the project will not comply with the NYSDOS NWP specific condition(s), as outlined in the specific NWP listing in Section B above, the applicant must submit a request for an individual consistency determination to NYSDOS. See Section K for NYSDOS contact information.

Further Information:

- Unless NYSDOS issues consistency concurrence or USACE has determined that NYSDOS concurrence is presumed, NWPs are not valid within the Coastal Zone.

- All consistency concurrence determination requests must be submitted directly to NYSDOS with a copy provided to USACE with any required Preconstruction Notification submissions.

- Limits of the coastal zone and details regarding NYSDOS submission requirements, including application forms can be obtained at: https://www.dos.ny.gov/opd/programs/consistency/index.html

J. INFORMATION ON NATIONWIDE PERMIT VERIFICATION

Verification of the applicability of these Nationwide Permits is valid until March 18, 2022 unless the Nationwide Permit is modified, suspended revoked, or the activity complies with any subsequent permit modification.

It is the applicant's responsibility to remain informed of changes to the Nationwide Permit program. A public notice announcing any changes will be issued when they occur and will be available for viewing at our website: http://www.lrb.usace.army.mil/Missions/Regulatory.aspx.

Please note in accordance with 33 CFR part 330.6(b), that if you commence or are under contract to commence an activity in reliance of the permit prior to the date this Nationwide permit expires, is suspended or revoked, or is modified such that the activity no longer complies with the terms and conditions, you have twelve months from the date of permit modification, expiration, or revocation to complete the activity under the present terms and conditions of the permit, unless the permit has been subject to the provisions of discretionary authority.

Possession of this permit does not obviate you of the need to contact all appropriate state and/or local governmental officials to insure that the project complies with their requirements.

K. AGENCY CONTACT INFORMATION

NYS Department of Environmental Conservation

www.dec.ny.gov

NYS DEC REGION 1
Regional Permit Administrator
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409
(631) 444-0365

NYS DEC REGION 2
Regional Permit Administrator
1 Hunter's Point Plaza
47-40 21st Street
Long Island City, NY 11101-5407
(718) 482-4997

NYS DEC REGION 3
Regional Permit Administrator
21 South Putt Corners Road
New Paltz, NY 12561-1620
(845) 256-3054

NYS DEC REGION 4
Regional Permit Administrator
1130 North Westcott Road
Schenectady, NY 12306-2014
(518) 357-2069

NYS DEC REGION 4 Sub-Office
Deputy Regional Permit Administrator
65561 State Hwy 10
Stamford, NY 12167-9503
(607) 652-7741

NYS DEC REGION 5
Regional Permit Administrator
PO Box 296
1115 Route 86
Ray Brook, NY 12977-0296
(518)897-1234

NYS DEC REGION 5 Sub-Office
Deputy Regional Permit Administrator
PO Box 220
232 Golf Course Rd
Warrensburg, NY 12885-0220
(518) 623-1281

NYS DEC REGION 6
Regional Permit Administrator
317 Washington Street
Watertown, NY 13601-3787
(315) 785-2245

NYS DEC REGION 6 Sub-Office
Deputy Regional Permit Administrator
207 Genesee Street
Utica, NY 13501-2885
(315) 793-2555

NYS DEC REGION 7
Regional Permit Administrator
615 Erie Blvd. West
Syracuse, NY 13204-2400
(315)426-7438

NYS DEC REGION 7 Sub-Office
Deputy Regional Permit Administrator
1285 Fisher Avenue
Cortland, NY 13045-1090
(607) 753-3095

NYS DEC REGION 8
Regional Permit Administrator
6274 E. Avon - Lima Road
Avon, NY 14414-9519
(585) 226-2466

NYS DEC REGION 9
Regional Permit Administrator
270 Michigan Avenue
Buffalo, NY 14203-2915
(716) 851-7165

NYS DEC REGION 9 Sub-Office
Deputy Regional Permit Administrator
182 East Union Street
Allegany, NY 14706-1328
(716) 372-0645

NYS Department of State

Division of Coastal Resources
Consistency Review Unit
One Commerce Plaza
99 Washington Avenue, Suite 1010
Albany, NY 12231-00001
(518) 474-6000
https://www.dos.ny.gov/opd/programs/consistency/index.html

US Army Corps of Engineers

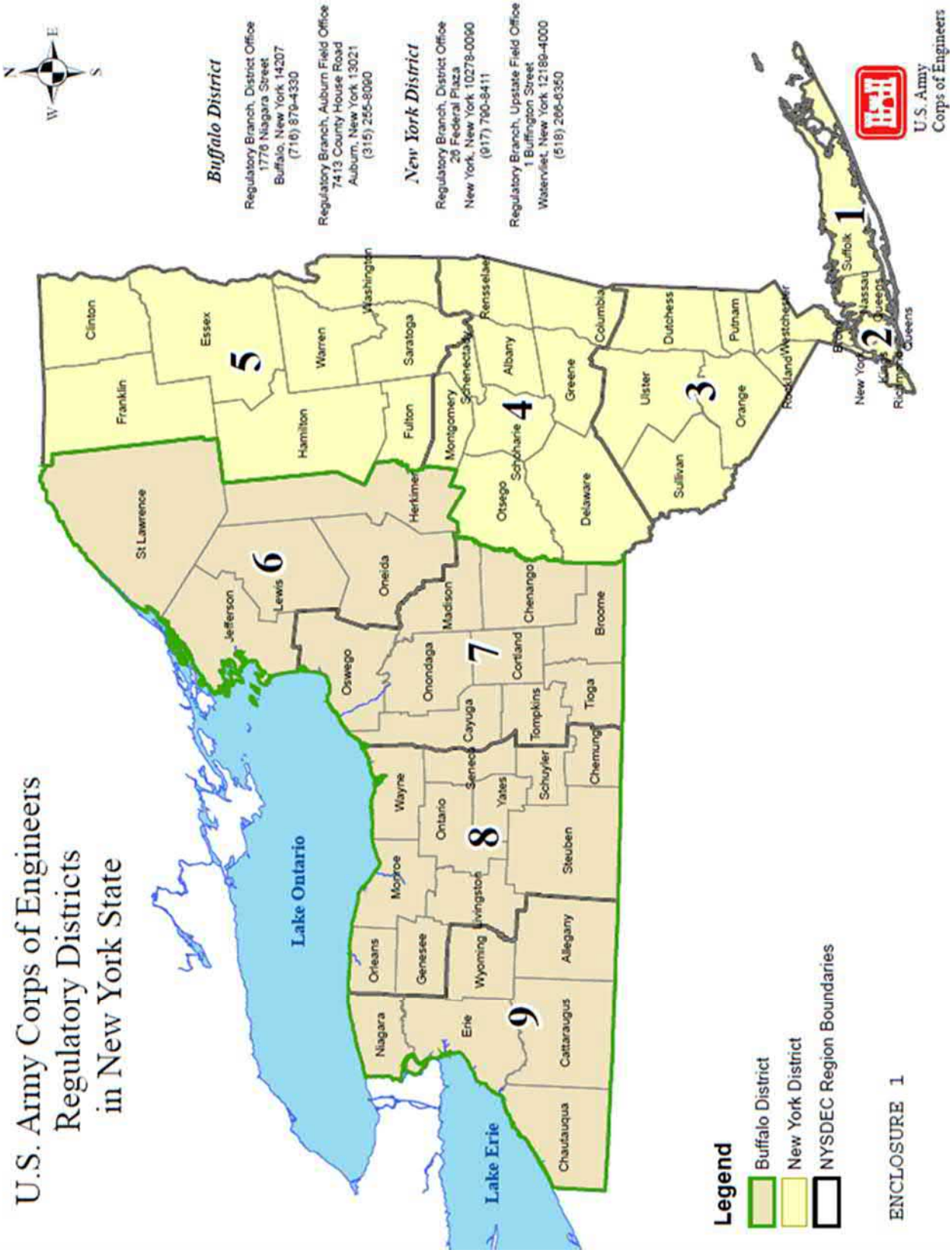
http://www.nan.usace.army.mil

(For DEC Regions 1, 2 and 3)
US Army Corps of Engineers NY District
ATTN: Regulatory Branch
26 Federal Plaza, Room 1937
New York, NY 10278-0090
Email: CENAN.PublicNotice@usace.army.mil
For DEC Regions 1, 2, Westchester County
and Rockland County (917) 790-8511
For the other counties of DEC Region 3 -
(917) 790-8411

(For DEC Regions 4, 5)
Department of the Army
ATTN: CENAN-OP-R
NY District, **Corps of Engineers**
1 Buffington Street
Building 10, 3rd Floor
Watervliet, NY 12189-4000
(518) 266-6350 - Permits team
(518) 266-6360 - Compliance Team

Email: cenan.rfo@usace.army.mil

(For DEC Regions 6, 7, 8, 9)
US Army Corps of Engineers
Buffalo District
ATTN: Regulatory Branch
1776 Niagara Street
Buffalo, NY 14207-3199
(716) 879-4330
Email: LRB.Regulatory@usace.army.mil
www.lrb.usace.army.mil


U.S. Army Corps of Engineers
Regulatory Districts
in New York State
Buffalo District
Regulatory Branch, District Office
1776 Niagara Street
Buffalo, New York 14207
(716) 879-4330
Regulatory Branch, Auburn Field Office
7413 County House Road
Auburn, New York 13021
(315) 255-8090
New York District
Regulatory Branch, District Office
26 Federal Plaza
New York, New York 10278-0090
(917) 790-8411
Regulatory Branch, Upstate Field Office
1 Buffington Street
Watervliet, New York 12189-4000
(518) 266-6350
U.S. Army
Corps of Engineers
Lake Ontario
Lake Erie
Clinton
Essex
Franklin
Hamilton
Warren
Washington
Saratoga
Fulton
Montgomery
Schenectady
Rensselaer
Albany
Columbia
Greene
Dutchess
Putnam
Ulster
Orange
Rockland
Westchester
Sullivan
Delaware
Otsego
Schoharie
Herkimer
St Lawrence
Jefferson
Lewis
Oneida
Madison
Chenango
Broome
Oswego
Onondaga
Cortland
Tioga
Cayuga
Tompkins
Chemung
Seneca
Yates
Schuyler
Wayne
Ontario
Steuben
Monroe
Livingston
Wyoming
Allegany
Orleans
Genesee
Niagara
Erie
Cattaraugus
Chautauqua
Suffolk
Nassau
Queens
Bronx
New York
Kings
Richmond
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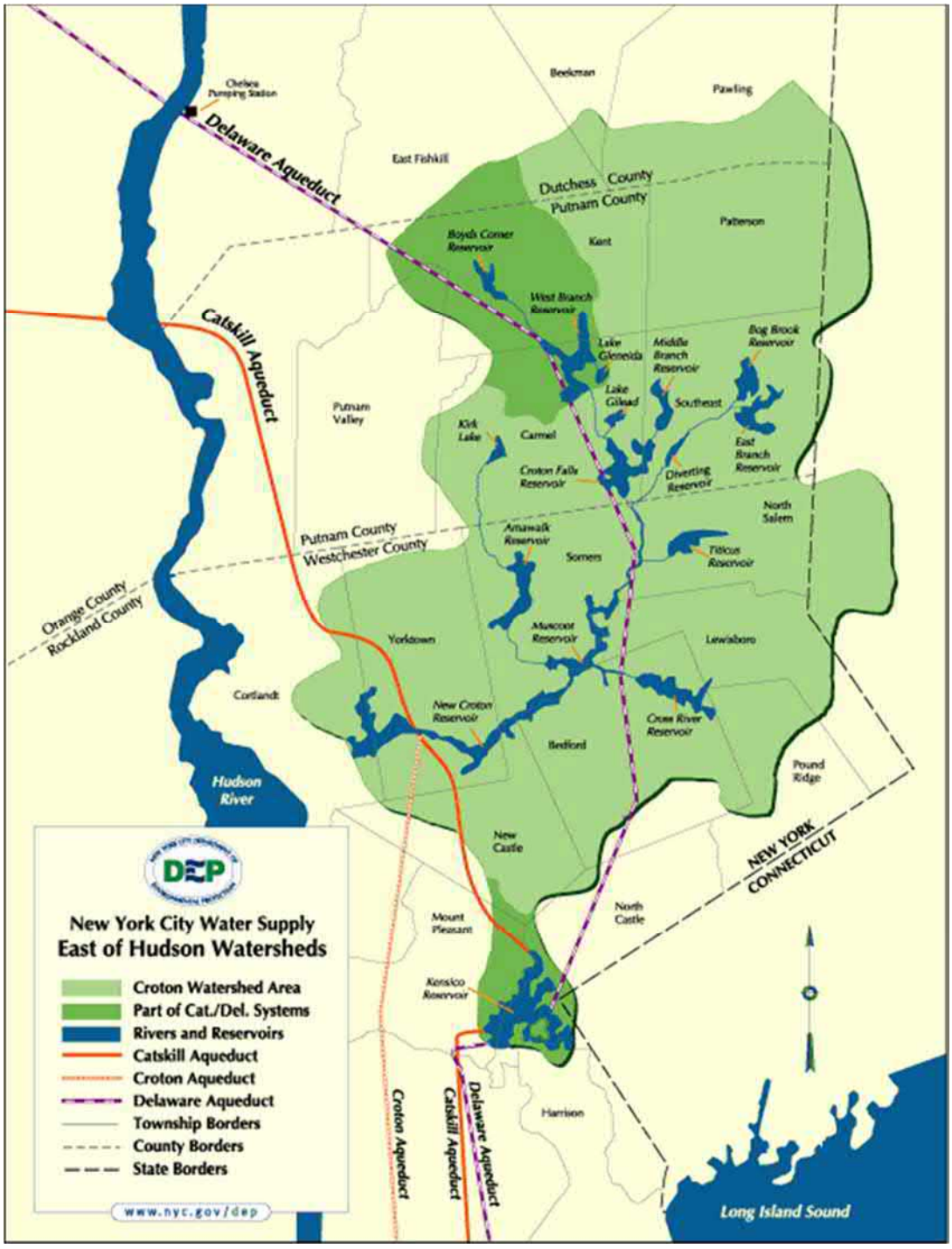
Legend
Buffalo District
New York District
NYSDEC Region Boundaries
ENCLOSURE 1

Final Regional Conditions, Water Quality Certification and Coastal Zone Concurrence for Nationwide Permit 14 – (Linear Transportation Projects) within the New York District Regulatory Boundary in the State of New York Expiration March 18, 2022

ENCLOSURE 2



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 U

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

Joint Application for Permit

October 2017

Barton & Loguidice

Exhibit 1: Joint Application Form, Permission to Inspect Property

NEW YORK STATE | Department of Environmental Conservation | Office of General Services | Department of State

US Army Corps of Engineers

JOINT APPLICATION FORM

For Permits for activities activities affecting streams, waterways, waterbodies, wetlands, coastal areas, sources of water, and endangered and threatened species.

You must separately apply for and obtain Permits from each involved agency before starting work. Please read all instructions.

1. **Applications To:**

>NYS Department of Environmental Conservation ☑ Check here to confirm you sent this form to NYSDEC.

Check all permits that apply:

- ☑ Stream Disturbance
- ☐ Excavation and Fill in Navigable Waters
- ☐ Docks, Moorings or Platforms
- ☐ Dams and Impoundment Structures
- ☑ 401 Water Quality Certification
- ☑ Freshwater Wetlands
- ☐ Tidal Wetlands
- ☐ Wild, Scenic and Recreational Rivers
- ☐ Coastal Erosion Management
- ☐ Water Withdrawal
- ☐ Long Island Well
- ☐ Incidental Take of Endangered / Threatened Species

>US Army Corps of Engineers ☑ Check here to confirm you sent this form to USACE.

Check all permits that apply: ☑ Section 404 Clean Water Act ☐ Section 10 Rivers and Harbors Act

Is the project Federally funded? ☐ Yes ☐ No

If yes, name of Federal Agency:

General Permit Type(s), if known: NWP # 14

Preconstruction Notification: ☑ Yes ☐ No

>NYS Office of General Services ☐ Check here to confirm you sent this form to NYSOGS.

Check all permits that apply:

- ☐ State Owned Lands Under Water
- ☐ Utility Easement (pipelines, conduits, cables, etc.)
- ☐ Docks, Moorings or Platforms

>NYS Department of State ☐ Check here to confirm you sent this form to NYSDOS.

Check if this applies: ☐ Coastal Consistency Concurrence

2. **Name of Applicant**

Ulster County

Taxpayer ID (if applicant is NOT an individual): 14-6002575

Mailing Address: PO Box 1800, 244 Fair Street

Post Office / City: Kingston

State: NY

Zip: 12402

Telephone: (845) 340-3800

Email: cwhi@co.ulster.ny.us

Applicant Must be (check all that apply): ☑ Owner ☐ Operator ☐ Lessee

3. **Name of Property Owner (if different than Applicant)**

Mailing Address

Post Office / City

State

Zip

Telephone

Email

For Agency Use Only	Agency Application Number:

4. **Name of Contact / Agent**

Thomas C. Baird/Barton and Loguidice, D.P.C.

Mailing Address	Post Office / City	State	Zip
10 Airline Drive, Suite 200	Albany	NY	12205

Telephone 518-218-1801 Email tbaird@bartonandloguidice.com

5. **Project / Facility Name**

Ashokan Rail Trail

Property Tax Map Section / Block / Lot Number:

Project Street Address, if applicable	Post Office / City	State	Zip
	Olive and Hurley, NY	NY	Multiple

Provide directions and distances to roads, intersections, bridges and bodies of water

11.5 miles east to west, north of the Ashokan Reservoir and south of NYS Route 28. Please see attached map.

☑ Town ☐ Village ☐ City

County	Stream/Waterbody Name
Olive and Hurley	Ulster	Various

Project Location Coordinates: Enter Latitude and Longitude in degrees, minutes, seconds:

Latitude: 41 ° 58 ' 35 " Longitude: 74 ° 11 ' 28 "

6. **Project Description:** Provide the following information about your project. Continue each response and provide any additional information on other pages. **Attach plans on separate pages.**

a. Purpose of the proposed project:

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 on an existing railroad corridor along the north side of the Ashokan Reservoir.

b. Description of current site conditions:

The site consists of an abandoned rail corridor which remains largely intact and in fair condition. Steel rail remains loosely attached to deteriorated wooden railroad ties. Trees have begun to encroach on the existing tracks. Several concrete and steel culverts require minor repair within the corridor. Two creek crossings (Butternut and Esopus) have become incapacitated due to lack of maintenance and will be spanned with steel bridges.

c. Proposed site changes:

The project includes removal of rail ties and rail, repurposing of the existing ballast for the trail base, addition of a stone mix top layer to enhance recreational use, construction of two pedestrian bridges, & maintenance & repair to existing culvert structures. The location of the project area is shown on the enclosed Figure 1. The alignment will remain the same as the existing rail corridor except for one area of wetland avoidance.

d. Type of structures and fill materials to be installed, and quantity of materials to be used (e.g., square feet of coverage, cubic yards of fill material, structures below ordinary/mean high water, etc.):

Proposed culvert repairs will be minor in nature and consist of concrete repairs and rip rap to fill scour holes at the majority of the locations. However, the failed culvert at Butternut Creek will be removed entirely to day-light and re-establish the creek. A new pedestrian bridge will span the Butternut. The Boiceville Bridge will be removed and replaced with a new Ped. bridge over the Esopus Creek. Further details are discussed in Exhibit 2.

e. Area of excavation or dredging, volume of material to be removed, location of dredged material placement:

No material is proposed to be dredged as a part of this project. However, rail ties, some ballast, concrete from the Butternut Culvert, and accessible portions of the damaged rail trestle will be removed. The materials will be properly disposed of, dependent on composition. Environmentally and structurally acceptable fill material may be re-purposed in areas where the trail will be built up to provide improved storm capacity and hydraulics.

f. Is tree cutting or clearing proposed? ☑ Yes If Yes, explain below. ☐ No

Timing of the proposed cutting or clearing (month/year): Oct. 1 - March 31st (see Exhibit 2)

Number of trees to be cut: 2,300 +/- Acreage of trees to be cleared: 1.9 +/- ACRE

g. Work methods and type of equipment to be used:

It will be necessary to utilize various heavy equipment. Specialized equipment such as a rail car designed for the removal of rails and ties rail may be used. Other equipment will likely consist of dump trucks, pickup trucks, excavators, small bulldozers, small graders, front end loaders, steel drum rollers, cranes, concrete trucks, and other small hand equipment.

h. Describe the planned sequence of activities:

Removal of live and dead trees would occur first beginning in Winter 2018, followed by removal of the rail and ties in spring 2018. As the trail construction is underway in summer 2018, culvert repairs would be progressed in conjunction with the trail, followed by the two pedestrian bridges in the fall of 2018. The final stone trail top surface would round out the construction in the spring of 2019.

i. Pollution control methods and other actions proposed to mitigate environmental impacts:

Concrete cutting will require a tented, filtered & ventilated system to contain concrete dust. Turbidity curtains for work in water will be employed, Concrete washouts will be set up with the appropriate buffers & closely monitored. Erosion & Sediment control is described below in (j). Storage of fuel will be at designated locations only approved by the NYCDEP. Sensitive & water course areas will be delineated with Orange Const. Fence.

j. Erosion and silt control methods that will be used to prevent water quality impacts:

Erosion Control - Straw, Mulch, re-vegetation, wood chips from onsite chipping and stabilization blankets will be utilized. Sediment control by use of fiber logs, silt fence, check dams. Post construction re-vegetation will be utilized to stabilize soil from erosion where applicable to NYSDEC standards and specifications. Please also refer to the SWPPP.

k. Alternatives considered to avoid regulated areas. If no feasible alternatives exist, explain how the project will minimize impacts:

To minimize impacts, the trail width has been reduced from the recommended 12' w/5' shoulders to just 10' w/0' shoulders adjacent to watercourse areas. Trail was re-routed around Wetland (O) (A 133+00) eliminating 10,000 SF of disturbance. Other re-routing was investigated, however, it would result in significant forest clearing and earth disturbance for little reduction in impact. impacts have been reduced to the fringe & edges of water areas.

l. Proposed use: ☐ Private ☑ Public ☐ Commercial

m. Proposed Start Date: January 2018 Estimated Completion Date: Spring 2019

n. Has work begun on project? ☐ Yes If Yes, explain below. ☑ No

o. Will project occupy Federal, State, or Municipal Land? ☑ Yes If Yes, explain below. ☐ No

The project will occupy the County's Ashokan Trail Easement

p. List any previous NYSDEC or USACE Permit / Application numbers for activities at this location:

Stream Disturbance - Under Article 15, Title 5 Permit ID 3-5199-00041/00003

q. Will this project require additional Federal, State, or Local permits, including zoning changes?

☑ Yes If Yes, list below. ☐ No

New York State Department of Transportation Highway Work Permit (HWP), New York State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity - GP-0-15-002

7. **Signatures.**
Applicant and Owner (If different) must sign the application.
Append additional pages of this Signature section if there are multiple Applicants, Owners or Contact/Agents.

I hereby affirm that information provided on this form and all attachments submitted herewith is true to the best of my knowledge and belief.

Permission to Inspect - I hereby consent to Agency inspection of the project site and adjacent property areas. Agency staff may enter the property without notice between 7:00 am and 7:00 pm, Monday - Friday. Inspection may occur without the owner, applicant or agent present. If the property is posted with "keep out" signs or fenced with an unlocked gate, Agency staff may still enter the property. Agency staff may take measurements, analyze site physical characteristics, take soil and vegetation samples, sketch and photograph the site. I understand that failure to give this consent may result in denial of the permit(s) sought by this application.

False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the NYS Penal Law. Further, the applicant accepts full responsibility for all damage, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and agrees to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from said project. In addition, Federal Law, 18 U.S.C., Section 1001 provides for a fine of not more than $10,000 or imprisonment for not more than 5 years, or both where an applicant knowingly and willingly falsifies, conceals, or covers up a material fact; or knowingly makes or uses a false, fictitious or fraudulent statement.

Signature of Applicant | Date: 9/27/2017

Applicant Must be (check all that apply): ☑ Owner ☐ Operator ☐ Lessee

Printed Name: Dennis Doyle | Title: Director, Ulster County Planning Dept.

Signature of Owner (if different than Applicant) | Date:

Printed Name: | Title:

Signature of Contact / Agent | Date: 10/13/17

Printed Name: Thomas C. Baird, P.E. | Title: Associate

For Agency Use Only **DETERMINATION OF NO PERMIT REQUIRED**

Agency Application Number:

_____ (Agency Name) has determined that No Permit is required from this Agency for the project described in this application.

Agency Representative:

Printed Name: | Title:

Signature: | Date:

Exhibit 2 and 2a: Project Description

Exhibit 2.

Project Description and Purpose

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 County owned former rail line along the north shore of the Ashokan Reservoir.

The project includes removal of rail ties and rail, repurposing of the existing ballast for the trail base, addition of a stone mix top layer to enhance recreational use, construction of pedestrian bridges, and maintenance to existing culvert structures. The location of the project area is shown in the enclosed Exhibit 3 – Project Figures. The alignment will remain the same as the existing rail corridor.

Regulated Resources

A wetland and stream delineation was conducted by Barton & Loguidice, D.P.C. (B&L) throughout the Project Corridor on June 28 and 29, 2016 and July 7, 2016.

Based on the field observations and data associated with each delineated wetland, 14 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 connectivity to any waters of the U.S. and appear to function as localized drainage ditches; however, 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 mapped wetland AS-20) or within the 100-foot buffer of these delineated wetland boundaries.

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 also regulated by the USACE under Section 404 of the Clean Water Act. There are six (6) NYSDEC mapped streams within the Project Corridor, each with a Class A designation. These 11 unmapped 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 quality and contribution to a drinking water source. See Exhibit 4, Wetland Delineation Report.

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 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 and proposed impacts are provided in Tables 1 through 4 and are displayed in Exhibit 9.

Impacts to wetlands and Waters of the U.S. have been avoided and minimized to the extent possible in order to design a safe and effective trail. The following table details work to occur within NYSDEC and USACE regulated waters. See Exhibit 5, Engineering Drawings, for Plan Sheets.

Table 1. B&L Delineated Stream Impacts

Please see updated table, 3/7/2018

Stream Number	DEC Mapped	STA.	Culvert Number	Plan sheet	Stream Length within Project Boundary (LF)	Stream Width (ft.)	Stream Area within Project Boundary (SF)	Temporary Stream Disturbance (LF)	Permanent Stream Disturbance (LF)	Permanent Stream Disturbance (SF)	Permanent Stream Disturbance (CY below OHWM)	Notes
1	-	A 516+92	3	PL-73	70	8	560	60	0	0	0.0	Surface repairs to concrete culvert
2	-	A 506+05	4	PL-71	90	3	270	60	40	200	4.0	Repair/replace concrete headwall and install stone apron at inlet and outlet
3	H-171-P 848-12	A 494+75	5	PL-70	180	10	1,800	100	24	80	10.0	Repair cracked concrete, surface repairs to culvert and install stone apron at outlet of culvert
4	-	A 459+06	7	PL-65	105	8	840	100	20	200	20.0	Repair cracked concrete, surface repairs to culvert, repair/replace concrete headwall and
5	-	A 436+60	9	PL-61	75	2	150	30	24	72	3.3	install stone aprons at inlet and outlet
6	H-171-P 848-11	A 409+25	12	PL-58	110	3	330	120	0	0	0.0	Repair cracked concrete and surface repairs to concrete
7	-	A 345+64	19	PL-48	120	3	360	50	20	100	5.0	Repair cracked concrete and install stone apron at outlet of culvert.
8	-	A 341+50	-	-	135	2	270	0	0	0	-	No in-stream work
9	-	A 315+00	21	PL-44	175	2	350	30	24	72	3.3	Install stone apron at inlet and outlet
10	H-171-P 848-10	A 291+08	22	PL-41	50	15	750	100	0	0	0.0	Repair cracked concrete
11	-	A 285+04	23	PL-40	80	15	1,200	20	0	0	0.0	Repair cracked concrete and surface repairs to concrete
-	Wetland AS-20	A 262+17	24	PL-37	35	10	350	40	0	0	0.0	Repair cracked concrete
12	H-171-P 848-9A	A 229+00	25	-	36	3	108	0	0	0	-	No proposed work
13	-	A 203+04	26	PL-28	40	3	120	30	24	18	3.3	Install stone apron at inlet and outlet
14	H-171-P 848-9	A 173+00	28	Butternut	130	15	1,950	300	250	N/A	N/A	Remove existing concrete arch culvert and install 75' bridge, daylight butternut creek
15	-	A 144+84	29	PL-20	85	3	255	40	20	330	40.0	Install stone apron at outlet and elevate stream bed to meet culvert invert
16	-	A 112+41	35	PL-15	125	3	375	240	120	900	-	Debris removal within culvert clogging existing flow through side-by-side steel pipes
17	H-171	A 30+00	-	Boiceville	250	225	54,605	400	150	4,100	600.0	Install new bridge abutments and piers, removal of old abutments, piers and construction of temporary causeway and cofferdam
							TOTAL:	1,720	566	6,072	689.0	

Table 2. Stream Impacts

Please see updated table, 3/7/2018

Stream Number	DEC Mapped	STA.	Culvert Number	Plan sheet	Project Boundary (LF)	(ft.)	Boundary (SF)	Disturbance (LF)	Disturbance (LF)	Disturbance (SF)	Permanent Stream Disturbance (CY below OHWM)	Notes
18	-	A 506+00	4	PL-71	See Stream #2 for impacts and calculations							
19	-	A 473+95	5	PL-67	46	3	138	0	0	0	0.0	No Proposed Work
20	-	A 465+50 to A 471+00	-	PL-65&66	900	3	2700	550	550	1,650	40.7	assumed 6" of fill below OHWM
21	-	A 465+50 to A 471+00	-	PL-65&66	900	3	2700	550	550	1,650	40.7	assumed 6" of fill below OHWM
22	-	A 423+25 to A 426+25	-	PL-60	350	5	1750	200	200	400	7.4	assumed 6" of fill below OHWM
23	-	A 345+64	19	PL-48	120	3	360	50	20	100	5.0	Install stone apron at outlet
24	-	A 341+00 to A 345+50	-	PL-48	135	4	540	0	0	0	0.0	No Proposed Work
25	-	A 286+00 to A 290+00	-	PL-40	0	4	0	0	0	0	0.0	No Proposed Work
26	-	A 285+04	23	PL-40	80	15	1200	20	0	0	0.0	See Stream #11
27	-	A 273+00 to A 278+00	-	PL-38&39	205	3	615	0	0	0	0.0	No Proposed Work
28	Wetland AS-20	A 262+17	24	PL-37	35	3	105	40	0	0	0.0	Repair cracked concrete
29	-	A 257+50 to A 260+00	-	PL-36	250	3	750	250	250	750	7.0	assumed 6" of fill below OHWM
30	-	A 257+50 to A 260+00	-	PL-36	250	3	750	250	250	750	7.0	assumed 6" of fill below OHWM
31	-	A 229+10 to A 253+75	-	PL-32 to PL-36	2465	3	7395	1,425	1,425	1,500	52.8	assumed 6" of fill below OHWM
32	-	A 239+50 to A 253+75	-	PL-33 to PL-36	1425	3	4275	1,425	1,425	1,500	52.8	assumed 6" of fill below OHWM
33	-	A 181+00 to A 196+00	-	PL-25 to PL-27	1500	3	4500	0	0	0	0.0	No Proposed Work
34	-	A 173+00 to A 178+00	-	PL-24	25	3	75	0	0	0	0.0	No Proposed Work
35	-	A 74+55	39	PL-10	100	5	500	45	0	360	0.0	Replace existing failed culvert
36	-	A 43+00 to A 45+00	-	PL-5	0	35	0	0	0	0	0.0	No Proposed Work
37	-	Access Rd	-	AP-1A	25	2	50	0	0	0	0.0	No Proposed Work
							TOTAL:	4,805	4,670	8,660	213.4	

Full culvert and bridge rehabilitation details and pictures are available in Exhibit 2a.

Where the trail crosses wetlands, methods will be utilized to ensure that the future flow of water will not be impeded nor will trail use negatively impact the water quality or overall quality of the wetlands. Wetland impacts are shown in Tables 3 and 4, below:

Table 3. Wetland Impacts

Please see updated table, 3/7/2018

Wetland designation	Plan Sheet	Boundary (sf)	Impacts (ft^2)	(acre)	Impacts (ft^2)	Volume of Fill in wetland (CY)	Volume of Fill in 100 ft. buffer (CY)
AS-20	PL-36 to 38	3,178	3,178	0.07	14,200	150	250
AS-19	PL-20 to 22	0	0	0	31,000	0	485
B&L Wetland M	PL-35 to 36	500	500	0.01	N/A	N/A	N/A
B&L Wetland N	PL-35 to 36	250	250	0.01	N/A	N/A	N/A
B&L Wetland O	PL-18 to 19	0	0	0.00	N/A	0	N/A
		TOTAL	3,928	0.09	45,200	150	735

Note 1: Wetlands not listed in this table are outside of the limits of the trail boundary and will not be impacted
Note 2: The project boundary line is coinceident with the limits of cut/fill through wetland areas

Table 4. Wetland Impacts

Please see updated table, 3/7/2018

Wetland designation	Plan Sheet	Area of wetland within project Boundary (sf)	Impacts (ft^2)	(acre)	Impacts (ft^2)	Volume of Fill in wetland (CY)	Volume of Fill in 100 ft. buffer (CY)
Q	PL-44 & 45	0	0	0.00	N/A	0	N/A
S	PL-42	0	0	0.00	N/A	0	N/A
T	PL-27	0	0	0.00	N/A	0	N/A
U	PL-24	0	0	0.00	N/A	0	N/A
V	PL-20	0	0	0.00	N/A	0	N/A
W	PL-19	0	0	0.00	N/A	0	N/A
X	PL-18 & 19	0	0	0.00	N/A	0	N/A
Y	PL-18	0	0	0.00	N/A	0	N/A
Z	AP-1A & AP-1B	0	0	0.00	N/A	0	N/A
		TOTAL	0	0.00	0	0	0

Note: Wetlands not listed in this table are outside of the limits of the trail boundary and will not be impacted
Note 2: The project boundary line is coinceident with the limits of cut/fill through wetland areas

As such, beyond the previously stated practices to avoid impacts, during construction, mats will be utilized to minimize soils impacts from heavy equipment in wetland areas. Additionally, as all the streams meet cold water fishery standards, no work will occur in-stream during the period of October 1st to May 31st.

State Environmental Quality Review Act (SEQRA)

Ulster County has determined the action is classified as a Type 1 action under the State Environmental Quality Review Act (SEQRA). The County created the Capital Project on December 15, 2015 with the intent to be Lead Agency on the same date. In thirty days the County became Lead Agency. A Full Environmental Assessment Form (FEAF) was circulated to all potential involved agencies in August of 2016. The County anticipates adopting a Negative Declaration in November 2017. See Exhibit 6 for Part 1 of the Full Environmental Assessment and other SEQR forms and documents.

Archaeological/Historic and Cultural Resource Coordination

During the preliminary stages of the project, a State Historic Preservation Office (SHPO) Cultural Resource Information System (CRIS) query was submitted as part of SEQR coordination. A letter was received on October 3rd, 2016 stating that the project will have No Adverse Impact on the historic Ulster and Delaware project corridor providing a Preservation Plan be developed, historic interpretation be utilized along the trail, and preliminary plans be submitted to SHPO for review of these features. It is the Counties intent to meet all of SHPO's requirements and to make this an educational project for the public to learn about the construction of the Ashokan Reservoir and the towns and villages that were displaced by the reservoir. See Exhibit 7 for a copy of this correspondence.

Threatened and Endangered Species Recommendations

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*). Woody vegetation, including shrubs <3" intermixed with larger DBH trees, are proposed for clearing throughout the linear length of trail. See section titled "Tree Clearing Activities" for additional details regarding the number and types of trees to be cut. 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.

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. Wetland O, which will be avoided by this project, 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 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. 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.” See Exhibit 8 for the Threatened and Endangered Species Memo. For this project, less than 20 White Pine Trees within the DBH range of 4” to 14” will be cut for trail construction purposes within the immediate vicinity of the proposed trail (within 10 ft. of the Centerline of the trail). See section titled “Tree Clearing Activities” for additional details regarding the number and types of trees to be cut.

Tree Clearing Activities

In August of 2017, B&L and the County delineated trees that needed to be removed for the construction of the trail and hazard trees that were dead and could pose a threat to property or life if it were to fall onto the trail. In total, approximately 2,300 trees were identified along the 11.5 miles of trail that should be cut for construction of the trail and the safety of its users. In addition, nearly 2.0 acres of trees will need to be cut in the areas of the Butternut Creek stream daylighting, Wetland O avoidance, and the Boiceville Bridge construction. It is noted that of the 2,300 trees to be cut, over 2,100 of the trees were categorized as dead, down or stressed meaning that less than 200 trees to be cut are healthy. These specific counts do not include the areas to be cleared to construct the new stream-daylighting bridge at Butternut Cove or the replacement structure over the Esopus Creek or the wetland avoidance. See the table A1 and A2 below for a summary of the species of trees to be cut and their status.

"TABLE A1"						
Dead Standing						
DBH/Species	4-14[1]	4-8[2]	9-14[2]	15-24[3]	25-34[3]	35-44[3]
Ash	745	447	513	112	5	0
Pine	50	28	6	2	0	0
Maple	0	5	1	0	0	0
Oak	1	1	5	0	0	0
Birch	2	6	5	0	0	0
Other	3	9	14	2	0	0
Subtotal:	801	496	544	116	5	0
Down						
DBH/Species	4-14[1]	4-8[2]	9-14[2]	15-24[3]	25-34[3]	35-44[3]
Ash	12	0	3	2	0	0
Pine	2	0	0	0	0	0
Maple	2	0	1	0	0	0
Oak	1	0	1	0	0	0
Birch	4	0	1	0	0	0
Other	3	0	1	0	0	0
Subtotal:	24	0	7	2	0	0
Stressed						
DBH/Species	4-14[1]	4-8[2]	9-14[2]	15-24[3]	25-34[3]	35-44[3]
Ash	3	17	43	8	0	1
Pine	19	2	1	1	0	0
Maple	0	0	0	0	0	0
Oak	1	1	0	0	0	0
Birch	3	2	1	0	0	0
Other	6	0	3	0	0	0
Subtotal:	32	22	48	9	0	1
Alive						
DBH/Species	4-14[1]	4-8[2]	9-14[2]	15-24[3]	25-34[3]	35-44[3]
Ash	2	0	2	1	0	0
Pine	28	0	0	0	0	0
Maple	63	7	2	1	0	0
Oak	4	1	3	0	0	0
Birch	56	4	0	0	0	0
Other	7	3	0	2	0	0
Subtotal:	160	15	7	4	0	0

[1] DBH range measured in 4"-14" from Milepost K10 to K14

[2] DBH range measured from 4"-8" and 9"-14" from Milepost K14 to K21.5 for additional clarification

[3] DBH range measured for entire corridor

TOTAL:	1017	533	606	131	5	1

GRAND TOTAL: 2293

"TABLE A2"	
CLEARING AREAS	
CLEARING AREA #	ACRE
1	0.29
2	0.54
3	0.34
4	0.73
Subtotal:	1.90

Watercourse Mitigation and Avoidance

Each delineated and identified wetland, stream, or watercourse will be marked with blue flagging, tape and in tighter areas, orange construction fencing. Limits of work will be specifically identified in the Stormwater Pollution Prevention Plan (SWPPP), the construction plans, and referred to in the contract documents as areas where no disturbance shall occur.

Project Design Modifications to reduce environmental impacts

The initial project design was developed utilizing AASHTO Guidelines for the Development of Bicycle and Pedestrian Facilities and the NYSDOT Highway Design Manual sections on bicycle and pedestrian facilities. The guidelines recommend, for two-way operation, a trail width of 10' minimum with 12' as the desirable trail width. Determining the appropriate width of the trail is based on many factors such as: There will be limited access to the trail for emergency vehicles with up to 3 miles between vehicle access points with emergency vehicles needing to travel along the trail for more than 2 miles to access some locations. The trail is also expected to attract a high volume of users. Considering the expected high volume use of the trail with two-way operation, and the need to provide adequate width for emergency vehicles, a width of 12' is required for the majority of the system. The AASHTO guidance also recommends stabilized shoulders, 5' in width, on both sides of the trail also be included as part of the trail section. The use of the shoulders were part of the original county design to ensure conformance to the guidance available and help determine impacts and feasibility. During the review process, the NYC Department of Environmental Protection (NYCDEP) identified additional track side water courses that were of concern and required that little to no impact occur in these areas. In multiple meetings and discussions with the NYCDEP), the only practical solution was to eliminate the shoulders, shift the trail horizontally, and in some cases vertically to minimize impacts to these sensitive areas. The revisions move the trail slightly from the original railroad alignment, however, the changes have will result in a significant reduction in water type impacts.

The following discussion briefly describes the process utilized to help minimize impacts to waters of the United States in specific locations.

General Information Applicable to all Sections:

- B&L has delineated wetlands and water courses in the project area. That delineation has been supplemented by the New York City Department of Environmental Protection (NYC DEP) and is included in the figures and cross sections in Exhibit 9.

  In response to the environmental concerns of the trail construction, design revisions in areas where potential impacts may exist to water courses, wetlands, swales, streams, vegetation, etc., may occur, have been made. They include:

  1. The trail shoulders were originally designed to be 5' wide in accordance with the AASHTO Design Guide for Bicycle and Pedestrian Facilities. They have been reduced to 0' in all areas where potential impacts to water courses, wetlands, swales, streams, and other sensitive areas may occur.
  2. The trail location has been revised horizontally and vertically to the extent practical to also help reduce environmental impacts.
  3. The Trail width has been reduced to a minimum of 10' where impacts to NYSDEC wetlands have been delineated and where wetlands have been delineated by NYC DEP.
  4. Note that a 1' wide structural backup to the trail section on both sides will be included to each trail width specified as this is required to support the trail section. A 12' wide trail will have 14' of width installed, a 10' wide trail will have a 12' width installed. Over a few years these 1' wide edges will become rounded to blend into the sideslopes and help with the long term stabilization of the slopes.
  5. The removal of the rail and ties will require a minimum 10' wide disturbance (5' on either side from the center of the track) since the ties are 8' in width. This can be achieved only in limited stretches and will be required / applied in the work areas that are entirely within a wetland. Otherwise the disturbance width is expected to be 6' on each side from the center of the tracks for a width of 12'.
  6. Existing drainage patterns will be retained in all cases/locations.
  7. Trees and brush that inhibit flow, would become destabilized and hazardous during a heavy flow, or are diseased will be removed as part of the tree clearing operations expected to take place beginning in December 2017. We understand that a forested ground cover is desirable to resist erosion and will leave these areas intact as much as possible.

<u>The following sections provide a description of the revisions and expected impact areas based on the delineations by B&L and NYC DEP. In all cases, the potential impacts will be minimized</u>

Wetlands Station An131+00 to A 141+50 – 1050 Linear Feet (B&L Wetland O and DEP Wetland I)

Avoidance – Re-routing the trail was investigated and it was determined that an 800' long section of trail can be relocated to minimize impact between Stations A132+00 to A140+00. This has resulted in a reduction in impact of approximately 8,680 Square Feet (SF) (0.20 Acres).

Impact Reduction Measures

- The trail shoulders have been reduced to 0'.
- The trail was shifted opposite of the wetland side from Station 131+00 to Station 133+50 and from Station A138+60 to A141+50 resulting in no expected impacts from Station A131+00 to A141+50

Result: Impact of approximately 500 SF to DEP Wetland H and 50 SF to DEP Wetland I from STA A. 132+00 to N 11+00 and reduction of 8,680 SF

Station A181+00 to A196+00 – 1,500 Linear Feet (DEP Stream #16)

Impact Reduction Measures

- The trail shoulders have been reduced to 0'.
- The trail was shifted from 1 to 3 feet to the non-wetland side along the section Total width of stone surface, accounting for the 1' structural backups will be 14'

Result: No Impact

Station A229+10 to A253+75 – 2,465 Linear Feet (DEP Stream #14 & #15)

- There is a stream delineated that is out of the proposed work or disturbance area between Station A229+10 to A236+75. There will be no impacts to this stream.
- Beginning at A236+75 to A239+50, the trail width will be reduced to a 12' wide trail with no shoulders and 1' wide structural backups for a total width of 14' and will also be shifted to avoid all impacts.
- Beginning at Station A239+50 and extending to Station A253+75, the trail width will reduce to a 10' width with 1' wide structural backups for a total width of 12'. Stone to stabilize the edge of the trail will be placed at the edge of the swale on both sides of this segment. Existing drainage patterns will be retained and not disrupted.

Result: Impact in the section from A239+50 to A253+75 includes the installation of crushed stone to stabilize the trail and foundation. The stone will be placed at the fringe of this area resulting in a 1' wide maximum impact that will not disrupt existing

drainage patterns or flows. A conservative area of potential impact along this section is 3,000 Square Feet (SF). Orange construction fence will border the area during construction and this area will also be signed as a sensitive area that will inform the trail users of the benefits of preserving wetlands and that leaving the trail is prohibited in this area. The trail will also visibly narrow in this section when approaching it from both directions. By providing a shoulder width of 1' to 2' approaching this sensitive section, the narrowing will appear more dramatic and provide an element of traffic calming and awareness.

Wetlands Station A253+75 to A255+75 – 200 Linear Feet (B&L Wetland M & N)

Avoidance: Re-routing the trail was investigated, however, in order to re-route the trail, extensive impacts to the established and stabilized forest would be required. It is our recommendation that the trail be constructed in the relatively same location and to narrow the trail section to minimize impacts.

Impact Reduction Measures:

- The trail shoulders have been reduced to 0'.
- The trail was shifted horizontally to minimize impacts.
- The trail width was narrowed to 10'. Total width of stone surface will be 12'. The stone base will be as wide as 19' since it is necessary to elevate the trail approximately 1' to ensure the trail surface is not underwater and to accommodate the shifting. The stone utilized in the base will be porous and is a 40-45% air void crushed stone that will allow passage of water if desired.
- Stone to stabilize the edge of the trail will be placed at the fringe of the swale/wetland on both sides of this segment. Existing drainage patterns will be retained.

Results: Impact in the stretch from A253+75 to A255+75 has been measured using Computer Aided Design and, 3D Modeling, and cross section review to determine that a conservative impact of 500 SF to B&L Wetland M and an impact of 250 SF to B&L Wetland N.

Station A257+50 to A260+00 – 250 Linear Feet (DEP Stream #12 & 13)

Avoidance: Re-routing the trail was investigated, however, a re-route is not practical as there would be impacts to the established and stabilized forest adjacent to this section. It is our recommendation that the trail be constructed with minor shifting and to narrow the trail section to minimize impacts.

Impact Reduction Measures:

- The trail shoulders have been reduced to 0'.
- The trail was shifted horizontally to balance the drainage paths.
- The trail width was reduced to 10'
- The stone base will be as wide as 18' since it is necessary to elevate the trail approximately 1.0' to ensure the trail surface is not underwater.
- Stone to stabilize the edge of the trail will be placed at the fringe of the swale on both sides of this segment. Existing drainage patterns will be retained.

Results: Stone will be placed in the stretch from A257+50 to A260+00 and will include a conservative average width of 3' on each side of the trail as a potential impact area for a total of 1,500 Square Feet (SF).

Wetlands Station A261+50 to A270+00 – 850 Linear Feet (B&L Wetland K & L, DEC Wetland AS-20)

In this section, the delineated wetlands meander along the first 500 feet to approximately Station A265+00. From A265+00 to approximately A270+00 the wetland runs longitudinally outside the limits of the existing track, ties, and ballast on both sides of the proposed trail.

Avoidance: Re-routing the trail was investigated, however, in order to re-route the trail, extensive impacts to the established and stabilized forest would be required. Additionally, if the trail was re-routed, the existing creosote ties would not be removed and disposed. It is our recommendation that the ties be removed and the trail be constructed in the relatively same location and to narrow the trail section to minimize impacts.

Impact Reduction Measures:

- The trail shoulders have been reduced to 0'.
- The trail was shifted horizontally to minimize impacts.
- The trail width was narrowed to 10' with a total width of stone surface to be 12'.
- Stone to stabilize the edge of the trail will be placed at the edge of the swale or wetland on both sides of this segment. Existing drainage patterns will be retained.

Results: The wetland areas are not uniformly shaped and were derived utilizing the GIS data and the computer to determine a total impact area of no more than 7,775 Square Feet (SF).

Station A340+75 to A341+25 - 50 Linear Feet (B&L Wetland F)

Impact Reduction Measures:

- The trail was shifted horizontally to eliminate potential impacts.

Result: No Impact

Station A423+25 to A425+25 – 200 Linear Feet (DEP Stream #5)

This section is located within an earth cut area and includes the installation of a new culvert pipe to convey the stormwater runoff from Route 28 on the north side of the tracks to the south side of the tracks where the DEP delineated stream is located. The stormwater currently appears to flow over the tracks and into the DEP delineated stream on the south side.

Avoidance – Re-routing the trail was investigated, however, determined not practical due to the terrain and presence of minor amounts of rock and cut slopes on both sides of the trail. It is our recommendation that the trail be constructed in the relatively same location and to narrow and shift the trail section to minimize impacts.

Impact Reduction Measures:

- The trail shoulders have been reduced to 0'.
- The trail was shifted horizontally to minimize and possibly avoid impacts
- Stone to stabilize the edge of the trail will be placed at the edge of the existing swale on both sides of this segment. Existing drainage patterns will be retained.
- The limit of the stone aprons for the new culvert to be installed has been reduced to minimize impacts to the existing stream.

Results: Stone will be placed along this section from A423+25 to A425+25 on south side of the trail and will include a conservative average width of 2' of crushed stone fill on the stream side of the trail for a total of 400 Square Feet (SF) potential impact area.

Station A465+50 to A471+00 – 550 Linear Feet (DEP Stream #3 & #4)

This section is located within a rock cut area.

Avoidance – Re-routing the trail was investigated, however, determined not practical due to the terrain and presence of significant rock formations on both sides of the trail. It is our recommendation that the trail be constructed in the relatively same location and to narrow the trail section to minimize impacts.

Impact Reduction Measures:

- The trail shoulders have been reduced to 0'.

- The trail width was narrowed to 10' with a total width of stone surface to be 12' including a 1' structural trail backup on both sides of the 10' trail.
- The trail was shifted horizontally to balance the drainage paths.
- Stone to stabilize the edge of the trail will be placed at the edge of the existing swale on both sides of this segment. Existing drainage patterns will be retained.

Results: Stone will be placed along this section from A465+50 to A471+00 on both sides of the trail and will include a conservative average width of 3' of crushed stone fill on each side of the trail for a total of 3,300 Square Feet (SF) potential impact area.

Various culvert Installation, Maintenance and Repairs

Numerous concrete and steel culverts exist throughout the railroad corridor. B&L has assessed the conditions of each culvert and determined which repairs are necessary to extend the service life of each culvert. The majority of the culverts require minimal work such as installing a reduced size stone apron at the outlet of the culvert, or minor crack and spalled concrete repairs within the barrel of the culvert. The stone apron installation was chosen to be installed in areas where the outlets of the culverts display signs of erosion and scour. The stone aprons will reduce the velocity of the water therefore limiting the amount of erosion that occurs within the stream channel. The stone will also fill in existing scour pools at the outlet of the culverts.

There are 2 examples where a new culvert needs to be installed within a delineated stream. At Station A 74+55, the existing twin 24" steel culverts have failed and have become plugged with debris and separated. A new 36" Smooth Interior Corrugated Polyethylene Pipe will be installed at this location to restore flow beneath the tracks. The other location, Station A 423+25, is where runoff from the adjacent Route 28 has caused a channel to form that flows down into the depressed railroad corridor. The delineated stream flows up over the tracks and to the low area on the other side of the tracks. A smooth interior corrugated polyethylene pipe will be also installed in this location to convey the runoff below the trail.

Impacts for the various types of culvert work are listed in Tables.

Results: The impacts associated with the aforementioned culvert installation, maintenance, and repairs is 2,382 Square Feet (SF) of potential impact area.

Total Maximum Impact to Wetlands and Watercourses:

The total impact is 19,707 SF or 0.45 Acres.

Staging and Construction lay-down areas will be located in less sensitive areas away from water courses and in locations mutually agreeable by Ulster County and the NYC DEP. It is anticipated

there will be 12 such locations (1 per mile) along the project corridor. Larger stockpile areas will be located at the future site of improvements proposed by NYCDEP. These are located at the Woodstock Dike area (Station A 615+00 and Shokan Station (Approximately Station A295+00).

Table Updated 3/7/2018

Table 1. B&L Delineated Stream Impacts													
Stream Number	DEC Mapped	STA.	Culvert Number	Plan sheet	Length of Stream within Project Boundary (LF)	Stream Width (ft.)	Area of Stream within Project Boundary (SF)	Temporary Stream Disturbance (LF)	Permanent Stream Disturbance (LF)	Temporary Stream Disturbance (SF)	Permanent Stream Disturbance (SF)	Permanent Stream Disturbance (CY below OHWM)	Notes
1	-	A 516+92	3	PL-73	70	8	560	60	0	180	0	0.0	Surface repairs to concrete culvert
2	-	A 506+05	4	PL-71	90	3	270	60	40	180	200	4.0	Repair/replace concrete headwall and install stone apron at inlet and outlet
3	H-171-P 848-12	A 494+75	5	PL-70	180	10	1,800	150	24	1,200	80	10.0	Repair cracked concrete, surface repairs to culvert and install stone apron at outlet of culvert
4	-	A 459+06	7	PL-65	105	8	840	135	20	1,080	200	20.0	Repair cracked concrete, surface repairs to culvert, repair/replace concrete headwall and install stone apron at outlet of culvert.
5	-	A 436+60	9	PL-61	75	2	150	50	24	100	72	3.3	install stone aprons at inlet and outlet
6	H-171-P 848-11	A 409+25	12	PL-58	110	3	330	100	0	1,000	0	0.0	Repair cracked concrete and surface repairs to concrete
7	-	A 345+64	19	PL-48	120	3	360	85	20	255	100	5.0	Repair cracked concrete and install stone apron at outlet of culvert.
8	-	A 341+50	-	-	135	2	270	0	0	0	0	-	No in-stream work
9	-	A 315+00	21	PL-44	175	2	350	60	24	120	72	3.3	Install stone apron at inlet and outlet
10	H-171-P 848-10	A 291+08	22	PL-41	50	15	750	40	0	400	0	0.0	Repair cracked concrete
11	-	A 285+04	23	PL-40	80	15	1,200	70	0	210	0	0.0	Repair cracked concrete and surface repairs to concrete
-	Wetland AS-20	A 262+17	24	PL-37	35	10	350	25	0	250	0	0.0	Repair cracked concrete
12	H-171-P 848-9A	A 229+00	25	-	36	3	108	0	0	0	0	-	No proposed work
13	-	A 203+04	26	PL-28	40	3	120	30	24	30	18	3.3	Install stone apron at inlet and outlet
14	H-171-P 848-9	A 173+00	28	BN-2	130	15	1,950	300	250	2,250	N/A	N/A	Remove existing concrete arch culvert and install 75' bridge, daylight butternut creek
15	-	A 144+84	29	PL-20	85	3	255	105	20	420	330	40.0	Install stone apron at outlet and elevate stream bed to meet culvert invert
16	-	A 112+41	35	PL-15	125	3	375	0	0	0	0	-	Debris removal within culvert clogging existing flow through side-by-side steel pipes
17	H-171	A 30+00	-	BV-2	250	225	54,605	400	150	9,935	3,700	600.0	Install new bridge abutments and piers, removal of old abutments, piers and construction of temporary causeway and cofferdam.
							SUBTOTAL (streams 1-17):	1,670	596	17,610	4,772	689	

Table Updated 3/7/2018

Table 2. DEP Delineated Stream Impacts													
Stream Number	DEC Mapped	STA.	Culvert Number	Plan sheet	Length of Stream within Project Boundary (LF)	Stream Width (ft.)	Area of Stream within Project Boundary (SF)	Temporary Stream Disturbance (LF)	Permanent Stream Disturbance (LF)	Temporary Stream Disturbance (SF)	Permanent Stream Disturbance (SF)	Permanent Stream Disturbance (CY below OHWM)	Notes
18	-	A 506+05	4	PL-71	See Stream #2 for impacts and calculations								
23	-	A 345+64	19	PL-48	See Stream #7 for impacts and calculations								Repair cracked concrete and install stone apron at outlet of culvert.
26	-	A 285+04	23	PL-40	See Stream #11 for impacts and calculations								See Stream #11
28	Wetland AS-20	A 262+17	24	PL-37	35	3	105	25	0	250	0	0.0	Repair cracked concrete
31	-	A 229+10 to A 253+75	-	PL-32 to PL-36	2465	3	7395	1,425	1,425	0	1,500	52.8	assumed 6" of fill below OHWM
32	-	A 239+50 to A 253+75	-	PL-33 to PL-36	1425	3	4275	1,425	1,425	0	1,500	52.8	assumed 6" of fill below OHWM
35	-	A 74+55	39	PL-10	100	5	500	45	0	0	0	0.0	Replace existing failed culvert
						SUBTOTAL (streams 18-37):		2,920	2,850	250	3,000	106	
						TOTAL (streams 1-37):		4,590	3,446	17,860	7,772	795	

Table Updated 3/7/2018

Table 3. Wetland Impacts								
Wetland designation	Plan Sheet	Area of Wetland within project Boundary (sf)	Direct Permanent Impacts (ft^2)	Impacts (acre)	100 Ft. Buffer Impacts (ft^2)	Volume of Fill in wetland (CY)	Volume of Fill in 100 ft. buffer (CY)	Notes
AS-20	PL-36 to 38	2,363	2,363	0.05	14,200	150	250	
AS-19	PL-20 to 22	0	0	0	31,000	0	485	
B&L Wetland M	PL-35 to 36	500	500	0.01	N/A	N/A	N/A	
B&L Wetland N	PL-35 to 36	250	250	0.01	N/A	N/A	N/A	
B&L Wetland O	PL-18 to 19	0	0	0.00	N/A	0	N/A	
		TOTAL	3,113	0.07	45,200	150	735	

Note 1: Wetlands not listed in this table are outside of the limits of the trail boundary and will not be impacted

Note 2: The project boundary line is coinceident with the limits of cut/fill through wetland areas

Table Updated 3/7/2018

Table 4. Wetland Impacts								
Wetland designation	Plan Sheet	Area of Wetland within project Boundary (sf)	Direct Permanent Impacts (ft^2)	Impacts (acre)	100 Ft. Buffer Impacts (ft^2)	Volume of Fill in wetland (CY)	Volume of Fill in 100 ft. buffer (CY)	Notes
Q	PL-44 & 45	0	0	0.00	N/A	0	N/A	
S	PL-42	0	0	0.00	N/A	0	N/A	
T	PL-27	0	0	0.00	N/A	0	N/A	
U	PL-24	0	0	0.00	N/A	0	N/A	
V	PL-20	0	0	0.00	N/A	0	N/A	
W	PL-19	0	0	0.00	N/A	0	N/A	
X	PL-18 & 19	0	0	0.00	N/A	0	N/A	
Y	PL-18	0	0	0.00	N/A	0	N/A	
Z	AP-1A & AP-1B	0	0	0.00	N/A	0	N/A	
		TOTAL	0	0.00	0	0	0	

Note: Wetlands not listed in this table are outside of the limits of the trail boundary and will not be impacted

Note 2: The project boundary line is coinceident with the limits of cut/fill through wetland areas

Exhibit 2a.

General Details

In-stream timing restrictions are expected to be in place for the proposed work based on any stream designated as a cold water trout fishery (waterbodies classified with t or ts designation), prohibiting work between October 1st and May 31st.

Temporary waterway diversion structures (also known as cofferdams) will be utilized where necessary during repairs so that all work is completed in the dry. All debris from removal of existing concrete and all new concrete used to complete the repairs will be contained and protected so they do not escape and enter waters. The waterway diversion structures will likely be composed of multiple sandbags as needed to divert current stream flows. However, the exact materials and methods used will be determined by the contractor prior to construction. The County, B&L and NYCDEP will review the contractor's means and methods for waterway diversion prior to beginning construction to ensure that all work will be completed in the dry and the risk of impacts to existing water courses are as minimal as reasonably feasible.

In order to complete the repairs, the contractor may need to construct temporary access from trail elevation to invert elevation to deliver manpower, materials, and equipment to the culverts. The entire length of the access, if required, will be outside of the bed and banks of any stream features. The contractor will be required to restore areas affected by the temporary access to their pre-construction conditions upon completion of work at this culvert. All areas will have before and after photographs taken to ensure restoration.

Generally, temporary impacts include placement of a temporary waterway diversion structures that will provide the contractor with dry ground on which to work and will protect debris and construction materials from washing into the stream. It is anticipated that repairs will be completed on one half each culvert at a time and adjusted to allow for work on the opposing side. Appropriate erosion and sediment control measures will be used post construction as shown on drawing ESCP-61.

All temporary measures installed to support construction (cofferdams, causeway materials, temporary fill for access roads) will be removed upon completion of that portion of construction. Any areas along the stream banks that have been disturbed during construction will be restored to preconstruction conditions and documented by pre and post photographs.

Culvert Specifics

B&L Stream #1, Culvert #3 (Drawing PL-73)

Existing Conditions:

Culvert #3 is a concrete arch culvert that measures 4 feet wide, 6 feet tall, and 55 feet in length. The culvert appears to be founded on soil with no bottom slab. Headwalls and wingwalls have been integrally cast and are located at the upstream and downstream end of the culvert and serve to retain trail fill from atop the arch and backfill on both sides of the arch. There is a large crack through the entire perimeter of the culvert barrel near the upstream end and various areas of spalled and hollow sounding concrete are present at both the upstream and downstream headwalls and wingwalls.

The invert at the downstream end of the culvert is at Elevation 608.70. Based on field investigations and review of surrounding vegetation and discoloration of the culvert barrel, the Ordinary High Water Mark (OHWM) is estimated to be at Elevation 610.00.

Proposed Conditions:

The proposed repairs include Class D concrete repairs in areas of spalled and hollow sounding concrete and in the location of the large culvert through the culvert barrel. The crack through the barrel of the culvert is considered a critical crack and measures up to 4" wide in some locations. Loose and deteriorated concrete surrounding this crack will be removed until solid concrete is encountered. The crack will then be repaired using Class D concrete. Areas of spalled and hollow sounding concrete on the headwalls will be removed until solid concrete is encountered. The areas will then be formed and Class D concrete will be poured to replace the removed areas.

In total, the proposed repairs at Culvert #3 include 50 square feet of Class D concrete repairs. Representative pictures of the existing conditions are shown below.

Temporary/Permanent Impacts:

The total linear feet of temporary impacts below OHWM is estimated to be 60 linear feet (10 foot length at each end plus 10 feet into culvert for crack repair, 2 total placements) for the cofferdams/water diversion. There will be no permanent impacts above or below OHWM at this culvert.

Upstream Culvert Elevation: Culvert #3

General View of Existing Deterioration: Culvert #3

B&L Stream #2, Culvert #4 (Drawing PL-71)

Existing Conditions:

Culvert #4 is a concrete arch culvert that measures 3 feet wide, 4 feet tall, and is 43 feet in length. The culvert appears to be founded on soil and has a concrete bottom slab. Headwalls and wingwalls have been integrally cast and are located at the upstream and downstream end of the culvert and serve to retain trail fill from atop the arch and backfill on both sides of the arch. The downstream headwall is heavily cracked with portions that are becoming separated from the top of the arch and the adjacent wingwalls. There is evidence of scour and erosion at the upstream and downstream ends of the culvert. A moderate drop off of approximately 1 foot exists at the downstream end while portions of the bottom slab are eroded at the upstream end.

The invert at the downstream end of the culvert is at Elevation 618.20. Based on field investigations and review of surrounding vegetation and discoloration of the culvert barrel, the OHWM is estimated to be at Elevation 619.50.

Proposed Conditions:

The proposed repairs include removal and replacement of the entire downstream headwall. New reinforcing bars will be drilled and grouted into the top of the culvert barrel and will be placed in the new headwall. The new reinforcing bars will provide continuity and structural support between the new headwall and existing culvert. Medium stone fill will be placed at the upstream and downstream end, 3 feet wide, 1.5 feet deep, and 10 feet in length to address current scour conditions.

In total, the proposed repairs at Culvert #4 include placement of approximately 20 drilled and grouted reinforcing bars into existing concrete, 4 cubic yards of new concrete located at the downstream headwall, and 3 cubic yards of stone fill. Representative pictures of the existing conditions are shown below.

Temporary/Permanent Impacts:

The repair location is directly over the open area for flows so depending on stream flows during the time of work, multiple adjustments may be required to the temporary waterway diversion structure to ensure work is completed and dry ground and stream flows are diverted as best as possible, while still allowing for passage of flows and aquatic organisms. The length of the diversion structure is estimated to be 30 linear feet in total, 10 feet into the culvert and 20 feet extending from the fascia. Assuming two placements of the diversion structure results in 60 linear feet of temporary impacts. All stone fill will be placed below OHWM resulting in approximately 40 linear feet (10 linear feet, 2 banks, 2 ends) and a total of 4 cubic yards.

Upstream Culvert Elevation: Culvert #4

Downstream Culvert Elevation and Deterioration: Culvert #4

View of Upstream Scour at Concrete Bottom Slab: Culvert #4

View of Scour at Downstream Culvert Fascia: Culvert #4

B&L Stream #3, Culvert #5 (Drawing PL-70)

Existing Conditions:

Culvert #5 is a concrete arch culvert that measures 8 feet wide, 7.5 feet tall, and 130 feet in length. The culvert appears to be founded on soil and has a concrete bottom slab. Headwalls and wingwalls have been integrally cast and are located at the upstream and downstream end of the culvert and serve to retain trail fill from atop the arch and backfill on both sides of the arch. There is a large crack through the entire perimeter of the culvert barrel near the upstream end. Minor cracking is located in the wingwalls at both the upstream and downstream end. A drop off exists immediately at the downstream end of the culvert where flows are carried from the concrete bottom slab to an unprotected bottom stream immediately adjacent to the culvert. The drop off is approximately 1 foot in height and scour and erosion are becoming evident at this location.

The invert at the downstream end of the culvert is at Elevation 591.60. Based on field investigations and review of surrounding vegetation and discoloration of the culvert barrel, OHWM is estimated to be at Elevation 593.50.

Proposed Conditions:

The proposed repairs include Class D concrete repairs in the location of the large culvert through the culvert barrel, silicone crack sealant in locations of non-critical cracks in wingwalls, and placement of medium stone fill at the downstream outlet to limit further erosion and scour concerns. The crack through the barrel of the upstream culvert end is considered a critical crack and measures up to 6" wide in some locations. Loose and deteriorated concrete surrounding this crack will be removed until solid concrete is encountered. The crack will then be repaired using Class D concrete. Non-critical cracks at the wingwalls will be repaired using a silicone crack sealant that is injected into the crack to fill existing voids. Medium stone fill will be placed from the elevation of the downstream culvert bottom slab, will extend for a constant slope to the base of the stream channel for an approximate length of 12 feet, and will be located from wingwall to wingwall. The stone fill will serve to slow stream flows as they exit the culvert and will reduce future scour and erosion effects.

In total, the proposed repairs at Culvert #5 include 65 square feet of Class D concrete repairs, 30 linear feet of silicone crack repairs, and 10 cubic yards of medium stone fill. Representative pictures of the existing conditions are shown below.

Temporary/Permanent Impacts:

It is anticipated that repairs will be completed on one half of the culvert at a time, then the waterway diversion will be adjusted to allow for work at the other side. As such, the total linear feet of temporary impacts below OHWM is estimated to be 100 linear feet (20 foot length at

each end, plus 10 feet into culvert for structural crack repair, 2 total placements). All stone fill to be placed at the culvert will be below OHWM resulting in approximately 24 linear feet (12 linear feet, 2 banks) and a total of 10 cubic yards.

Downstream Culvert Elevation: Culvert #5

Upstream Culvert Elevation: Culvert #5

Crack in Culvert Barrel: Culvert #5

Crack in Culvert Barrel: Culvert #5

B&L Stream #4, Culvert #7 (Drawing PL-65)

Existing Conditions:

Culvert #7 is a concrete arch culvert that measures 8 feet wide, 8 feet tall, and 100 feet in length. The culvert appears to be founded on soil and has a concrete bottom slab. Headwalls and wingwalls have been integrally cast and are located at the upstream and downstream end of the culvert and serve to retain trail fill from atop the arch and backfill on both sides of the arch. There is a large crack through the entire perimeter of the culvert barrel near the downstream end. Large cracks exist for the full length of the downstream headwall and a portion of a downstream wingwall and have caused the headwall and wingwall portion to separate from the adjacent culvert. Minor cracking is located in the wingwalls at the upstream end. A drop off exists at the end of the downstream wingwalls. Stream flows are carried over the bottom culvert slab to a concrete apron that extends between the downstream wingwalls. However, at the end of the apron, there is a drop of about 2 feet where the flows spill from the apron to an unprotected stream bottom. If existing conditions worsen, scour and erosion will continue at the wingwall apron and could cause undermining of the apron.

The invert at the downstream end of the culvert is at Elevation 611.50. Based on field investigations and review of surrounding vegetation and discoloration of the culvert barrel, the

OHWM is estimated to be at Elevation 614.00.

Proposed Conditions:

The proposed repairs include Class D concrete repairs in the location of the large culvert through the culvert barrel, removal of the deteriorated headwall and wingwall portion and replacement with new concrete, silicone crack sealant in locations of non-critical cracks in wingwalls, and placement of medium stone fill at the end of the downstream wingwall apron to limit further erosion and scour concerns. The crack through the barrel of the downstream end of the culvert is considered a critical crack and measures up to 6" wide in some locations. Loose and deteriorated concrete surrounding this crack will be removed until solid concrete is encountered. The crack will then be repaired using Class D concrete. The portions of the downstream headwall and wingwall that are heavily cracked and separated from the adjacent structure will be removed. New reinforcing bars will be drilled and grouted into adjacent sound concrete and will serve to bond the newly placed concrete with the existing structure. Non-critical cracks at the wingwalls will be repaired using a silicone crack sealant that is injected into the crack to fill existing voids. Medium stone fill will be placed at the elevation of the downstream wingwall apron and will extend to the base of stream. The stone will be placed from wingwall to wingwall. The approximate dimensions of the stone fill placement are 20 feet wide by 10 feet in length.

In total, the proposed repairs at Culvert #7 include 48 square feet of Class D concrete repairs, 10 linear feet of silicone crack repairs, 5 cubic yards of new concrete, 40 drilled and grouted reinforcing bars, and 20 cubic yards of medium stone fill. Representative pictures of the existing conditions are shown below.

Temporary/Permanent Impacts:

The total linear feet of temporary impacts due to diversion below OHWM is estimated to be 100 linear feet (20 foot length at each end, plus 10 feet into culvert for structural crack repair, 2 total placements). All stone fill to be placed at the culvert will be below OHWM resulting in approximately 20 linear feet (10 linear feet, 2 banks) and a total of 20 cubic yards.

Upstream Culvert Elevation: Culvert #7

Downstream Culvert Elevation: Culvert #7

Scour/Erosion at Downstream Wingwall Apron: Culvert #7

Silicone Crack Sealing Location at Upstream Wingwalls: Culvert #7

B&L Stream #5, Culvert #9 (Drawing PL-61)

Existing Conditions:

Culvert #9 is a Smooth Steel Culvert Pipe measuring 2 ft. in diameter and 52 ft. in length. Headwalls are present and in good condition at the upstream and downstream ends of the culvert. The upstream opening of the culvert is partially blocked by an existing tree and the downstream end of the culvert exhibits signs of minor scour. The steel is in very good condition. B&L delineated Wetland E is located approximately 20 ft. down gradient from the outlet of this culvert.

The invert at the upstream end of the culvert is at Elevation 647.1 and the downstream end of the culvert is at Elevation 640.1, resulting in a pipe slope of 13.5% which is considered very steep and is likely contributing to the noted erosion at the outlet of the culvert. Based on field investigations and review of surrounding vegetation and discoloration of the culvert barrel, the OHWM is estimated to be approximately 2-3 in. above the invert elevation.

Proposed Conditions:

The proposed repairs include installing a flared stone apron at both the inlet and outlet of the culvert to help dissipate flow velocity and reduce the potential for further erosion at the outlet of the pipe. The stone apron will consist of fractured stone native to the area and meet the gradation of NYSDOT light stone fill (Item 620.03). The size of the apron is dependent on the diameter of the steel culvert, which for a 2 ft. diameter culvert will measure 6 ft. in length (measured parallel with the culvert pipe) and will flare from 4 ft. in width to 6 ft.

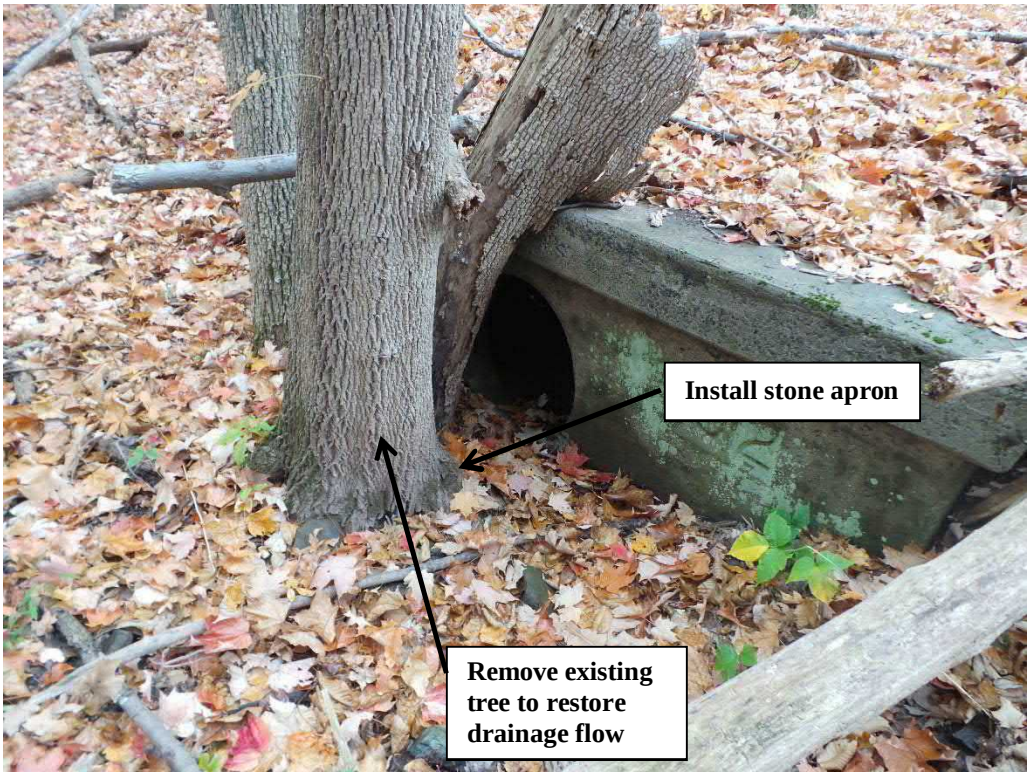
B&L mapped stream #5 is an unmapped stream which feeds Wetland E and based on field observations typically exhibits low flows. To accomplish the proposed work, a temporary waterway diversion structure (also known as a cofferdam) may be utilized during repairs so that all work is completed in the dry. If dry conditions exist (no stream flow) on the day the work is to be performed, a cofferdam will not be utilized.

In total, the proposed repairs at Culvert #5 include 3.3 cubic yards of light stone fill for stone aprons. Photos of the existing conditions are shown below.

Temporary/Permanent Impacts:

It is anticipated that repairs will be completed in less than one day of work which will result in minimal impacts to the stream. As such, the total linear feet of temporary impacts below OHWM is estimated to be 30 linear feet (15 foot length at each end for temporary waterway diversion, 2 total placements). The total linear feet of permanent impacts to the stream below OHWM is 24 ft. (6 feet at both the inlet and outlet of the culvert, on both stream banks) and 3.7 cubic yards of permanent fill is proposed to be placed.

Downstream Culvert Elevation: Culvert #9



Upstream Culvert Invert conditions: Culvert #9

B&L Stream #6, Culvert #12 (Drawing PL-58)

Existing Conditions:

Culvert #12 is a concrete arch culvert that measures 10 feet wide, 10 feet tall, and 64 feet in length. The culvert appears to be founded on soil and has a concrete bottom slab. Headwalls and wingwalls have been integrally cast and are located at the upstream and downstream end of the culvert and serve to retain trail fill from atop the arch and backfill on both sides of the arch. There are areas of minor cracking on the wingwalls and areas of spalled concrete inside the culvert barrel.

The invert at the downstream end of the culvert is at Elevation 629.80. Based on field investigations and review of surrounding vegetation and discoloration of the culvert barrel, the OHWM is estimated to be at Elevation 632.00.

Proposed Conditions:

The proposed repairs include Class D concrete repairs at locations of spalled concrete within the culvert barrel and silicone crack sealant in locations of cracks at the wingwalls. The spalled concrete and any surrounding hollow concrete will be removed until sound concrete is encountered. The area will then be patched with Class D concrete. Non-critical cracks at the wingwalls will be repaired using a silicone crack sealant that is injected into the crack to fill existing voids.

In total, the proposed repairs at Culvert #12 include 10 square feet of Class D concrete repairs and 30 linear feet of silicone crack repairs. Representative pictures of the existing conditions are shown below.

Temporary/Permanent Impacts:

The total linear feet of temporary impacts below OHWM is estimated to be 120 linear feet (20 foot length at each end, plus 20 feet into culvert for Class D concrete repairs, 2 total placements) for the cofferdams. There are no proposed placements of fill below OHWM.

Downstream Culvert Elevation: Culvert #12

Upstream Culvert Elevation: Culvert #12

Spalled Concrete Inside Culvert Barrel: Culvert #12

Cracked Concrete at Wingwalls: Culvert #12

B&L Stream #7, Culvert #19 (Drawing PL-48)

Existing Conditions:

Culvert #19 is a concrete arch culvert that measures 3 feet wide, 4 feet tall, and 80 feet in length. The culvert appears to be founded on soil and has a concrete bottom slab. Headwalls and wingwalls have been integrally cast and are located at the upstream and downstream end of the culvert and serve to retain trail fill from atop the arch and backfill on both sides of the arch. There is a crack in the headwall at the upstream fascia and scour and erosion at the downstream end immediately adjacent to the downstream fascia. The drop off from bottom culvert slab at the downstream end to the stream bank is approximately 1 foot.

The invert at the downstream end of the culvert is at Elevation 639.60. Based on field investigations and review of surrounding vegetation and discoloration of the culvert barrel, the OHWM is estimated to be at Elevation 641.50.

Proposed Conditions:

The crack in the upstream headwall will be repaired using a silicone crack sealant that will be injected into the crack to fill existing voids. Medium stone fill will be placed at the end of the bottom culvert slab at the downstream end. The stone fill will be placed from wingwall to wingwall and will extend for a distance of approximately 10 feet from the end of the culvert.

In total, the proposed repairs at Culvert #19 include 4 linear feet of silicone crack repairs, and 5 cubic yards of medium stone fill. Representative pictures of the existing conditions are shown below.

Temporary/Permanent Impacts:

It is anticipated that the crack repairs can be completed using one waterway diversion while the stone fill installation will require two waterway diversion placements. As such, the total linear feet of temporary impacts below OHWM is estimated to be 50 linear feet (10 feet for crack repair, 20 feet for stone fill with 2 placements). All stone fill to be placed at the culvert will be below OHWM resulting in permanent stream disturbance of approximately 20 linear feet (10 linear feet, 2 banks) and a total of 5 cubic yards.

Upstream Culvert Elevation, Showing Existing Cracks: Culvert #19

Downstream Culvert Elevation, Showing Scour and Erosion: Culvert #19

B&L Stream #9, Culvert #21 (Drawing PL-44)

Existing Conditions:

Culvert #9 is a Smooth Steel Culvert Pipe measuring 2 ft. in diameter and 63 ft. in length. Headwalls are not present at either the upstream and downstream ends of the culvert. The upstream opening of the culvert is partially blocked by sediment and debris and the downstream end of the culvert exhibits signs of minor scour. The steel is in very good condition.

The invert at the upstream end of the culvert is at Elevation 656.6 and the downstream end of the culvert is at Elevation 649.9, resulting in a pipe slope of 10.6% which is considered very steep and is likely contributing to the noted erosion at the outlet of the culvert. Based on field investigations and review of surrounding vegetation and discoloration of the culvert barrel, the OHWM is estimated to be approximately 2-3 in. above the invert Elevation.

Proposed Conditions:

The proposed repairs include installing a flared stone apron at both the inlet and outlet of the culvert to dissipate flow velocity and reduce the potential for further erosion at the outlet of the pipe. The stone apron will consist of fractured stone native to the area and will meet the gradation of NYSDOT light stone fill (Item 620.03). The size of the apron is dependent on the diameter of the steel culvert, which for a 2 ft. diameter culvert will measure 6 ft. in length (measured parallel with the culvert pipe) and will flare from 4 ft. in width to 6 ft.

B&L mapped stream #9 is an unmapped stream which is fed by Wetland I and based on field observations typically exhibits low flows. To accomplish the proposed work, a temporary waterway diversion structure (also known as a cofferdam) may be utilized during repairs so that all work is completed in the dry. If dry conditions exist (no stream flow) on the day the work is to be performed, a cofferdam will not be used.

In total, the proposed repairs at Culvert #5 include 3.3 cubic yards of light stone fill for stone aprons. Photos of the existing conditions are shown below.

Temporary/Permanent Impacts:

It is anticipated that repairs will be completed in less than one day of work which will result in minimal impacts to the stream. As such, the total linear feet of temporary impacts below OHWM is estimated to be 30 linear feet (15 foot length at each end for temporary waterway diversion, 2 total placements). The total linear feet of permanent impacts to the stream below OHWM is 24 ft. (6 feet at both the inlet and outlet of the culvert, on both stream banks) and 3.7 cubic yards of permanent fill is proposed to be placed.

Downstream Culvert Elevation: Culvert #21

Upstream Culvert Invert conditions: Culvert #21

B&L Stream #10, Culvert #22 (Drawing PL – 41)

Existing Conditions:

Culvert #22 is a concrete box shaped culvert that measures 9.5 feet wide, 7 feet tall, and 30 feet in length. The culvert appears to be founded on soil and does not appear to have a concrete bottom slab. The wingwalls and headwalls are composed of concrete and serve to retain trail fill from atop the culvert and fill along the side slopes of the trail. There are multiple cracks through the vertical sides of the culvert, wingwalls, and headwalls. Despite the cracks, there does not appear to be any differential movement or settlement of the culvert and the cracks do not appear to create structural deficiencies.

The invert at the downstream end of the culvert is at Elevation 652.30. Based on field investigations and review of surrounding vegetation and discoloration of the culvert barrel, the OHWM is estimated to be at Elevation 656.00.

Proposed Conditions:

The existing crack locations will be repaired using a silicone crack sealant that will be injected into the crack to fill existing voids. While the existing cracks do not appear to present any structural deficiencies at the structure, they should be sealed to keep future water and debris from seeping into the cracks and causing freeze/thaw conditions that would cause the deterioration to worsen.

In total, the proposed repairs at Culvert #22 include 65 linear feet of silicone crack repairs. Representative pictures of the existing conditions are shown below.

Temporary/Permanent Impacts:

The total linear feet of temporary impacts below OHWM is estimated to be 100 linear feet (10 feet at each end, 30 foot total length of culvert, 2 placements) due to the diversion. There are no proposed placements of fill below OHWM.

Cracks in Vertical Wall of Culvert: Culvert #22

Cracks in Wingwall: Culvert #22

B&L Stream #11, Culvert #23 (Drawing PL – 40)

Existing Conditions:

Culvert #23 is a concrete arch culvert that measures 3 feet wide, 4 feet tall, and 60 feet in length. The culvert appears to be founded on soil and has a concrete bottom slab. Headwalls and wingwalls have been integrally cast and are located at the upstream and downstream end of the culvert and serve to retain trail fill from atop the arch and backfill on both sides of the arch. There are areas of minor cracking and a small area of spalled concrete at the downstream headwall.

The invert at the downstream end of the culvert is at Elevation 647.70. Based on field investigations and review of surrounding vegetation and discoloration of the culvert barrel, the OHWM is estimated to be at Elevation 650.00.

Proposed Conditions:

The proposed repairs include Class D concrete repairs and silicone crack sealing at the downstream headwall. The spalled concrete and any surrounding hollow concrete will be removed until sound concrete is encountered. The area will then be patched with Class D concrete. Non-critical cracks will be repaired using a silicone crack sealant that is injected into the crack to fill existing voids.

In total, the proposed repairs at Culvert #23 include 2 square feet of Class D concrete repairs and 15 linear feet of silicone crack repairs. Representative pictures of the existing conditions are shown below.

Temporary/Permanent Impacts:

The total linear feet of temporary impacts below OHWM is estimated to be 20 linear feet due to the diversion. There are no proposed placements of fill below OHWM.

Downstream Culvert Fascia: Culvert #23

Downstream Culvert Fascia, Showing Cracks in Headwall: Culvert #23

Culvert #24 over NYSDEC Wetland AS-20 (Drawing PL – 37)

Existing Conditions:

Culvert #24 is a concrete box shaped culvert that measures 10 feet wide, 3 feet tall, and 20 feet in length. The culvert appears to be founded on soil and does not appear to have a concrete bottom slab. Given the short rise of the culvert, there are no wingwalls. There are short concrete headwalls on both ends of the culvert that retain the small amount of fill that sits atop the top slab. There are many cracks located in the headwalls on both ends of the culvert.

The invert at the downstream end of the culvert is at Elevation 654.10. Based on field investigations and review of surrounding vegetation and discoloration of the culvert barrel, the OHWM is estimated to be at Elevation 655.50.

Proposed Conditions:

The existing crack locations will be repaired using a silicone crack sealant that will be injected into the crack to fill existing voids. While the existing cracks do not appear to present any structural deficiencies at the bridge, they should be sealed to keep future water and debris from seeping into the cracks and causing freeze/thaw conditions that would cause the deterioration to worsen.

In total, the proposed repairs at Culvert #24 include 20 linear feet of silicone crack repairs. Representative pictures of the existing conditions are shown below.

Temporary/Permanent Impacts:

The total linear feet of temporary impacts below OHWM is estimated to be 40 linear feet (10 feet at each end, 2 placements) due to the diversion. There are no proposed placements of fill below OHWM.

Cracks in Concrete Headwall: Culvert #24

Cracks in Concrete Headwall: Culvert #24

B&L Stream #15, Culvert #29 (Drawing PL – 20)

Existing Conditions:

Culvert #29 is a concrete arch culvert that measures 4 feet wide, 6 feet tall, and 86 feet in length. The culvert appears to be founded on soil and has a concrete bottom slab. Headwalls and wingwalls have been integrally cast and are located at the upstream and downstream end of the culvert and serve to retain trail fill from atop the arch and backfill on both sides of the arch. The culvert itself is in good condition, however, there is a large drop off at the end of the downstream culvert slab that has caused flows to scour the bottom of the stream. The drop off measures approximately 3 feet in height and extends from wingwall to wingwall.

The invert at the downstream end of the culvert is at Elevation 594.50. Based on field investigations and review of surrounding vegetation and discoloration of the culvert barrel, there were no discernable features to denote an OHWM. As such, the OHWM will be conservatively assumed to be 2 feet above the bottom of the culvert, at Elevation 596.50.

Proposed Conditions:

The proposed repairs include placement of medium stone fill at the downstream end of the culvert to provide scour protection for the existing structure and stream. The stone fill will be placed at the elevation of the bottom slab and will be continued at a constant slope until it reaches the bottom of the stream channel. The stone will stretch from wingwall to wingwall. The approximate plan dimensions for stone fill are 10 feet in length, by 33 feet in width.

In total, the proposed repairs at Culvert #29 include 40 cubic yards of medium stone fill. Representative pictures of the existing conditions are shown below.

Temporary/Permanent Impacts:

The total linear feet of temporary impacts below OHWM is estimated to be 40 linear feet (20 foot length at downstream end, 2 total placements) due to the diversion. All stone fill to be placed at the culvert will be below OHWM. Therefore, the permanent stream disturbance below OHWM is approximately 20 linear feet (10 linear feet, 2 banks) and a total of 40 cubic yards.

Downstream Culvert Fascia, Showing Drop Off to Stream Bed: Culvert #29

Downstream Culvert Fascia, Showing Drop Off to Stream Bed: Culvert #29

B&L Stream #16, Culverts #35&36 (Drawing PL-15)

Existing Conditions:

Culvert #35 consists of two (2) Smooth Steel Culvert Pipes measuring 4 ft. in diameter, each 50 ft. in length. The railroad tracks and proposed centerline of the trail are located above the steel culvert pipes. The steel culvert pipes are in very good condition and outlet onto the rocky shore of the Ashokan Reservoir. The inlet for the steel culvert pipes consists of a concrete headwall which connects the outlet of the concrete culvert (#36) to the steel culverts (#35). Culvert #36 consists of a Concrete Arch measuring approximately 6 ft. in height (measured from sediment to top of arch) and 10 ft. in width. The total height of the concrete culvert is assumed to be 10 ft. minus the built up sediment within the culvert. This Concrete Arch culvert is connected to culvert #35 by a concrete headwall connecting the steel culverts (#35). Significant sediment and debris has accumulated within the concrete arch resulting in a near full blockage of both the steel culvert pipes. The concrete culvert currently does not carry any feature above the culvert (such as a roadway, trail or railroad).

The invert at the upstream end of Culvert #35 is at Elevation 594.1 and the downstream end of the culvert is at Elevation 588.7, resulting in a steep pipe slope of 10.8%. The invert at the upstream end of Culvert #36 is at Elevation 596.4 and the downstream end of the culvert (transition between the concrete arch and the steel pipes) is at elevation 594.1, resulting in a pipe slope of 3.6%. Based on field investigations and review of surrounding vegetation and discoloration of the culvert barrel, the OHWM is estimated to be approximately 3-4 in. above the invert elevation.

Proposed Conditions:

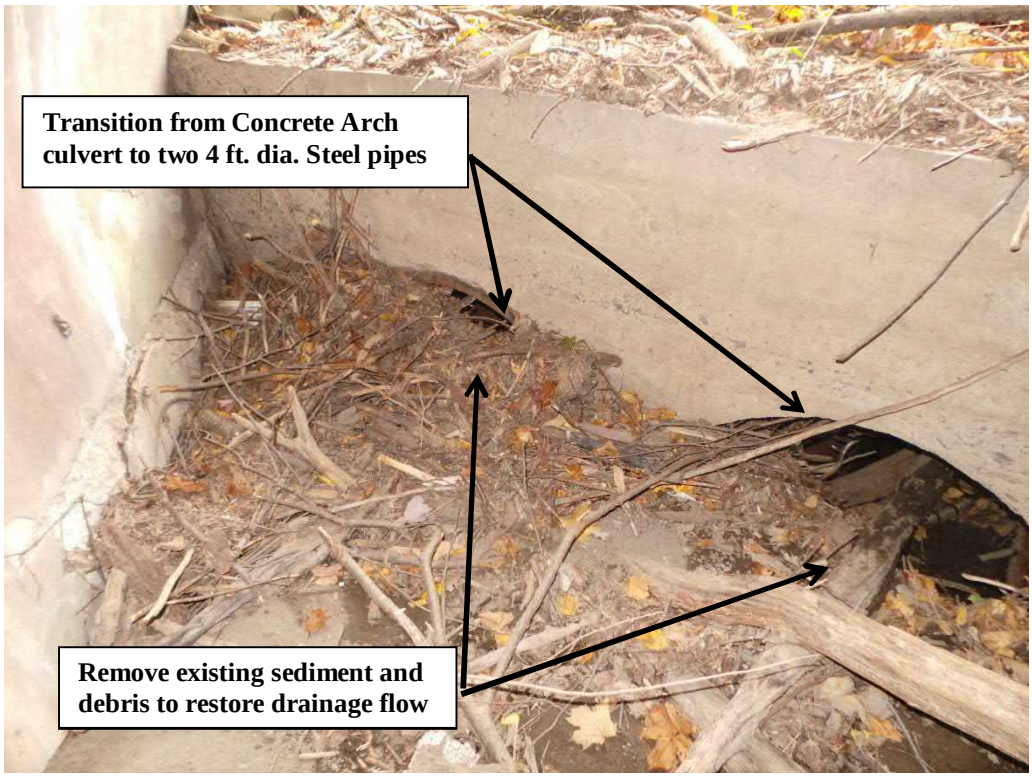
The work proposed to culvert #36 consists of performing general maintenance activities to remove the existing built up sediment and debris within the concrete arch culvert to restore full functional capacity to the two steel culverts. This will require the removal of an approximate 3 to 3.5 ft. depth of sediment and debris within the concrete culvert. The stream bed post sediment removal within the culvert will consist of the same material as is currently within the culvert. No materials will be deposited or installed within the culvert. No work is proposed on the twin steel culverts (culvert #35.)

B&L mapped stream #16 is an unmapped stream which collects water from the eastern side of the railroad corridor and flows beneath the tracks through the two (2) steel culverts and into the Ashokan Reservoir. In total, the proposed repairs at Culverts #35 & 36 include the removal of approximately 30 cubic yards of removal of sediment and debris (assumed 3 ft. depth of removal of sediment at the steel culverts sloped to existing stream elevation at the entrance of the culvert).

Temporary/Permanent Impacts:

In order to remove the accumulated sediment and debris within the culvert, a temporary waterway diversion structure (cofferdam) will be used to provide the contractor with dry ground on which to work and will protect debris and construction materials from washing into the stream. Once the opening to the steel culverts has been restored, the temporary diversion will be removed and the stream will resume its original course through the culvert. It is anticipated that repairs will be completed in 1-2 work days which will result in minimal impacts to the stream. As such, the total linear feet of temporary impacts below OHWM is estimated to be 240 linear feet (120 foot length from beginning of concrete arch to reservoir, 2 total stream banks) due to the diversion. The total linear feet of permanent impacts to the stream below OHWM is 120 ft. (60 feet within the culvert where sediment is to be removed, on both stream banks).

Downstream Elevation: Culvert #35



Upstream Invert conditions: Culvert #35

Downstream, looking upstream: Culvert #36

Upstream Invert conditions: Culvert #36

Bridge Specifics

Boiceville Trestle (Ashokan Rail Trail) over Esopus Creek

Existing Conditions:

The majority of the existing bridge that previously carried the Ashokan Rail Trail over the Esopus Creek has been washed away during the storms of Hurricane Irene and Tropical Storm Lee around the time period of August 26, 2011 to September 5, 2011. Prior to the storm, the bridge configuration consisted of four spans, each approximately 73.5 feet in length for a total bridge length of 294 feet. The superstructure consisted of a two girder system supporting ties and rails for a single rail track. The steel girders measured approximately 74 inches in depth.

The abutments and piers (3 in total) were composed of laid up stone with timber cribbing. The two southernmost piers (Pier 2 and Pier 3) were directly within the stream flows and had areas of scour and erosion at the base of the upstream side of the footing. As a result of the storm events and deterioration, Pier 2 and Pier 3 failed, causing the Span 3 and Span 4 girders to fall into the creek. As the bridge stands today, the Span 1 girders are still in place on the North Abutment and Pier 1. Span 2 girders sit atop Pier 1 but rest on the bottom of the stream where Pier 2 was. Remnants of Pier 2 and Pier 3 masonry stones can be seen at the crossing, but the majority of the stones have washed away. Span 3 and Span 4 girders are partially submerged

along the stream banks, with one span resting on the north bank and the other span resting along the south bank.

Based on field investigations and review of surrounding vegetation and discoloration of the remaining substructures, there were no discernable features to denote an Ordinary High Water Mark OHWM. As such, the 2-year storm water surface elevation at the structure of 605.73 will be used to define OHWM. The existing bridge was severely undersized and this likely resulted in the ultimate collapse of the bridge. An existing hydraulic study was completed and the results show the 50-year storm inundated the low chord of the existing bridge and overtopped the trail elevation by approximately 4 feet.

Proposed Conditions:

The proposed project consists of full removal of the existing substructures and superstructures and construction of a new bridge designed to carry pedestrians, bicyclists, and the occasional emergency service vehicle. The bridge will be a three span structure, each span measuring approximately 120 feet, for a total bridge length of 360 feet. The abutments and piers will be composed of cast-in-place concrete founded on piles driven to refusal. The proposed abutment on the south side will be constructed in the same approximate location as the existing abutment while the north abutment will be constructed approximately 60 feet north of its existing location. The top of trail elevation will be increased by approximately 6.5 feet from its elevation prior to bridge collapse. By increasing the trail elevation and total length of the bridge, the 50-year storm will be carried thru the structure without inundating the low chord. The proposed low chord of the new bridge is 621.80 and the proposed 50-year storm elevation just upstream of the structure is 619.80, which provides the NYSDOT recommended 2 feet of freeboard for the 50-year storm.

All work required to remove the existing abutments and piers and to construct the new abutments and piers will be completed in the dry by use of cofferdams. The cofferdams needed to construct the piers, which are within current stream flows, are likely to consist of driving temporary steel sheeting into the base of the stream and then dewatering the area inside the sheeting to provide dry ground on which to build the new piers. It is anticipated that a temporary causeway will need to be constructed so that workers can access the pier locations and so that a crane can operate to set the new girders. The exact location and materials needed for the causeway will be determined by the contractor; however, the causeway can likely be constructed using temporary concrete barrier and temporary fill. The proposed location of the causeway will extend from the north stream banks to approximately the center of the stream. The proposed dimensions of the causeway that will be located below OHWM are 125 feet long, 15 feet wide, and an average of 4.5 foot deep, for a total approximate volume below OHWM of 313 cubic yards. The minimum elevation at the top of the causeway will be required to be 606.73, which coincides with 1 foot above OHWM. The contractor and engineering inspection staff will be instructed to monitor daily rain events and upcoming weather forecasts to determine if future rain events will require adjustments to the top elevation of the causeway.

The exact location, materials, and methods to construct the causeway will be determined by the contractor. If the permitting agencies would like to see copies of the contractor's proposed means and methods to construct the causeway, they can be forwarded to the respective agencies during construction. B&L will facilitate discussions between the contractor and permitting agencies so that all questions can be answered and all parties are in agreement on the means and methods that will be used.

As compared to the existing four span bridge with straight girders, the proposed bridge will be 3 spans with haunched girders. Haunched girders are deepest at the pier and most shallow at midspan. This type of design, coupled with fewer piers, allows the open area passing through the proposed bridge to be increased 20% - 25% compared to the open area for flows to pass through the existing bridge.

The existing girders that are resting along the north and south stream banks will be removed as part of the project. Cofferdams will be constructed around the girders to ensure that removal is completed in the dry. Temporary access roads will be constructed along the stream banks to allow the contractor to access the locations of the girder spans.

The south stream banks are very steep and it is not feasible to get a crane or small excavator to the elevation that the girders now sit, approximately Elevation 602.00. It is proposed that a crane be located atop the stream bank near Elevation 625.00 where the crane can reach out and pick the girders. All work proposed to construct the access way and set up a crane for removal will be done above OHWM. The only temporary impacts would be associated with the installation and removal of the cofferdam.

The north stream banks have gentler slopes so the contractor will be able to access the girder span near the elevation at which they sit, approximately Elevation 602.00. A temporary access road will be constructed from the existing trail and will run along the north stream bank. The approximate length of the access road that will be below OHWM is 90 feet. With a width of 15 feet and an average depth of fill below OHWM of 1.5 feet, the total amount of temporary fill placed below OHWM to construct the temporary access road along the north stream bank is approximately 75 cubic yards.

The total volume of stone fill to be placed along the stream banks and the piers for the proposed bridge is approximately 406 cubic yards, of which, 158 cubic yards will be placed below OHWM. The total linear feet of stream banks that will be disturbed as a result of this project is 120 linear feet.

View Looking at Existing Pier 1 (Span 1 on Pier, Span 2 Resting on Ground): Boiceville Trestle

View Looking at End of Span 2 Resting on Creek Bed: Boiceville Trestle

View Looking Upstream, Towards South Stream Bank: Boiceville Trestle

View Looking Downstream, Towards South Stream Bank: Boiceville Trestle

View Looking Towards Girders Resting Along South Stream Bank: Boiceville Trestle

View Looking Downstream, Towards Girders Resting on North Stream Bank: Boiceville Trestle

Butternut Cove Large Culvert over Butternut Creek

Existing Conditions:

The Butternut Cove Large Culvert is a single barrel, concrete arch culvert, measuring approximately 11.5 feet wide, 12.5 feet rise from invert to apex, and 60 to 65 feet in total length. From culvert invert elevation to top of rail is approximately 25 feet. The existing structure is in very poor condition with significant scour issues at both the stream bed and trail elevation. The downstream wingwalls have rotated so much as to completely separate from the culvert and are currently resting in the middle of the stream. The downstream most section of the culvert is cracked and starting to rotate away from the adjacent culvert sections. There is a large scour hole in the bed of the creek that results in a more than 4 foot drop from the base of the bottom culvert slab to the bottom of the creek. It is assumed that heavy stream flows exiting the structure have created the scour hole, and over the course of time, have resulted in undermining of the structure which has caused the wingwalls to completely fail and the downstream portion of the culvert to rotate. Additional scour along the trail bed is evidenced by stretches of unsupported rail ties where the existing ballast material has failed and likely washed into the stream.

Based on field investigations and review of surrounding vegetation and discoloration of the remaining substructures, there were no discernable features to denote an OHWM. Flows carried through the culvert barrel are generally very shallow because of the drop off at the end of the culvert. Based on survey information, the elevation upstream of the culvert is approximately 610.00, and as such, 610.00 will be assumed to be the OHWM at this structure.

Proposed Conditions:

The proposed project consists of full removal of the existing culvert and replacement with a 75 foot span truss designed to carry bicyclists, pedestrians, and the occasional emergency service vehicle. The truss would be founded on cast-in-place concrete abutments and piles driven to refusal. The proposed abutments would be located approximately 35 feet horizontally from the centerline of the stream and would be at an elevation approximately 20 feet above the OHWM. By constructing a bridge at this stream crossing, we are able to daylight the stream as it passes under the new structure and can significantly improve hydraulic characteristics at the site.

In order to complete the removal of the existing culvert in the dry, stream flows will be diverted around the work site using a series of cofferdams and temporary culvert pipes and/or pumping of stream flows. The exact number and type of cofferdams used will be determined by the contractor, however, our proposed plan shows the use of four cofferdams and a temporary pipe that will be used to ensure all work required to remove the existing structure is done in the dry, while still allowing for passing of running water and aquatic organisms around the site during construction.

Upon full removal of the existing culvert, medium stone fill will be placed along the stream banks for the full length of the existing culvert. The stone fill will be placed to provide scour and erosion protection to the stream banks. Adjacent grounds will be re-vegetated and restored to their preconstruction conditions. The total volume of stone fill to be placed along the stream banks is approximately 400 cubic yards of which 174 cubic yards will be placed below OHWM. The total linear feet of stream banks that will be disturbed as a result of this project is 150 linear feet.

View Looking at Downstream Culvert Elevation: Butternut Culvert

View Looking at Upstream Culvert Elevation: Butternut Culvert

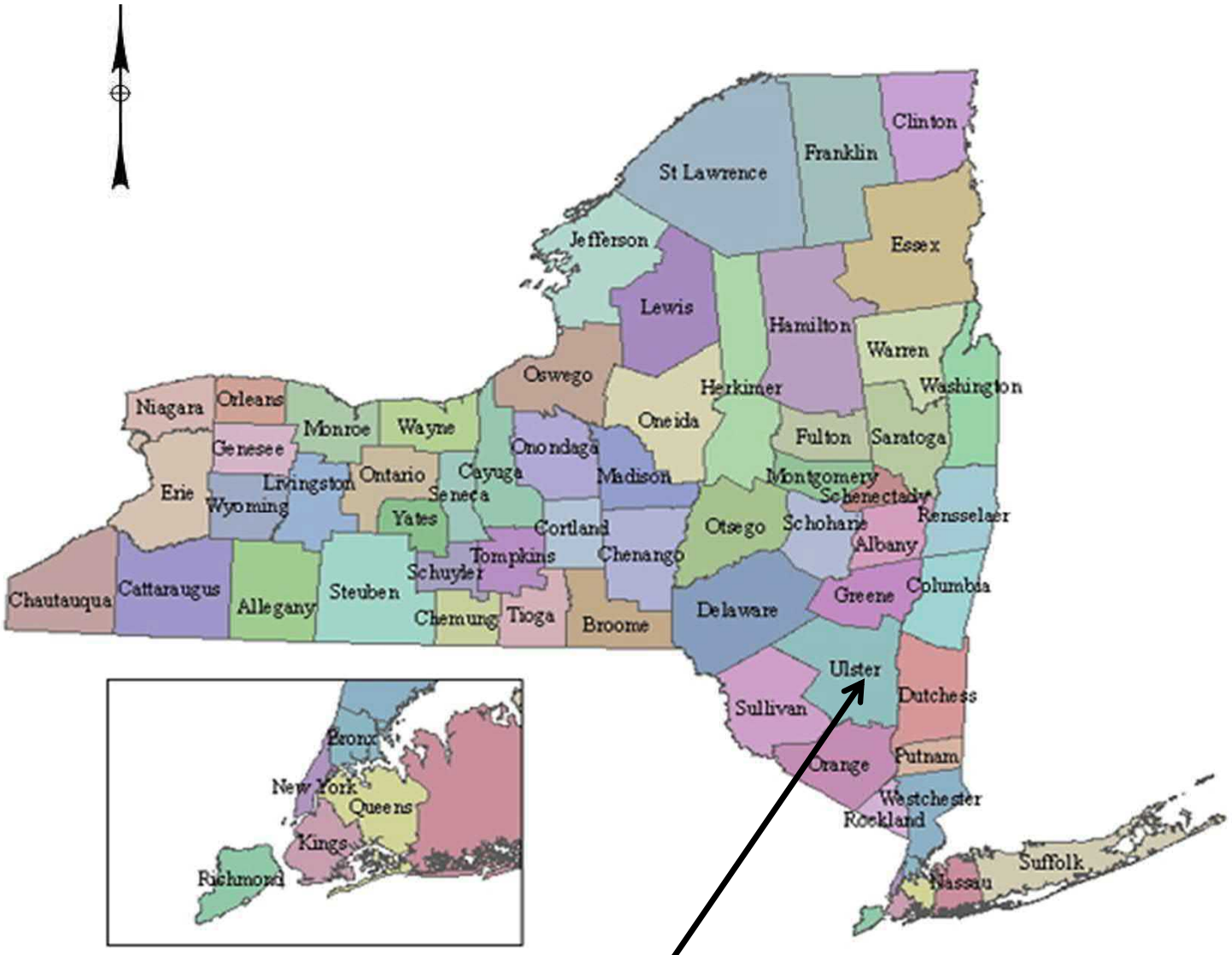
View Looking Downstream From Culvert: Butternut Culvert

View Looking Upstream From Culvert: Butternut Culvert

Existing Scour and Erosion at Downstream Fascia: Butternut Culvert

Existing Scour and Erosion Along Trail Above Culvert: Butternut Culvert

Exhibit 3: Site Location Maps



Ulster County

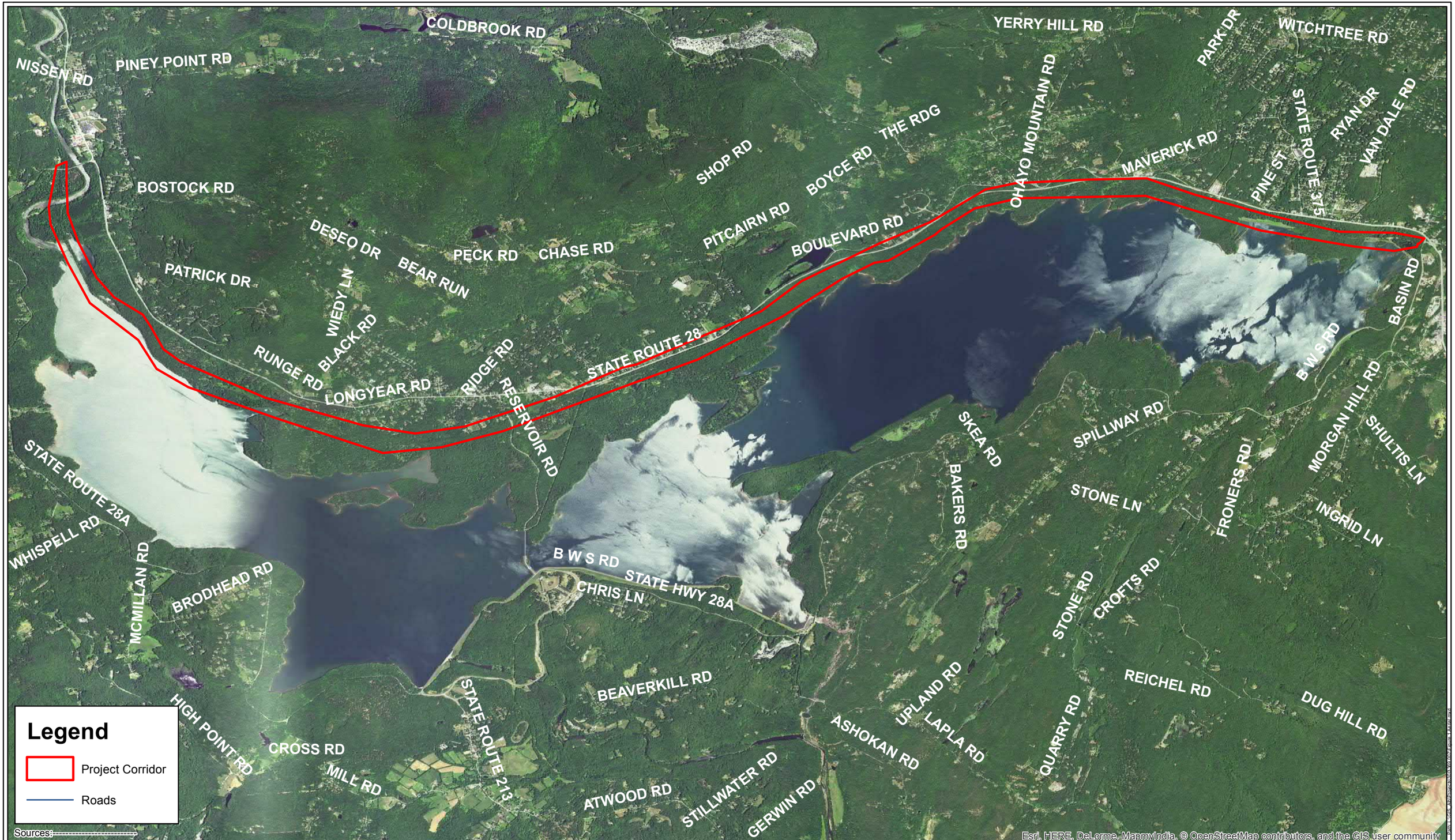
Ashokan Rail Trail

Source:

November 2016

Barton & Loguidice, D.P.C.

Engineers • Environmental Scientists • Planners • Landscape Architects



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

Exhibit 4: Wetland Delineation Report

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.

8.0 Bibliography

Cowardin, et. al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service Report No. FWS/OBS/-79/31.Washington, D.C.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual.* Technical Report Y-87. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.

Lichvar, R.W., Butterwick M., Norman M.C., Kirchner W.N. 2014. *The National Wetland Plant List: 2016 wetland ratings. Phytoneuron* 2016-41: 1-42.

Munsell Color. 2009 revised edition. *Munsell Soil Color Charts.* Macbeth Division of Kollmorgen Instruments Corporation, Baltimore, Maryland.

Newcomb, L. 2011. *Newcomb's Wildflower Guide*. Little, Brown and Company. United States of America. Boston.

New York State Codes, Rules, and Regulations (NYCRR). Title 6 Department of Environmental Conservation. Chapter X Division of Water Resources. Subchapter A, Article 10, Lower Hudson River Drainage Basin Series, Part 862. Accessed June 2016. https://govt.westlaw.com/nycrr/Browse/Home/NewYork/NewYorkCodesRulesandRegulations?guid=I26731020b5a111dda0a4e17826ebc834&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default)

New York State Department of Environmental Conservation (NYSDEC). 2008. Ecological Zones – New York State – KML/KMZ File Format. NYSDEC, Albany, N.Y., Published July 3, 2008.

New York State Department of Environmental Conservation (NYSDEC). 2016. Environmental Resource Mapper. NYSDEC, Albany, N.Y., Published July 3, 2008. http://www.dec.ny.gov/imsmaps/ERM/viewer.htm.

U.S. Army Corps of Engineers. 2011. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0),* ed. J.S. Wakeley, R. W. Lichvar, and C.V. Noble, and J.F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

United States Department of Agriculture (USDA). 2016. Natural Resource Conservation Service. Web Soil Survey Geographic Database. Accessed: June 2016. http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

U.S. Fish and Wildlife Service (USFWS). 2016. National Wetlands Inventory (NWI) Mapping. http://www.fws.gov/wetlands/Wetlands-Mapper.html.

Figure 1

Site Location Map – Aerial Imagery

Legend

Project Corridor

Barton & Loguidice, D.P.C.

Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 3,000 feet

Ulster County

Ashokan Rail Trail - Aerial Imagery

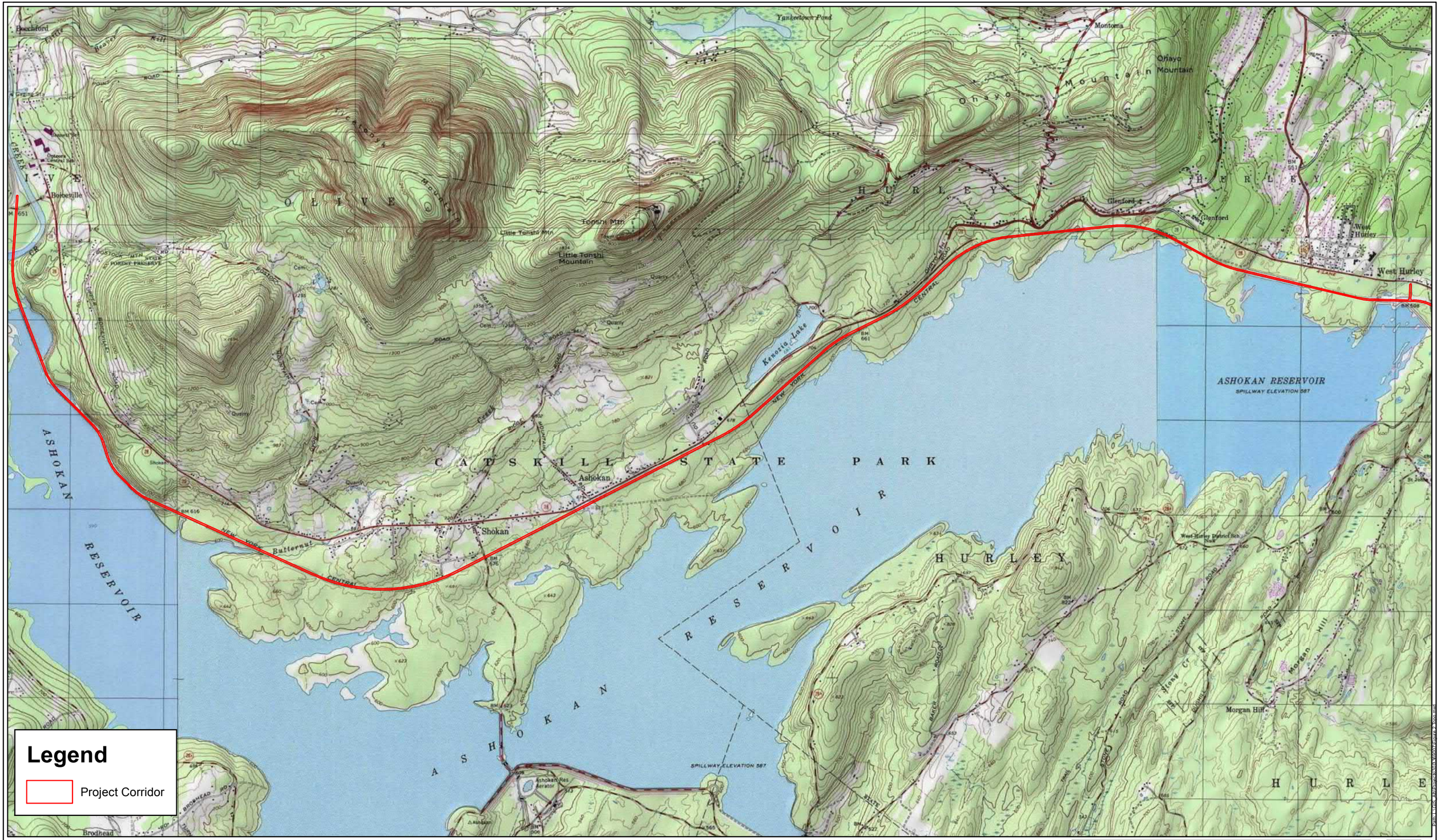
Ulster County March 2017 New York

Figure 1

Project No. 369.007

Figure 2

Site Location Map – Topographic Imagery



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1 inch = 3,000 feet

Ulster County
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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N W E S

1 inch = 1,500 feet

Ulster County
Ashokan Rail Trail - NRCS Soils
Ulster County March 2017 New York

Figure 3

Project No. 369.007

Western Terminus

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

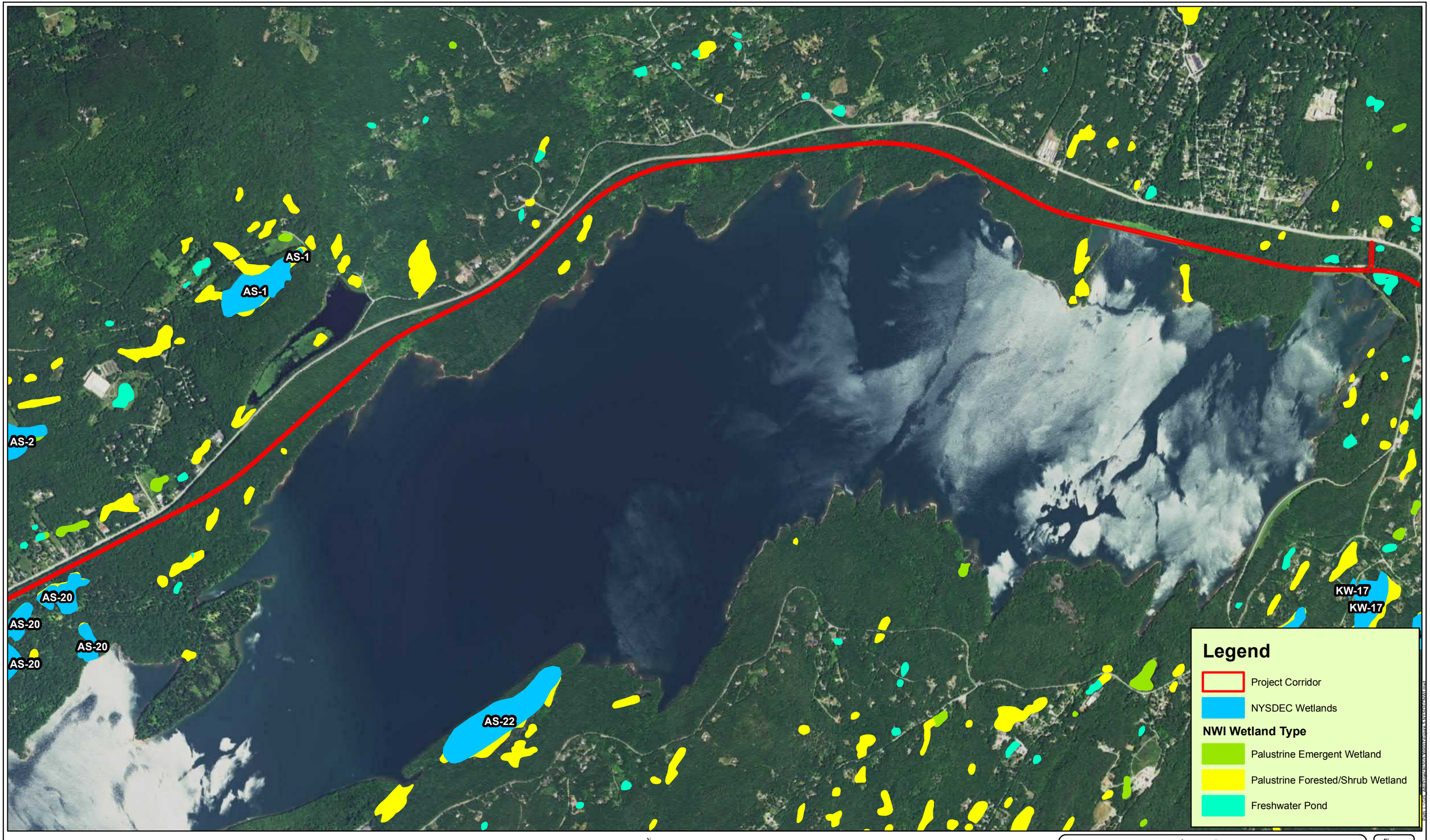
Ulster County
Ashokan Rail Trail - NRCS Soils
Ulster County March 2017 New York

Figure 3A

Project No. 369.007

Figures 4 and 4A

NYSDEC/NWI Wetlands



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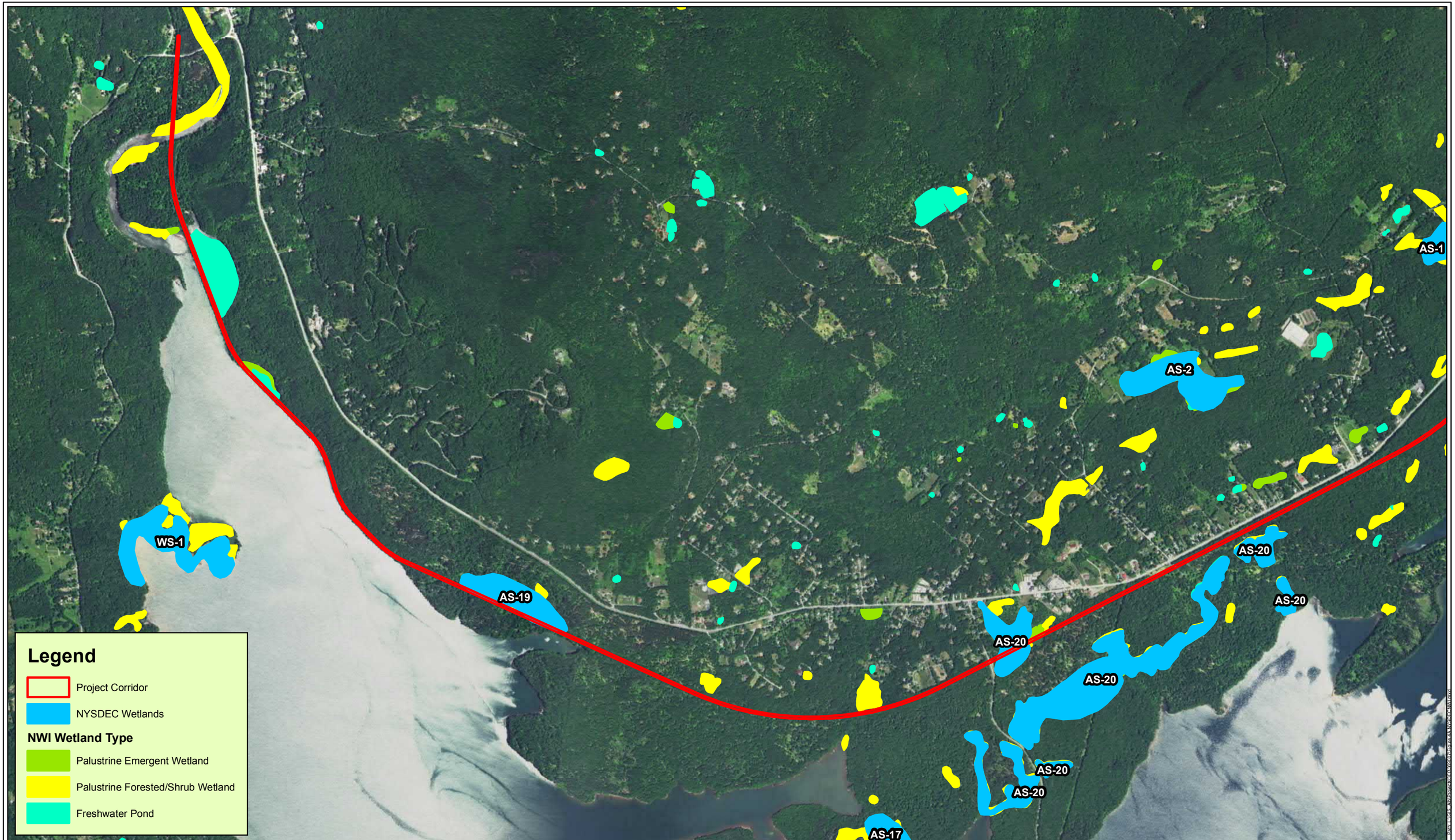
N
W E
S

1 inch = 1,750 feet

Ulster County
Ashokan Rail Trail -
NYSDEC/NWI Wetlands
Ulster County March 2017 New York

Figure 4

Project No. 369.007



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N W E S

1 inch = 1,750 feet

Ulster County
Ashokan Rail Trail -
NYSDEC/NWI Wetlands
Ulster County March 2017 New York

Figure 4A

Project No. 369.007

Figure 5

NYSDEC Mapped Streams

Esopus Creek
H-171
Class A, A(TS) Standards

Tributary 8 of the Ashokan Reservoir
H-171-P 848-8
Class A, A(T) Standards

Tributary 1 of Butternut Creek
H-171-P 848-9-1
Class A, A(T) Standards

Butternut Creek (Trib. 9 of Ashokan Reservoir)
H-171-P 848-9
Class A, A(T) Standards

Tributary 9a of the Ashokan Reservoir
H-171-P 848-9a
Class A, A(T) Standards

Tributary 10 of the Ashokan Reservoir
H-171-P 848-10
Class A, A(T) Standards

Tributary 11 of the Ashokan Reservoir
H-171-P 848-11
Class A, A(T) Standards

Tributary 12 of the Ashokan Reservoir
H-171-P 848-12
Class B, B Standards

Legend

Project Corridor

NYSDEC Streams

Barton & Loguidice, D.P.C.
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N
W E
S

1 inch = 3,000 feet

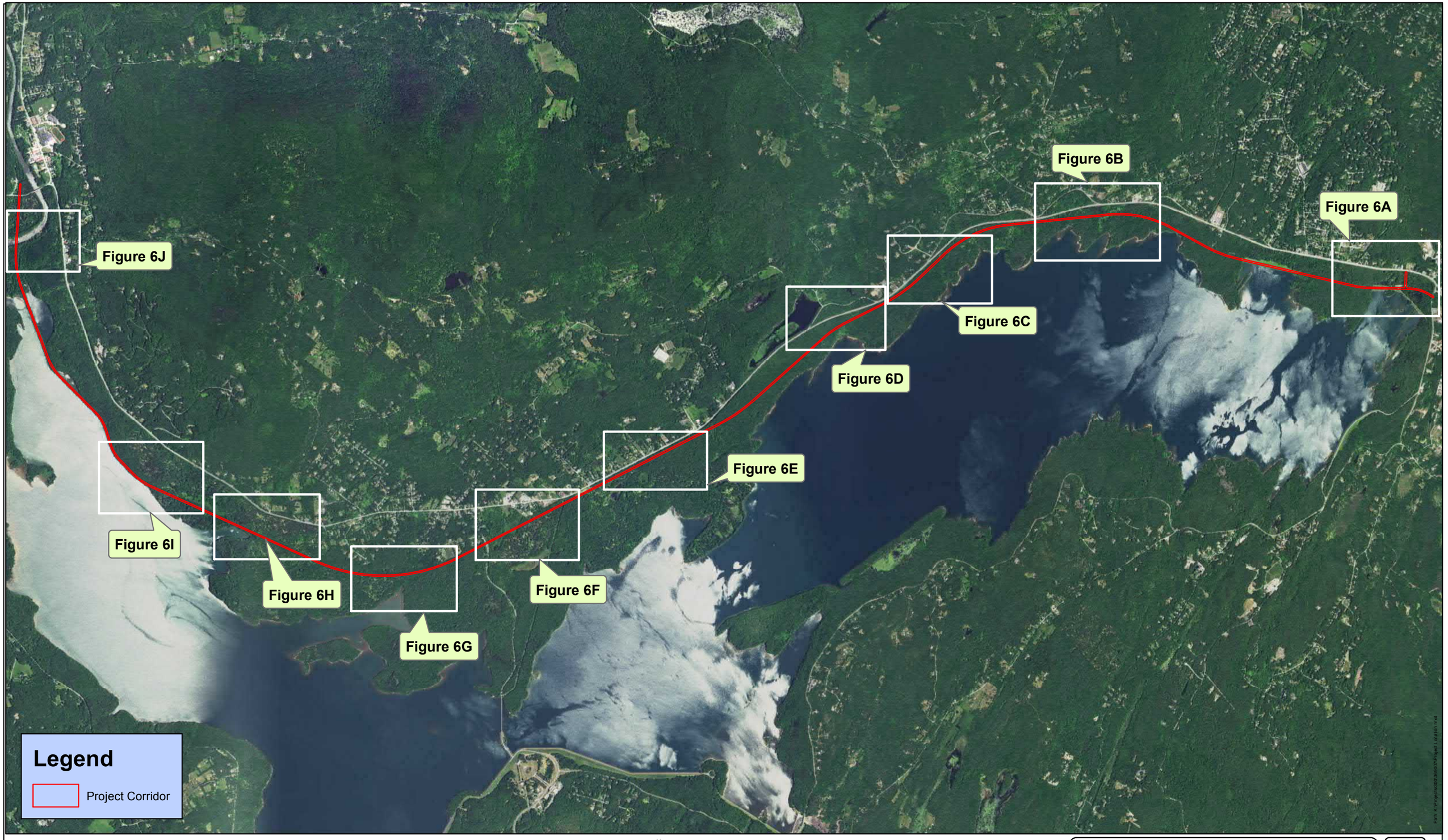
Ulster County
Ashokan Rail Trail -
NYSDEC Mapped Streams
Ulster County March 2017 New York

Figure 5

Project No. 369.007

Figures 6A-6J

Delineated Resources



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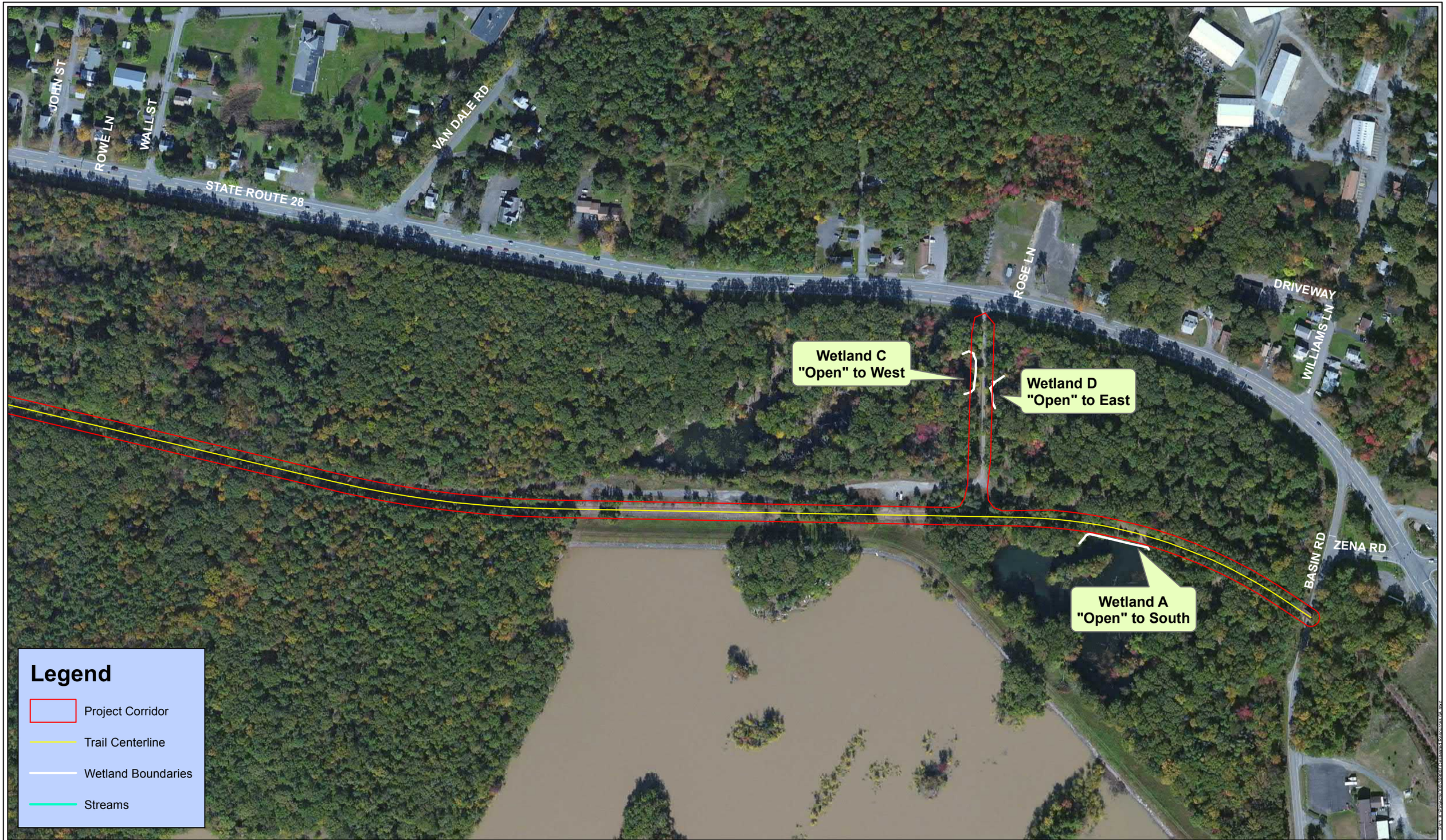
1 inch = 3,000 feet

Ulster County Planning Department
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

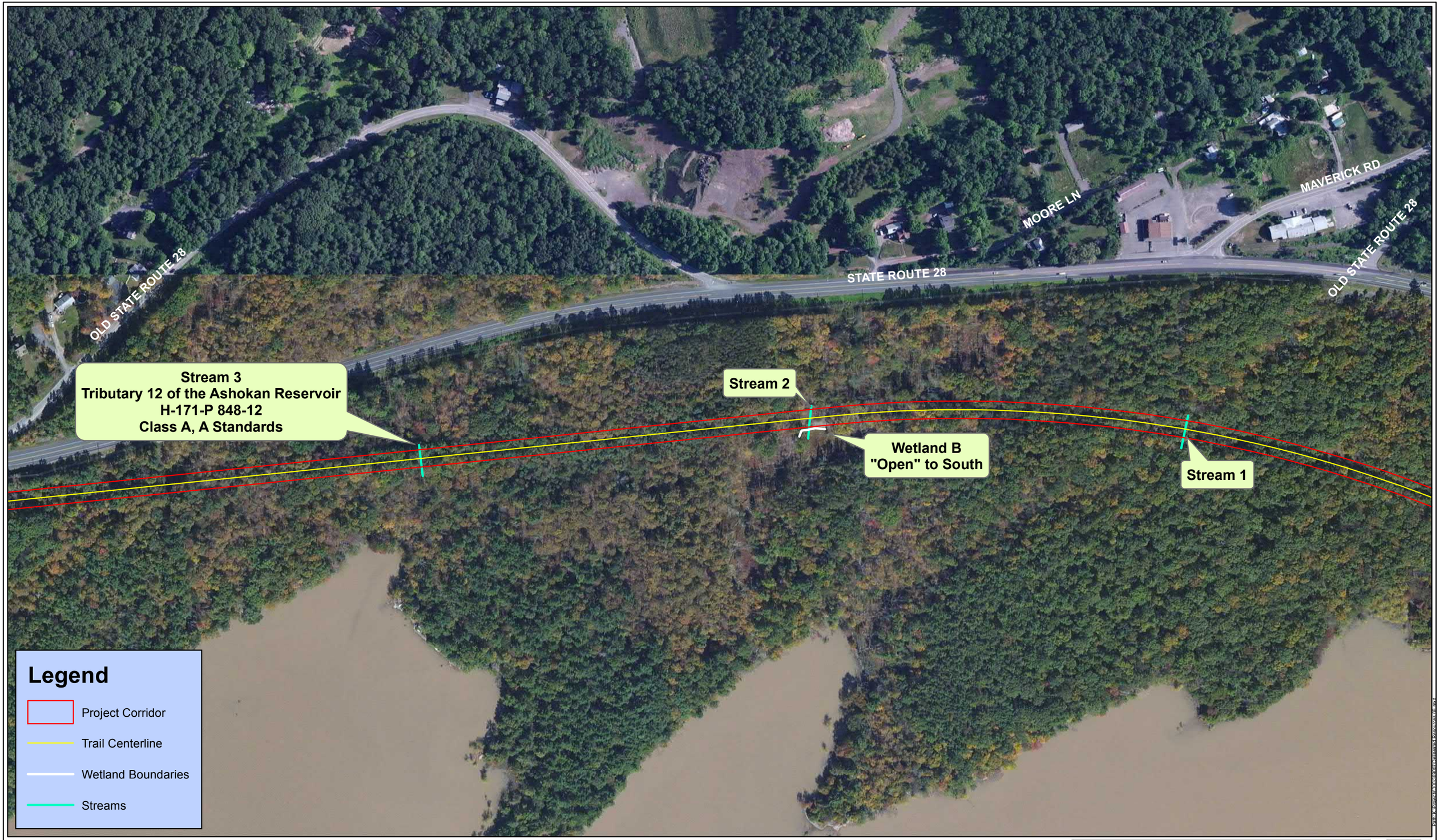
Ulster County Planning Department

Ashokan Rail Trail - Delineated Resources

Ulster County May 2017 New York

Figure 6A

Project No. 369.007



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N W E S

1 inch = 250 feet

Ulster County Planning Department
Ashokan Rail Trail -
Delineated Resources
Ulster County May 2017 New York

Figure 6B

Project No. 369.007

Barton & Loguidice, D.P.C.
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N
W E
S

1 inch = 250 feet

Ulster County Planning Department

Ashokan Rail Trail - Delineated Resources

Ulster County May 2017 New York

Figure 6C

Project No. 369.007

PITCAIRN RD

BOYCE RD

STATE ROUTE 28

BOULEVARD RD

Stream 6
Tributary 11 of the Ashokan Reservoir
H-171-P 848-11
Class A, A(T) Standards

Legend

- Project Corridor
- Trail Centerline
- Wetland Boundaries
- Streams

Barton & Loguidice, D.P.C.
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N W E S

1 inch = 250 feet

Ulster County Planning Department
Ashokan Rail Trail - Delineated Resources
Ulster County May 2017 New York

Figure 6D

Project No. 369.007

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N W E S

1 inch = 250 feet

Ulster County Planning Department

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

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

RESERVOIR RD

VAN STEENBERGH LN

Wetland M

Wetland N

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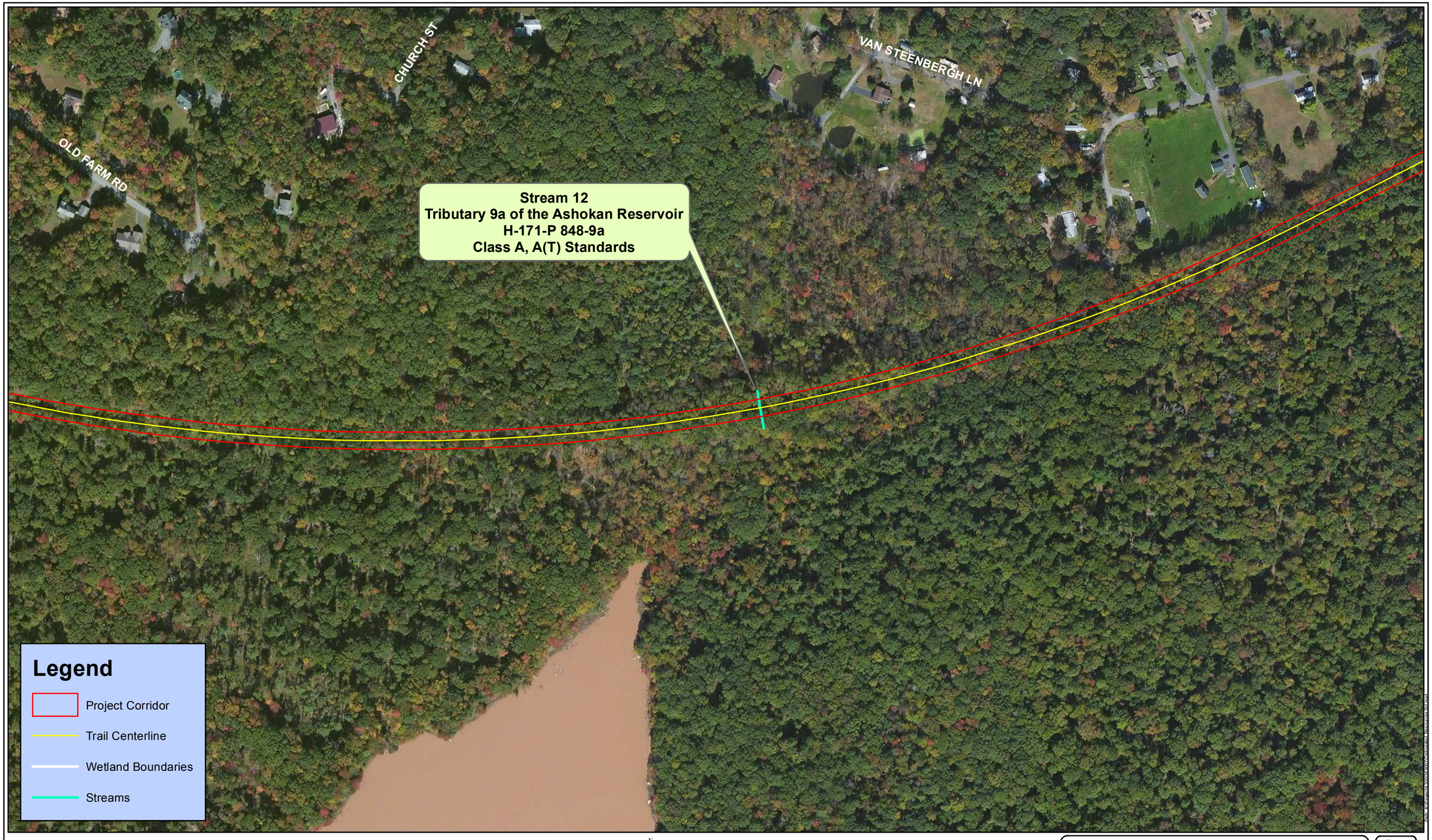
N W E S

1 inch = 250 feet

Ulster County Planning Department
Ashokan Rail Trail -
Delineated Resources
Ulster County May 2017 New York

Figure 6F

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 May 2017 New York

Figure 6G
Project No. 369.007

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

1 inch = 250 feet

Ulster County Planning Department
Ashokan Rail Trail - Delineated Resources
Ulster County May 2017 New York

Figure 6H
Project No. 369.007

Legend

- Project Corridor
- Trail Centerline
- Wetland Boundaries
- Streams

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 May 2017 New York

Figure 6I

Project No. 369.007

Barton & Loguidice, D.P.C.
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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	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	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.