



5 Dartmouth Drive, Suite 200
Auburn, NH 03032

April 18, 2024
File: 195113425

Attention: Ms. Stephanie Giovannucci
Town Administrator
Town of Northfield, NH
21 Summer Street
Northfield, NH 03276

Dear Ms. Giovannucci,

**Reference: Tilton & Northfield Water District - Proposed Water Treatment Plant
Planning Board Meeting Request**

The Tilton and Northfield Water District intends to start construction of a Water Treatment Plant with associated site improvements throughout 2024 and 2025 at their current well water supply facility at 371 NH Rte. 144, Tax Map R15 Lot 47A.

The Tilton and Northfield Water District is a municipal water utility company and is exempt from local regulations and the planning board review and approval process under RSA 674.30. On behalf of the Tilton and Northfield Water District and in conformance with RSA 674.30, we are requesting to provide an informational presentation of the project for the Town and public at the next scheduled Planning Board.

Should you have any questions or require any additional information please feel free to contact us.

Respectfully,

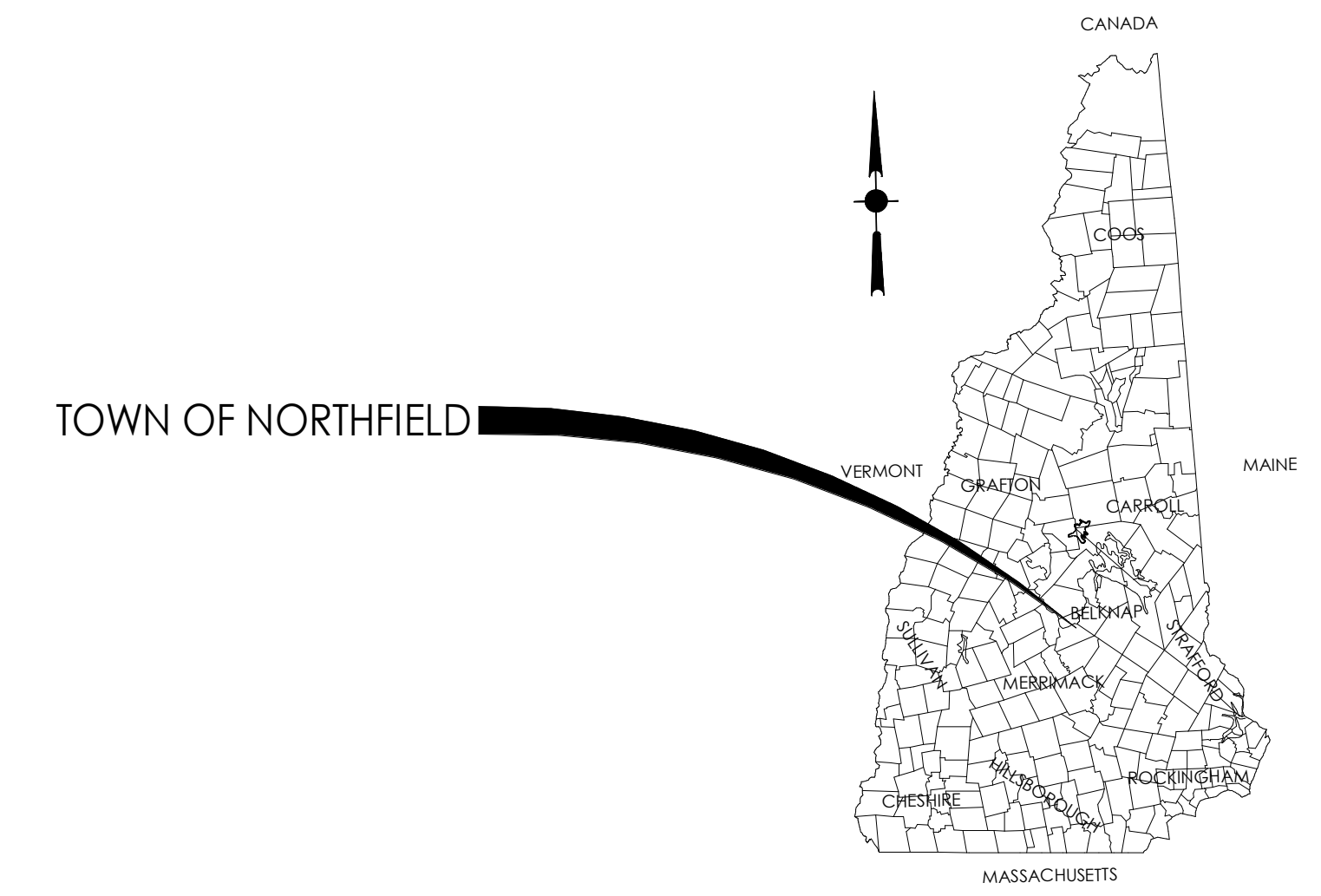
Stantec

Bryan Ruoff PE
Associate
Cell: 603 854-9501
bryan.ruoff@stantec.com

5 Dartmouth Drive Suite 200
Auburn NH 03032-3984

Attachment: n/a

c. Northfield Planning Board
John Chase - TNWD
Rene LaBranche, Stantec



LOCATION MAP

TILTON-NORTHFIELD WATER DISTRICT

TILTON-NORTHFIELD WATER DISTRICT WATER TREATMENT PLANT

PROJECT LOCATION
371 TILTON ROAD
NORTHFIELD, NH



VICINITY MAP

COMMISSIONERS

SEAN CHANDLER, CHAIR
ARTHUR DEMASS
GLEN BROWN

SUPERINTENDENT

JOHN P. CHASE

FOREMAN

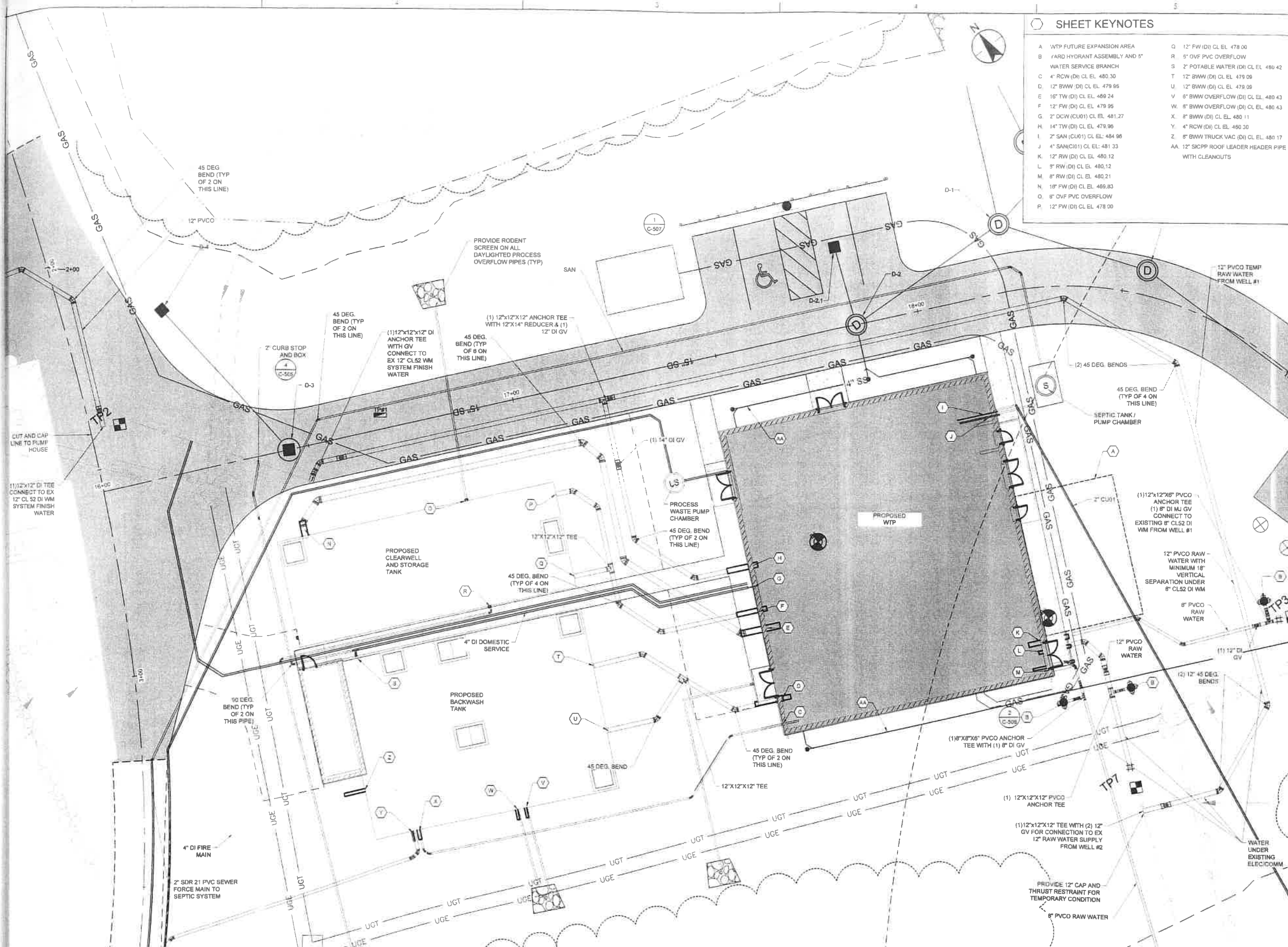
DOUG A. McPHAIL II

MARCH 2024

PROJECT NUMBER: 195113425

**PRELIMINARY
NOT FOR
CONSTRUCTION**

Not for permits, pricing or other official purposes. This document has not been completed or checked and is for general information or comment only.



SHEET KEYNOTES

A	WTP FUTURE EXPANSION AREA	Q	12" FW (DI) CL EL. 478.00
B	FARD HYDRANT ASSEMBLY AND 5" WATER SERVICE BRANCH	R	5" OV PVC OVERFLOW
C	4" RCW (DI) CL EL. 480.30	S	2" POTABLE WATER (DI) CL EL. 480.42
D	12" BWV (DI) CL EL. 479.95	T	12" BWV (DI) CL EL. 479.08
E	16" TW (DI) CL EL. 489.24	U	12" BWV (DI) CL EL. 479.08
F	12" FW (DI) CL EL. 479.95	V	6" BWV OVERFLOW (DI) CL EL. 480.43
G	2" DCW (CU01) CL EL. 481.27	W	8" BWV OVERFLOW (DI) CL EL. 480.43
H	14" TW (DI) CL EL. 479.96	X	8" BWV (DI) CL EL. 480.11
I	2" SAN (CU01) CL EL. 484.98	Y	4" RCW (DI) CL EL. 480.30
J	4" SAN(CI01) CL EL. 481.33	Z	8" BWV TRUCK VAC (DI) CL EL. 480.17
K	12" RW (DI) CL EL. 480.12	AA	12" SICPP ROOF LEADER HEADER PIPE WITH CLEANOUTS
L	9" RW (DI) CL EL. 480.12		
M	8" RW (DI) CL EL. 480.21		
N	18" FW (DI) CL EL. 489.83		
O	8" OV PVC OVERFLOW		
P	12" FW (DI) CL EL. 478.00		

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Stantec Consulting Services
43 New Skyline Blvd
Burlington, MA 01803-7756
Tel: 781.271-1000 www.stantec.com

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11/11/2020

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Permit/Seal

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TILTON-NORTHFIELD WATER DISTRICT

TILTON-NORTHFIELD WATER DISTRICT WATER TREATMENT PLANT

Northfield, New Hampshire

Project No.: 195113425

File Name: C:\194\DWG

MA	TC	FW	2024.03.15
Des	Org	Chg	11/11/2020

Title

YARD PIPING PLAN

Scale: 1"=10'

Revision: Sheet: X of

Drawing No. **C-103**

Consultant

Issue/Revision	Date	By	App'd	IT/IT/WR/ER

Permit/Seal

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TILTON-NORTHFIELD WATER DISTRICT
TILTON-NORTHFIELD WATER DISTRICT
WATER TREATMENT PLANT
Northfield, New Hampshire

Project No.: 195113425
File Name: C-201-02.DWG

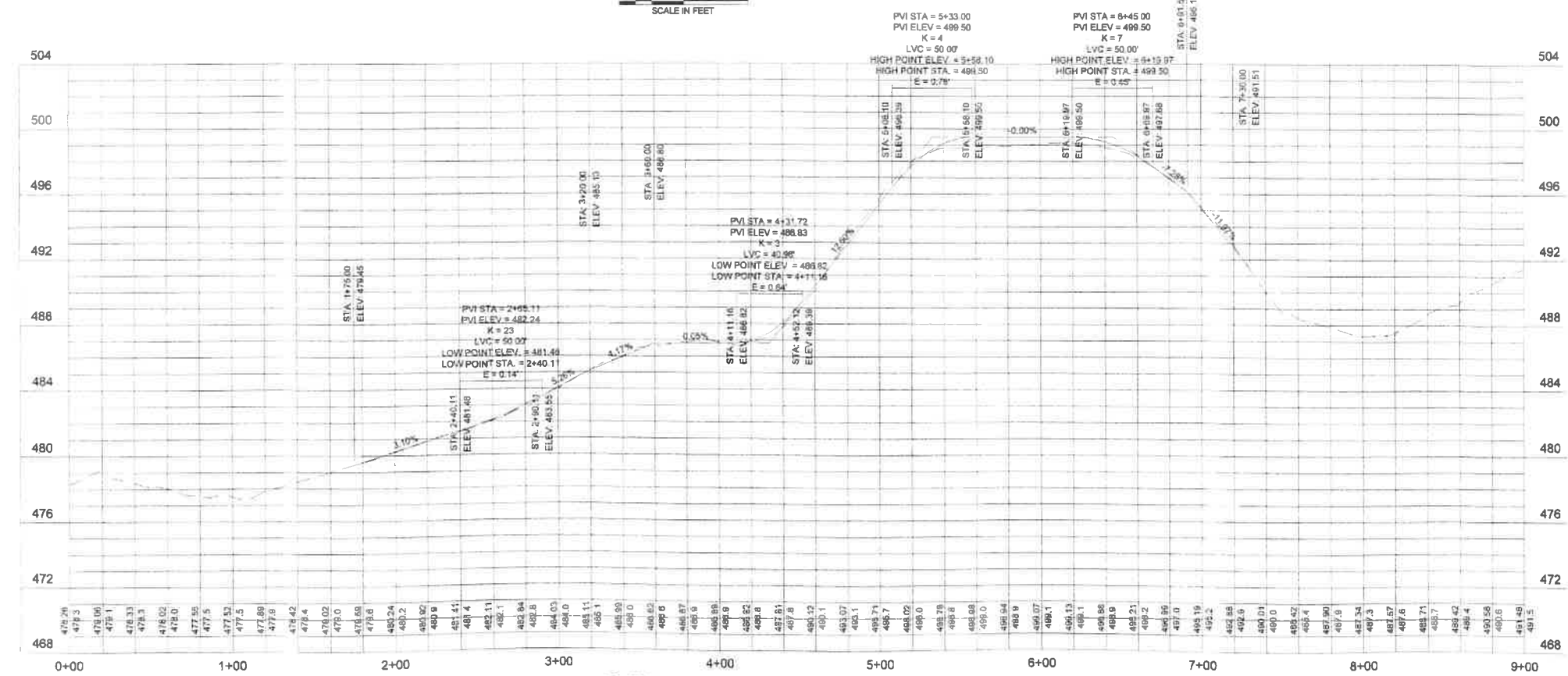
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Title
**ACCESS DRIVE
PLAN AND PROFILE**

Scale: AS SHOWN
Revision: Sheet: X of
Drawing No. **C-201**



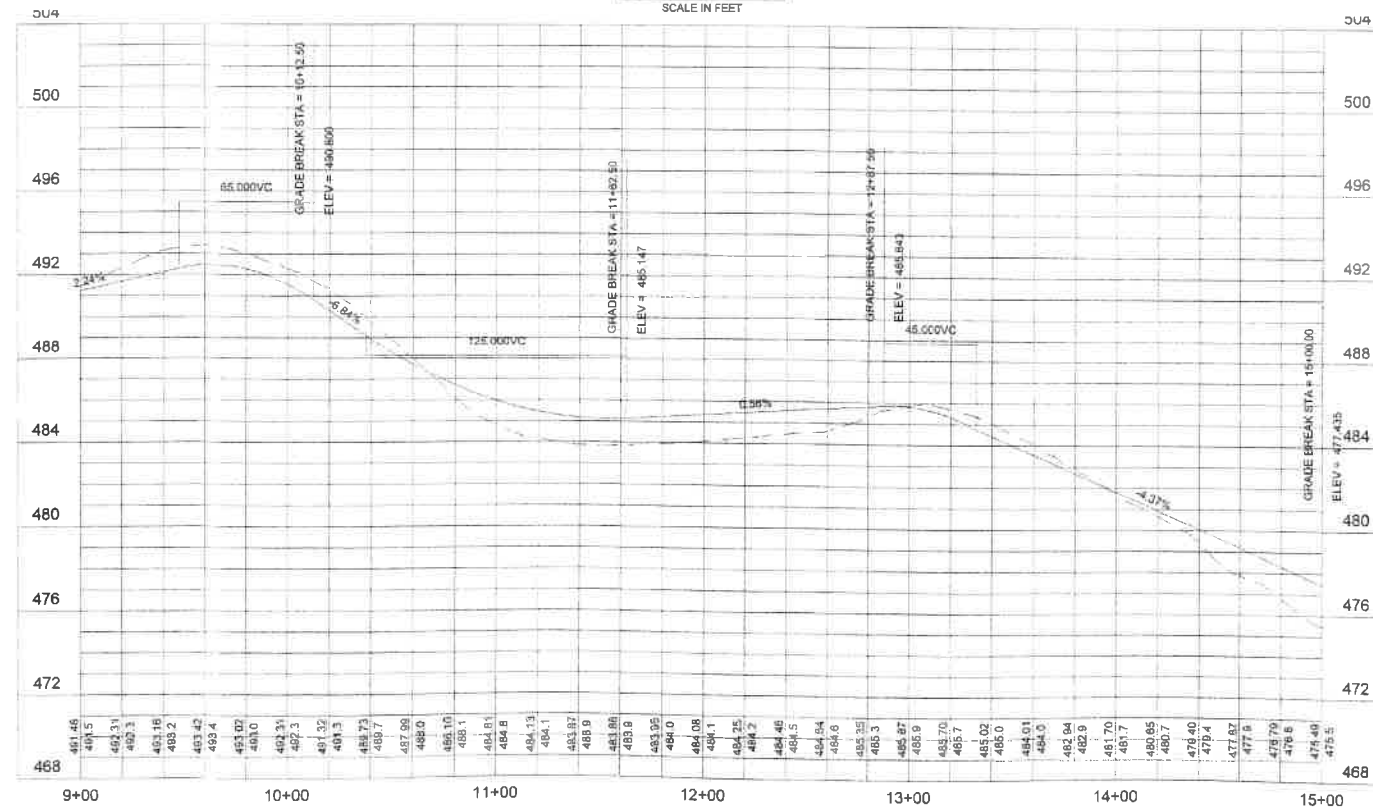
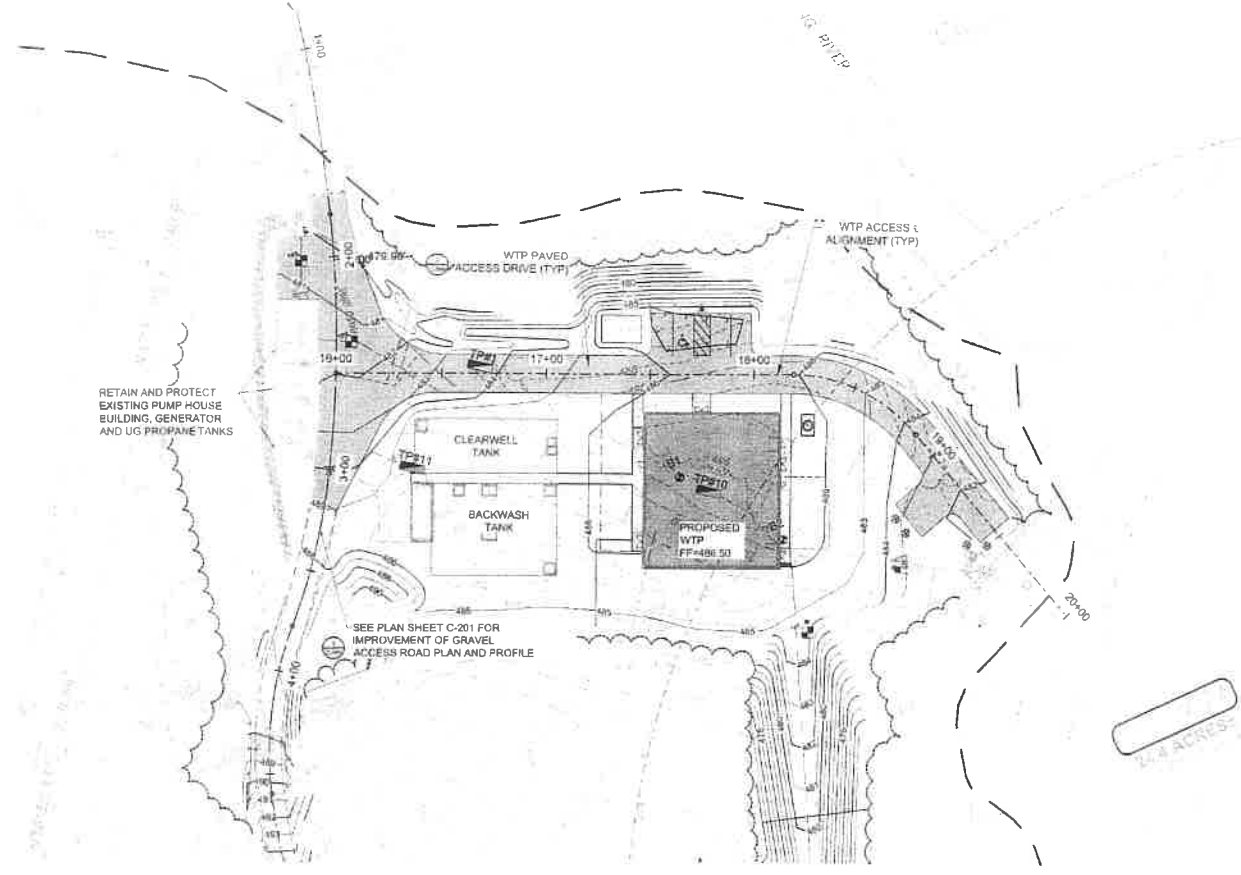
ACCESS DRIVE PLAN



ACCESS DRIVE PROFILE



SEE PLAN SHEET C-101
FOR INTERSECTION
RECONSTRUCTION LIMITS



WTP ACCESS DRIVE PROFILE



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Boston, MA 02109
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TILTON-NORTHFIELD WATER DISTRICT

TILTON-NORTHFIELD WATER DISTRICT
WATER TREATMENT PLANT

Northfield, New Hampshire

Project No.: 195113425

The Name: C-201-DWG

TWC	MDP	TW	2024.03.08
Dwn	Engn	Chk	TYP/MDP/EC

Title
WTP ACCESS DRIVE PLAN
AND PROFILE

Scale: AS SHOWN

Revision: Sheet: X of

Drawing No.: **C-202**

ATTACHMENT A – PROJECT NARRATIVE

1.0 Introduction

The Tilton and Northfield Water District (“TNWD”) seeks to construct a new public water treatment plant (WTP) (the “Project”) within TNWD-owned property located at 371 Tilton Road in Northfield, New Hampshire. The project includes the construction of a new water treatment plant (WTP) and updates to the existing water system and infrastructure to replace the existing water treatment facility. The existing access drive for the facility is located off Tilton Road (NH Route 140). The site and project are located adjacent to the Tioga River and the Northfield/Belmont municipal boundary.

2.0 Existing Site Conditions

The Project Area is located at 371 Tilton Road, Northfield, NH within an approximately 24-acre parcel. A residential home directly abuts the property to the southwest, and town-owned undeveloped land abuts the property in the east and south. The land-use in the surrounding area is predominantly commercial. USGS Topographic (Figure 1) and aerial locus (Figure 2) maps of the subject property are provided within Attachment B.

The project and study area within the property is located in the central portion of the site and is surrounded by gravel access roads and cleared openings. Vegetation within the study area consisted predominantly of early-successional species with the majority of trees being saplings less than six (6) inches in diameter. Review of historic aerial photos show the area being cleared of trees in the mid-1990s in conjunction with the construction of the existing water pump house facilities on the property. Dominant species within the study area included white pine (*Pinus strobus*), white oak (*Quercus alba*), white birch (*Betula alba*), red maple (*Acer rubrum*) and Eastern hemlock (*Tsuga canadensis*). No snags were observed within the study area, and none of the saplings had flaking or peeling bark that would be suitable roost habitat. No potentially suitable roost trees were identified within the study area.

According to the applicable Federal Emergency Management Agency - Flood Insurance Rate Map (“FEMA-FIRM”), Map Number 33013C0183E, effective Date April 29, 2010, a portion of the parcel is located in Zone AE, a “Special Flood Hazard Area”. A FEMA-FIRM Map is provided in Figure 3 of Attachment B. Soils in the project area are mapped as Champlain loamy, 8 to 15 percent slopes, Henniker fine sandy loam, 8 to 15 percent slopes, and Chocorua mucky peat 0 to 1 percent slopes according to the NRCS Web Soil Survey. An NRCS Soils Map is provided in Figure 4 of Attachment B.

Figures in Attachment B depict the Project Area and pertinent site features. Representative photographs are provided in Attachment C.

3.0 Freshwater Wetlands

Wetland resource areas were delineated in accordance with the U.S. Army Corps of Engineers Wetland Delineation Manual (USACE, 1987) and the “Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0” (2012). The federal delineation methodologies generally prescribe a multi-parameter approach, where

hydrophytic vegetation, hydrology and hydric soils are reviewed in conjunction with one another to demarcate the wetland – upland boundary.

According to New Hampshire state law RSA 482-A:2 Wetlands are “an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal conditions does support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Under New Hampshire state law RSA 482-A:4 II the jurisdictional area is defined as “Wherever fresh water flows or stands and in all areas above tidal waters not included in paragraph I of this section, it shall apply (in addition to great ponds or lakes of 10 acres or more in natural area as provided for in RSA 482-A:16-20 and RSA 482-A:21-25) to those portions of great ponds or lakes created by the raising of the water level of the same, whether by public or private structure, and to all surface waters of the state as defined in RSA 485-A:2 which contain fresh water, including the portion of any bank or shore which borders such surface waters, and to any swamp or bog subject to periodical flooding by fresh water including the surrounding shore.” There are no buffer zones unless a municipality designates a wetland as “prime” which is laid out in RSA 482-A:15. Northfield has not designated any Prime Wetlands so there are no wetlands with buffer zones within the Study Area.

3.1 Background

On April 13, 2022, field work was conducted to prepare a partial existing conditions plan of the subject parcel containing approximately 24.4 Acres. Fieldwork was limited to the project area, at the westerly side of the Tioga River in the vicinity of the existing developed area and adjacent upland areas as shown on the sketch provided by Stantec, Inc. and encompassed approximately 15 Acres. The site is located off NH RTE 140 (Tilton Road) and consisted of water supply production wells and associated infrastructure such as roads, building, fences and underground utilities and was otherwise forested landscape sloping down from the high point in the southwest corner of the property to the northeast toward the Tioga River along the easterly portion of the project area.

Jurisdictional Wetlands within the project area were field delineated by a New Hampshire Certified Wetland Scientist Christopher A. Guida, CSS, CWS in April 2022 in accordance with USAGE 1987 Delineation Manual, Regional Supplements and Field Identification of Hydric Soils in New England. Wetlands on site fell into 3 main categories, Palustrine Forested, Riverine Intermittent and Riverine Lower Perennial.

Palustrine Forested

These areas have a Cowardin Classification of Palustrine Forested, broad leaved deciduous, seasonally saturated / flooded (PFO1E) and are seasonally wet, low-lying depressions with poorly drained soils located within the forested areas and tend to be adjacent to the Intermittent Stream and along the perimeter of the flood plain areas associated with the Tioga River. Hydrophytic vegetation was dominated by Red Maple and Speckled Alder (*Alnus rugosa*). Soils on site tended to be sandy, somewhat excessively drained Champlain loamy fine sand and well drained Hennessey fine sandy loam.

Primary functions and values would be Groundwater Recharge/Discharge and Wildlife Habitat.

Riverine, Intermittent

The intermittent streams originated *off* subject site to the Southwest flowing down 15-25% slopes and then dissipating and infiltrating into the sandy soils where soils appeared to transition from glacial till soils to outwash sands along the Tioga River. These areas have a Cowardin Classification of Riverine, Intermittent, streambed, sand /cobble gravel in upper reaches. (R4SB3,4) The seasonal stream is seasonally flowing in October-July typically and is located within small drainage swale/ravine down a glacial till slope. Underlying soil tended to be Glacial Till along the steeper slopes and sandy outwash in lower flatter areas near Tioga River where water infiltrated into the ground prior to joining with the larger stream / river. Hydrophytic vegetation was limited due to nature of the streambed and topography was a mix of wetland and upland species.

Primary functions and values are Groundwater Recharge/Discharge and Wildlife Habitat.

Riverine, Lower Perennial

The Tioga River along the eastern portion of the property has a well-established flood plain and adjacent wetlands system including Palustrine Forested, Scrub/shrub and Emergent wetlands along the river and flood plain. The Tioga River on the subject property have a Cowardin Classification of Riverine, Lower Perennial, Unconsolidated Bottom, Sand. (R2UB2). Adjacent wetlands within the flood plain include Palustrine Emergent Persistent, Scrub-Shrub seasonally flooded. (PEM1/SSE). Primary functions and values are high and include almost all of the criteria within the Highway Method Functions and Values. Wetlands areas along the river are also being affected by on-going beaver activity.

4.0 Project Description

This project proposes to construct a new water treatment plant (WTP) and associated updates to the existing water system and infrastructure to replace the existing water treatment facility and pump house. The existing access drive for the facility is located off Tilton Road (NH Route 140) in Northfield. The site is adjacent to the Tioga River and the Northfield/Belmont town line. A new water treatment facility is proposed to house the treatment equipment, chemicals and provide office and lab space. The improvements also include the installation of a third water supply well that will provide water supply to the facility in addition to the continued use of the two existing gravel pack wells that currently source the facility to provide system redundancy. Other site improvements related to the treatment facility will include the installation of two (2) underground concrete water storage tanks, two (2) freeze dry backwash sludge infiltration basins, analyzer waste infiltration basins and a septic system. The remainder of the proposed site improvements involve the addition of stormwater management practices, modification of the existing access drive, addition of a designated parking area at the new facility, installation of utilities as required and installation of solar panels. The existing gravel access drive extends approximately 1,600 feet from NH Route 140 to the existing wells.

A portion of the proposed water line from the wells to the WTP will require crossing of the freshwater wetland located within the property. The portion of the wetland that will be crossed is currently maintained in an herbaceous vegetation state. The installation of the water line requires the existing grade to be raised to eliminate a sag and high points in the water line, to eliminate air in the water line, ensure water quality and ensure the integrity of the water pipeline. Approximately 2,900 square feet of permanent alteration are required to elevate the existing grade and water line in this location above the existing ground surface.

5.0 Avoidance and Mitigation Measures

5.1 *Wetland Crossing Location*

The identified wetland extends from west to east across the entire subject property; therefore, no alternative alignments to extend the water line from the WTP to the well locations to the WTP are feasible to eliminate the need for the wetland crossing. The water line has been sited within an existing disturbed portion of the wetland to avoid the need to cut any trees, and a culvert will be installed under the proposed water line to ensure that the existing hydrology at this wetlands crossing is maintained.

5.2 *Erosion and Sediment Controls*

Erosion and sedimentation control measures will be installed and in place prior to the beginning of the site work and will remain in-place until the site work is complete and permanent vegetation establishment ground cover has been established. Silt fencing and straw wattles will be installed along the perimeter of the Project Area. Stockpiles will be covered by water-proof material and surrounded by silt fencing. Catch basins nearby in the road will be protected with silt sacks, straw wattles and/or other typical inlet protection measures. Erosion controls cleaned/repaired as needed throughout all phases of construction.

5.3 *Construction Access*

Construction access to the site will be through a stabilized construction entrance off NH Route 140. This entrance will be lined with coarse aggregate and maintained in a condition which will prevent tracking or flowing of sediment outside the parcel. Any sediment that is tracked into the public roadway will be removed immediately.

5.4 *Spill Prevention and Containment*

During construction, a spill containment kit will be kept on site at all times. Personnel will be available to respond quickly in the case of a leak or spill. Equipment will be kept in a condition that prevents leakage or discharge of pollutants. Fuel, oil, hydraulic fluids, petroleum products and/or other chemicals will be stored in water-tight containers to minimize their exposure to precipitation and storm water. In the event that there is an accidental release of petroleum product during construction, the New Hampshire DES will be notified after the appropriate emergency response agencies.

6.0 Compliance with Northfield Wetlands Conservation Ordinance

The purpose of the ordinance is to protect the “public health, safety and general welfare of the community by controlling and guiding the use of land areas defined as Wetlands in Article II” (*Section 12.1 “Purpose and Authority” of the Northfield Wetlands Conservation Ordinance*).

The property is currently in municipal use and contains the existing water treatment facility. The Project will be a benefit to the public health, safety and general welfare of the community by improving the quality and volume of available public drinking water. The proposed activity within the freshwater wetland will not adversely affect its function or value as the proposed alteration has been minimized and sited in an area that is previously disturbed. Construction Best Management Practices (“BMPs”) for stormwater management and erosion/sedimentation controls will be installed to prevent runoff or sediments from entering the wetland resources on site. Impervious surface construction will be minimal, allowing for ample groundwater recharge and flood control within the Project Area. Given the strict adherence to best management practices and considering the intentional design of the water treatment facility to avoid Project-related wetland impacts to the greatest extent practicable, the wetland values identified in the ordinance will be preserved.



EXPEDITED MINIMUM IMPACT (EXP) WETLANDS PERMIT APPLICATION

Water Division / Land Resources Management



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A/Env-Wt 100-900 (Env-Wt 310.01)

APPLICANT'S NAME:

TOWN NAME:

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

SECTION 1 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05; Env-Wt 603.03; Env-Wt 603.05)
 Please use the [Wetland Permit Planning Tool \(WPPT\)](#), the Natural Heritage Bureau (NHB) [DataCheck Tool](#), the [Aquatic Restoration Mapper](#), or other sources to assist in identifying key features such as: [Priority Resource Areas \(PRAs\)](#), [protected species or habitats](#), coastal areas, designated rivers, or designated prime wetlands.

Does the property contain a PRA? If yes, provide the following information:	Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> • Does the project qualify for an Impact Classification Adjustment (such as an NH Fish and Game Department (NHFG) and NHB agreement for a classification downgrade) or a Project-Type Exception (such as a Maintenance or Statutory Permit-by-Notification (SPN) project)? See Env-Wt 407.02 and Env-Wt 407.04. • Protected species or habitat? <ul style="list-style-type: none"> ○ If yes, species or habitat name(s): ○ NHB Project ID #: • Bog? • Floodplain wetland contiguous to a tier 3 or higher watercourse? • Designated prime wetland or duly-established 100-foot buffer? • Sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone? 	Yes No Yes No Yes No Yes No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
Is the property within a Designated River corridor? If yes, provide the following information:	<input type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> • Name of Local River Management Advisory Committee (LAC): • A copy of the application was sent to the LAC on Month: <input style="width: 40px;" type="text"/> Day: <input style="width: 40px;" type="text"/> Year: <input style="width: 40px;" type="text"/> 	
For dredging projects, is the subject property contaminated?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> • If yes, list contaminant(s): 	
Is there potential to impact impaired waters, class A waters, or outstanding resource waters?	<input type="checkbox"/> Yes <input type="checkbox"/> No
For stream crossing projects, provide watershed size (see Wetland Permit Planning Tool or Stream Stats):	

SECTION 2 - ELIGIBILITY (Env-Wt 306.03; Env-Wt 310.01; Env-Wt 310.03)

You must confirm that your project meets *all* of the following statements to qualify for the EXP process:

- The project qualifies as minimum impact project (Env-Wt 306.03).
- The project does not include activities that are prohibited under RSA 482-A (Env-Wt 306.03(a)).
- The project does not include any work in a jurisdictional area that was started without first obtaining the applicable approval (Env-Wt 306.03(b)).
- No work has been done on the subject property pursuant to another EXP or a Statutory Permit-by-Notification (SPN) within 12 months of the date this EXP will be issued. Alternatively, if any work has been done on the subject property pursuant to another EXP or a SPN within 12 months of the date this EXP will be issued, then you are submitting information, including a plan, with this application demonstrating that:
 - The work proposed in this EXP application is wholly unrelated to and separate from the work already done under the EXP or SPN; and
 - The work proposed in this EXP application, when combined with work that has been done under previously issued EXPs or SPNs within the last 12 months, does not constitute a project for which a Standard Permit is required (Env-Wt 310.03(a)).
- If the project is located in a PRA, it also qualifies for an impact classification adjustment under Env-Wt 407.02 or a project-type exception (PTE) under Env-Wt 407.04 (Env-Wt 310.01(d)(6)).

My project meets all statements above. Proceed to Section 3.

My project does not meet all of the statements above. **Your project does not qualify for the EXP process. Your project either is not permissible or requires a Standard Permit.**

SECTION 3 - INFORMATION ON THE PROPOSED PROJECT (Env-Wt 310.01(c))

Identify the rule(s)/provision(s) which make the project a minimum impact project. Refer to the project list below and the [Expedited Minimum Impact \(EXP\) Project Classification Guidance Document](#).

- Aquatic Vegetation Control Projects (Env-Wt 510.08(a))
- Water Access Structure Construction Projects (Env-Wt 511.06(a))
- Beach Replenishment Projects (Env-Wt 511.07(a))
- Deck or Patio Repair Projects (Env-Wt 511.08(a))
- Breakwater Maintenance and Repair Projects (Env-Wt 512.07(b))
- Docking and Accessory Docking Structure Construction, Repair, and Replacement Projects (Env-Wt 513.24(a))
- Docking Structure Modification Projects (Env-Wt 513.25(a))
- Accessory Docking Structure Installation, Construction, Modification, Repair, and Replacement Projects (Env-Wt 513.26(a))
- Canopy Projects (Env-Wt 513.27(a))
- Bank/Shoreline Stabilization Construction Projects (Env-Wt 514.07(a))
- Dug-in Basins and Boathouse Construction or Modification Projects (Env-Wt 515.06(a), (b))
- Dug-in Basins and Boathouse Maintenance and Repair Projects (Env-Wt 515.07(a))
- Intake and Outflow Structure Construction, Maintenance and Repair Projects (Env-Wt 516.05; Env-Wt 516.06(b))
- Trail or Pathway Projects (Env-Wt 517.06(a); Env-Wt 517.06(d))
- Boardwalk Projects (Env-Wt 517.07(a); (Env-Wt 517.09))
- Dry Hydrants and Other Non-Docking Structure Projects (Env-Wt 518.07(a)(1), (b))
- Pond Construction, Maintenance, and Repair Projects (Env-Wt 519.08(a), (b); Env-Wt 519.09(a))
- Residential Utility Installation Projects (Env-Wt 521.06(a)(7))

irm@des.nh.gov or (603) 271-2147

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des.nh.gov

- Non-tidal Dredging Projects (Env-Wt 523.04(a))
- Residential, Commercial, and Industrial Development Projects (Env-Wt 524.06(b))
- Restoration/Enhancement Projects (Env-Wt 525.05)
- Dam Construction, Reconstruction, or Replacement Projects (Env-Wt 526.06(a))
- Dam Modification, Repair, or Maintenance Projects (Env-Wt 526.07(a))
- Pubic Highway Projects (Env-Wt 527.06; Env-Wt 527.07)
- Coastal Projects (Env-Wt 600)
- Stream Crossing Projects (Env-Wt 903.01(e))
- All Other Projects (Env-Wt 407.03)

Provide the project-specific information required by the rule(s)/provision(s). Refer to Chapters Env-Wt 400, Env-Wt 500, Env-Wt 600, and/or Env-Wt 900, as applicable, for project-specific application and design requirements. Please see applicable standard [Project Specific Worksheets](#) for guidance.

For projects located on waterbodies, provide the linear feet of shoreline frontage on the property: linear feet

Not applicable

Provide a brief description of the project and the purpose of the project, outlining the scope of work to be performed and whether impacts are temporary or permanent. *Do not* reply "See attached".

SECTION 7 - PROPERTY OWNER INFORMATION, IF DIFFERENT FROM APPLICANT (Env-Wt 310.01(a))		
If the owner is a trust or a company, then the name of the trust or company should be written as the owner's name.		
NAME:		
MAILING ADDRESS:		
TOWN/CITY:	STATE:	ZIP CODE:
PHONE:	EMAIL ADDRESS (OPTIONAL):	
ELECTRONIC COMMUNICATION: By initialing here, I hereby authorize NHDES to communicate all matters relative to this application electronically.		
SECTION 8 - APPLICATION FEE (RSA 482-A:3, I)		
<input type="checkbox"/> \$400 for minimum impact projects. Please make your check or money order payable to: "Treasurer - State of NH".		
SECTION 9 - REQUIRED CERTIFICATIONS (Env-Wt 310.01(d))		
Initial each box below to certify:		
Initials:	The proposed project meets the conditions and limits of the applicable minimum impact project rule.	
Initials:	All abutters have been notified.	
Initials:	If the project is to repair or replace a docking structure, the docking structure is an existing legal structure. (<input type="checkbox"/> N/A)	
Initials:	The proposal is the alternative with the least adverse impact to jurisdictional areas, as required by Env-Wt 310.01(d)(4).	
Initials:	The project is not an after-the-fact application.	
Initials:	The project is: <ul style="list-style-type: none"> • Not located in a PRA, or • Is located in a PRA but is subject to a classification adjustment under Env-Wt 407.02 or a project-type exception under Env-Wt 407.04. 	
Initials:	The applicant is aware of the limits of the EXP and understands and will comply with all conditions in the EXP and all applicable conditions in Env-Wt 307.	

Initials:	To the best of the signer’s knowledge and belief, all required notifications have been provided.
Initials:	The information submitted on or with the application is true, complete, and not misleading to the best of the signer’s knowledge and belief.
Initials:	<p>The signer understands that:</p> <ul style="list-style-type: none"> • The submission of false, incomplete, or misleading information constitutes grounds for NHDES to: <ol style="list-style-type: none"> 1. Deny the application. 2. Revoke any approval that is granted based on the information. 3. If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1.
Initials:	If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing.

SECTION 10 - REQUIRED SIGNATURES (Env-Wt 310.01(d))

SIGNATURE (OWNER)*:	PRINT NAME LEGIBLY:	DATE:
---------------------	---------------------	-------

*Note: If the applicant is not the owner of the property, each property owner also shall sign and date the application provided that property owner signatures shall not be required for transportation projects adjacent to existing rights-of-way where an easement will be obtained prior to the start of construction (Env-Wt 311.11(d)). Check the following box if your project meets this exception: .

SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER):	PRINT NAME LEGIBLY:	DATE:
SIGNATURE (AGENT, IF APPLICABLE):	PRINT NAME LEGIBLY:	DATE:

SECTION 11 - CONSERVATION COMMISSION SIGNATURE (Env-Wt 310.01(h))**
 The signed statement from the Conservation Commission may be submitted electronically.

The signature below certifies that the municipal Conservation Commission or, if there is no conservation commission, the local governing body, has reviewed this application and the municipality waives its right to intervene on the project, per RSA 482-A:11.

AUTHORIZED COMMISSION SIGNATURE:	PRINT NAME LEGIBLY:	DATE:
----------------------------------	---------------------	-------

SECTION 12 - LOCAL RIVER MANAGEMENT ADVISORY COMMITTEE SIGNATURE (Env-Wt 310.01(i))**		
The signature below certifies that the LAC waives its right to intervene per RSA 482-A:11: (<input type="checkbox"/> N/A This project is not within a Designated River Corridor)		
AUTHORIZED LAC REPRESENTATIVE SIGNATURE:	PRINT NAME LEGIBLY:	DATE:

**Note: If the application is administratively complete, except for the signed statement from the Conservation Commission and/or LAC, the application will be processed under the application processing times established in RSA 482-A:3, XIV (Env-Wt 310.02(h)). The applicant may also indicate that they are applying for a minimum impact application under standard processing timelines.

SECTION 14 - TOWN / CITY CLERK SIGNATURE (Env-Wt 310.01(f))	
As required by RSA 482-A:3, I(a)(1), I hereby certify that the municipality has received four copies of the application, including all attachments.	
TOWN/CITY CLERK SIGNATURE:	PRINT NAME LEGIBLY:
TOWN/CITY:	DATE:

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3, I(a)(1)

1. IMMEDIATELY sign the original application form and four copies in the signature space provided above.
2. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
3. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board.
4. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

Submit the single, original permit application form bearing the signature of the Town/City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery at the address at the bottom of this page.



EXPEDITED MINIMUM IMPACT (EXP) WETLANDS PERMIT APPLICATION APPLICATION CHECKLIST



Keep this checklist for your reference. Do not submit it with your application.

APPLICATION CHECKLIST

Required for all applications:

- The completed, dated, signed and certified application (Env-Wt 310.01).
- Application fee of \$400, as determined in RSA 482-A:3, I (Env-Wt 310.01(e)). Make check or money order payable to "Treasurer – State of NH".
- [US Army Corps of Engineers \(ACE\) "Appendix B, New Hampshire General Permits \(GPs\), Required Information and Corps Secondary Impacts Checklist"](#) and its required attachments (Env-Wt 307.02). This includes the [US Fish and Wildlife Service IPAC review](#) and New Hampshire [Section 106 Historic/Archaeological Resource review](#).
- A copy of the town tax map(s) showing the location of the proposed project in relation to abutters (Env-Wt 310.01(b)(2)).
- A list of abutters' names and mailing addresses to cross-reference with the tax map (Env-Wt 310.01(b)(3)).
- A copy of the appropriate US Geological Survey map with the property and project clearly marked (Env-Wt 310.01(b)(4)).
- Photos that meet all of the following criteria:
 - Clearly show the area to be impacted,
 - Are mounted or printed no more than two per sheet on 8.5-inch x 11-inch paper, and
 - Are annotated to explain impact (Env-Wt 310.01(b)(6)).
- The results and identification number of the NHB DataCheck (Env-Wt 310.01(b)(8)), as well as documentation of any consultation request made to NHF&G with the consultation results and recommendations. See [Wetlands Permitting: Protected Species and Habitat](#) fact sheet.
- An accurate drawing showing the precise location, with detailed dimensions clearly annotated to document existing site conditions and to show the proposed impacts to the jurisdictional areas (Env-Wt 310.01(c)(4)).
- An accurate drawing to show the impact of the proposed activity on jurisdictional areas, including the following (Env-Wt 310.01(c)(5)):
 - An overview of the property and proposed impact areas in relation to property lines,
 - The scale, if any, used on the drawing,
 - If the drawing is not to scale, the dimensions of all existing and proposed structures, existing and proposed topography, and all other relevant features necessary to clearly define the project,
 - A labeled north-pointing arrow to indicate orientation,
 - A legend that clearly indicates all symbols, line types, and shading used on the plan,
 - The location of the jurisdictional areas delineated and associated wetland delineation notes, in accordance with Env-Wt 400,
 - The proposed construction sequence including pre-construction through post-construction activities and the relative timing and progression of all work,
 - The location and type of siltation and turbidity controls indicated graphically and labeled or annotated as necessary,

irm@des.nh.gov or (603) 271-2147

29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

des.nh.gov

- For any project using a temporary coffer dam and for any repair of a tier 3 stream crossing, the date, signature, and seal of the licensed professional engineer who prepared or had responsibility for the plan(s),
- For restoration/enhancement projects, the information required to be shown on a map by Env-Wt 525,
- For tidal minimum impact projects, the information required to be shown on a map by Env-Wt 600, and
- For minimum impact stream crossing projects, the information required to be shown on a map by Env-Wt 900.
- Plans or documentation showing that impacts have been avoided and minimized to the maximum extent practicable per Env-Wt 313.03(a).
- The linear distance of the project from abutting property boundaries (Env-Wt 310.01(c)(7)).

Required for certain project type, as applicable:

- The type of dock construction (Env-Wt 310.01(c)(8)).
- The diameter of culvert(s) to be used for road or driveway crossings (Env-Wt 310.01(c)(8)).
- The additional information specified in Env-Wt 522 for minimum impact agricultural applications (Env-Wt 310.01(c)(8)).
- Plans for maintenance of retaining walls, as specified in Env-Wt 514 (if applicable; Env-Wt 310.01(c)(8)).
- Specifications and plans for maintenance of rip-rap, as required by Env-Wt 514 (Env-Wt 310.01(c)(8)).
- Any other project-specific plan, cross section, or information required under Env-Wt 500 and as described in the project-specific worksheet (Env-Wt 310.01(c)(8)).
- Information required on the [Coastal Resource Worksheet](#) for coastal projects under Env-Wt 600.
- Prime Wetlands information required under Env-Wt 700.
- Information requested on the [Stream Crossing Worksheet](#) required by Env-Wt 900.



EXPEDITED (EXP) MINIMUM IMPACT WETLANDS PERMIT APPLICATION REVIEW PROCESS



(Keep this sheet for your reference; do not submit it with your application.)

In accordance with Env-Wt 310.02, the department must review an application for an expedited permit (EXP) for administrative completeness and compliance with applicable department rules within 30 calendar days of receipt if the application has been signed by:

- The municipal conservation commission or, if there is no conservation commission, the local governing body, certifying that the municipality waives its right to intervene on the project, which may be submitted electronically; and
- The LAC, if the project is within LAC jurisdiction, certifying that the LAC waives its right to intervene on the project. "LAC jurisdiction" means the authority conferred by RSA 483:8-a, III upon a local river management advisory committee relative to activities within a designated river or river corridor, provided that for the purpose of routine roadway maintenance activities conducted under an EXP, LAC jurisdiction is limited to activities in or within 250 feet of a tier 2 or tier 3 designated river that have a direct surface water connection to the designated river (Env-Wt 103.27).

Administrative Completeness Review:

If the application is administratively complete, complies with applicable requirements, and has the signature(s) mentioned above, the department will issue an EXP and post the information on [OneStop](#) within one business day of determining that the application was complete and in compliance with all applicable requirements.

If the application is lacking anything other than the signatures mentioned above and the project qualifies for an EXP, the department will send a written notice to the applicant that:

- Identifies each item that is missing; and
- Informs the applicant that in order to proceed under the EXP, the applicant must submit all necessary information within 20 days of the date of the notice or the application will be denied.

If the application was administratively complete except for one or both of the signatures required above, the department will send a written notice to the applicant that the application will be processed under the application processing times established in RSA 482-A:3, XIV.

If the applicant receives the above-mentioned notice and wishes to proceed under an EXP, the applicant must submit a revised application for an EXP that provides all of the required information within 20 days of the date of the notice. If the applicant does not submit all necessary information to the department within 20 days, the department will deny the EXP.

Technical Review:

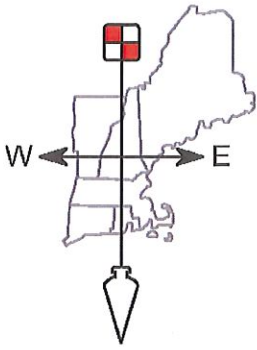
If the information submitted as part of the application is not sufficient for the department to determine that the project meets the criteria for an EXP, the department shall send a request for more information, together with any written technical comments the department deems necessary, within 30 calendar days of receipt of the application. Such request and technical comments shall be sent by electronic means if the applicant or applicant's agent has indicated that doing so is acceptable.

If the project proposed in the EXP application does not comply with applicable requirements, the department will deny the application and notify the applicant in writing of the reason(s) for the denial.

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FIELDSTONE

Surveying ♦ Engineering
Land Planning ♦ Septic Designs

LAND CONSULTANTS, PLLC

206 Elm Street, Milford, NH 03055 - Phone: 603-672-5456 - Fax: 603-413-5456
www.FieldstoneLandConsultants.com

November 29, 2022

Bryan Ruoff, PE

Associate

Stantec, Inc

5 Dartmouth Drive Suite 200

Auburn NH 03032-3984

RE: Wetland Report

Map R15, Lot 47A

371 Tilton Road, Northfield NH

Tilton & Northfield Aqueduct Co, Inc.

WETLAND REPORT:

Background:

In April 2022 (4/13/22) field work was conducted to prepare a partial existing conditions plan of the subject parcel containing approximately 24.4 Acres. Fieldwork was limited to the westerly side of the Tioga River in the vicinity of the existing developed area and adjacent upland areas as shown on the sketch provided by Stantec, Inc. and encompassed approximately 15 Acres. The site is located off of NH RTE 140 (Tilton Road) and consisted of water supply production wells and associated infrastructure such as roads, building, fences and underground utilities and was otherwise forested landscape sloping down from the high point in the southwest corner of the property to the northeast toward the Tioga River along the easterly portion of the project area.

Wetlands Delineation:

Jurisdictional Wetlands within the project area were delineated by Certified Wetland Scientist Christopher A. Guida, CSS, CWS in April 2022 in accordance with USACE 1987 Delineation Manual, Regional Supplements and Field Identification of Hydric Soils in New England. Wetlands on site fell into 3 main categories, Palustrine Forested, Riverine Intermittent and Riverine Lower Perennial.

Palustrine Forested:

These areas have a Cowardin Classification of Palustrine Forested, broad leaved deciduous, seasonally saturated / flooded (PFO1E) and are seasonally wet, low lying depressions with poorly drained soils located within the forested areas and tend to be adjacent to the Intermittent Stream and along the perimeter of the flood plain areas associated with the Tioga River. Hydrophytic vegetation was dominated by Red Maple (*Acer rubrum*), and Speckled Alder (*Alnus rugosa*). Soils on site tended to be sandy, somewhat excessively drained Champlain loamy fine sand and well drained Henniker fine sandy loam. Primary functions and values would be Groundwater Recharge/Discharge and Wildlife Habitat.

Riverine, Intermittent:

The intermittent streams originated off subject site to the Southwest flowing down 15-25% slopes and then dissipating and infiltrating into the sandy soils where soils appeared to transition from glacial till soils to outwash sands along the Tioga River. These areas have a Cowardin Classification of Riverine, Intermittent, streambed, sand /cobble gravel in upper reaches. (R4SB3,4) The seasonal stream is seasonally flowing in October-July typically and is located within small drainage swale/ravine down a glacial till slope. Underlying soil tended to be Glacial Till along the steeper slopes and sandy outwash in lower flatter areas near Tioga River where water infiltrated into the ground prior to joining with the larger stream / river. Hydrophytic vegetation was limited due to nature of the streambed and topography was a mix of wetland and upland species.

Primary functions and values are Groundwater Recharge/Discharge and Wildlife Habitat.

Riverine, Lower Perennial:

The Tioga River along the eastern portion of the property has a well-established flood plain and adjacent wetlands system including Palustrine Forested, Scrub/shrub and Emergent wetlands along the river and flood plain. The Tioga River on the subject property have a Cowardin Classification of Riverine, Lower Perennial, Unconsolidated Bottom, Sand. (R2UB2). Adjacent wetlands within the flood plain include Palustrine Emergent Persistent, Scrub-Shrub seasonally flooded. (PEM1/SSE).

Wetland Report– Tilton Rd, Northfield NH

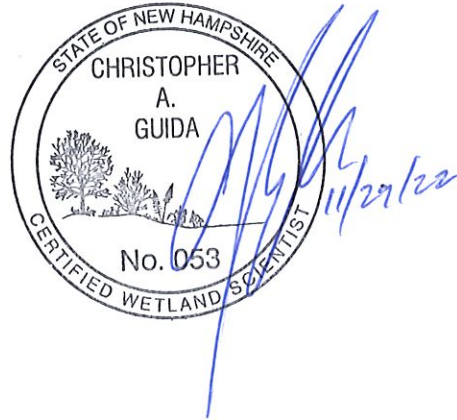
Primary functions and values are high and include almost all of the criteria within the Highway Method Functions and Values (see attached). Wetlands areas along the river are also being affected by on-going beaver activity.

Please feel free to contact me with any questions or if more detailed information is needed.

Sincerely,
Fieldstone Land Consultants, PLLC



Christopher A. Guida, CSS, CWS
Certified Soil & Wetland Scientist





Typical site access drive. 4-13-22



Intermittent Stream 4-13-22



Intermittent stream transition / infiltrating into sandy soils 4-13-22



Intermittent stream with adjacent Palustrine Forested Wetlands



Tioga River – Riverine, Lower Perennial 4-13-22



Palustrine Emergent / Scrub Shrub 4-13-22



Appendix A

Wetland evaluation supporting documentation; Reproducible forms.

Below is an example list of considerations that was used for a New Hampshire highway project. Considerations are flexible, based on best professional judgment and interdisciplinary team consensus. This example provides a comprehensive base, however, and may only need slight modifications for use in other projects.



GROUNDWATER RECHARGE/DISCHARGE— This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. It refers to the fundamental interaction between wetlands and aquifers, regardless of the size or importance of either.

CONSIDERATIONS/QUALIFIERS

1. Public or private wells occur downstream of the wetland.
2. Potential exists for public or private wells downstream of the wetland.
3. Wetland is underlain by stratified drift.
4. Gravel or sandy soils present in or adjacent to the wetland.
5. Fragipan does not occur in the wetland.
6. Fragipan, impervious soils, or bedrock does occur in the wetland.
7. Wetland is associated with a perennial or intermittent watercourse.
8. Signs of groundwater recharge are present or piezometer data demonstrates recharge.
9. Wetland is associated with a watercourse but lacks a defined outlet or contains a constricted outlet.
10. Wetland contains only an outlet, no inlet.
11. Groundwater quality of stratified drift aquifer within or downstream of wetland meets drinking water standards.
12. Quality of water associated with the wetland is high.
13. Signs of groundwater discharge are present (e.g., springs).
14. Water temperature suggests it is a discharge site.
15. Wetland shows signs of variable water levels.
16. Piezometer data demonstrates discharge.
17. Other



FLOODFLOW ALTERATION (Storage & Desynchronization) — This function considers the effectiveness of the wetland in reducing flood damage by water retention for prolonged periods following precipitation events and the gradual release of floodwaters. It adds to the stability of the wetland ecological system or its buffering characteristics and provides social or economic value relative to erosion and/or flood prone areas.

CONSIDERATIONS/QUALIFIERS

1. Area of this wetland is large relative to its watershed.
2. Wetland occurs in the upper portions of its watershed.
3. Effective flood storage is small or non-existent upslope of or above the wetland.
4. Wetland watershed contains a high percent of impervious surfaces.
5. Wetland contains hydric soils which are able to absorb and detain water.
6. Wetland exists in a relatively flat area that has flood storage potential.
7. Wetland has an intermittent outlet, ponded water, or signs are present of variable water level.
8. During flood events, this wetland can retain higher volumes of water than under normal or average rainfall conditions.
9. Wetland receives and retains overland or sheet flow runoff from surrounding uplands.
10. In the event of a large storm, this wetland may receive and detain excessive flood water from a nearby watercourse.
11. Valuable properties, structures, or resources are located in or near the floodplain downstream from the wetland.
12. The watershed has a history of economic loss due to flooding.
13. This wetland is associated with one or more watercourses.
14. This wetland watercourse is sinuous or diffuse.
15. This wetland outlet is constricted.
16. Channel flow velocity is affected by this wetland.
17. Land uses downstream are protected by this wetland.
18. This wetland contains a high density of vegetation.
19. Other

FISH AND SHELLFISH HABITAT (FRESHWATER) — This function considers the effectiveness of seasonal or permanent watercourses associated with the wetland in question for fish and shellfish habitat.



CONSIDERATIONS/QUALIFIERS

1. Forest land dominant in the watershed above this wetland.
2. Abundance of cover objects present.

STOP HERE IF THIS WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE

3. Size of this wetland is able to support large fish/shellfish populations.
4. Wetland is part of a larger, contiguous watercourse.
5. Wetland has sufficient size and depth in open water areas so as not to freeze solid and retain some open water during winter.
6. Stream width (bank to bank) is more than 50 feet.
7. Quality of the watercourse associated with this wetland is able to support healthy fish/shellfish populations.
8. Streamside vegetation provides shade for the watercourse.
9. Spawning areas are present (submerged vegetation or gravel beds).
10. Food is available to fish/shellfish populations within this wetland.
11. Barrier(s) to anadromous fish (such as dams, including beaver dams, waterfalls, road crossing) are absent from the stream reach associated with this wetland.
12. Evidence of fish is present.
13. Wetland is stocked with fish.
14. The watercourse is persistent.
15. Man-made streams are absent.
16. Water velocities are not too excessive for fish usage.
17. Defined stream channel is present.
18. Other

Although the above example refers to freshwater wetlands, it can also be adapted for marine ecosystems. The following is an example provided by the National Marine Fisheries Service (NMFS) of an adaptation for the fish and shellfish function.

FISH AND SHELLFISH HABITAT (MARINE) — This function considers the effectiveness of wetlands, embayments, tidal flats, vegetated shallows, and other environments in supporting marine resources such as fish, shellfish, marine mammals, and sea turtles.

CONSIDERATIONS/QUALIFIERS

1. Special aquatic sites (tidal marsh, mud flats, eelgrass beds) are present.
2. Suitable spawning habitat is present at the site or in the area.
3. Commercially or recreationally important species are present or suitable habitat exists.
4. The wetland/waterway supports prey for higher trophic level marine organisms.
5. The waterway provides migratory habitat for anadromous fish.
6. Essential fish habitat, as defined by the 1996 amendments to the Magnuson-Stevens Fishery & Conservation Act, is present (consultation with NMFS may be necessary).
7. Other



SEDIMENT/TOXICANT/PATHOGEN RETENTION — This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants, or pathogens in runoff water from surrounding uplands or upstream eroding wetland areas.

CONSIDERATIONS/QUALIFIERS

1. Potential sources of excess sediment are in the watershed above the wetland.
2. Potential or known sources of toxicants are in the watershed above the wetland.
3. Opportunity for sediment trapping by slow moving water or deepwater habitat are present in this wetland.
4. Fine grained mineral or organic soils are present.
5. Long duration water retention time is present in this wetland.
6. Public or private water sources occur downstream.
7. The wetland edge is broad and intermittently aerobic.
8. The wetland is known to have existed for more than 50 years.
9. Drainage ditches have not been constructed in the wetland.

STOP HERE IF WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE.

10. Wetland is associated with an intermittent or perennial stream or a lake.
11. Channelized flows have visible velocity decreases in the wetland.
12. Effective floodwater storage in wetland is occurring. Areas of impounded open water are present.
13. No indicators of erosive forces are present. No high water velocities are present.
14. Diffuse water flows are present in the wetland.
15. Wetland has a high degree of water and vegetation interspersion.
16. Dense vegetation provides opportunity for sediment trapping and/or signs of sediment accumulation by dense vegetation is present.
17. Other



NUTRIENT REMOVAL/RETENTION/TRANSFORMATION — This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries.

CONSIDERATIONS/QUALIFIERS

1. Wetland is large relative to the size of its watershed.
2. Deep water or open water habitat exists.
3. Overall potential for sediment trapping exists in the wetland.

4. Potential sources of excess nutrients are present in the watershed above the wetland.
 5. Wetland saturated for most of the season. Pondered water is present in the wetland.
 6. Deep organic/sediment deposits are present.
 7. Slowly drained fine grained mineral or organic soils are present.
 8. Dense vegetation is present.
 9. Emergent vegetation and/or dense woody stems are dominant.
 10. Opportunity for nutrient attenuation exists.
 11. Vegetation diversity/abundance sufficient to utilize nutrients.
- STOP HERE IF WETLAND IS NOT ASSOCIATED WITH A WATERCOURSE.
12. Waterflow through this wetland is diffuse.
 13. Water retention/detention time in this wetland is increased by constricted outlet or thick vegetation.
 14. Water moves slowly through this wetland.
 15. Other

PRODUCTION EXPORT (Nutrient) — This function evaluates the effectiveness of the wetland to produce food or usable products for humans or other living organisms.



CONSIDERATIONS/QUALIFIERS

1. Wildlife food sources grow within this wetland.
2. Detritus development is present within this wetland.
3. Economically or commercially used products found in this wetland.
4. Evidence of wildlife use found within this wetland.
5. Higher trophic level consumers are utilizing this wetland.
6. Fish or shellfish develop or occur in this wetland.
7. High vegetation density is present.
8. Wetland exhibits high degree of plant community structure/species diversity.
9. High aquatic vegetative diversity/abundance is present.
10. Nutrients exported in wetland watercourses (permanent outlet present).
11. “Flushing” of relatively large amounts of organic plant material occurs from this wetland.
12. Wetland contains flowering plants that are used by nectar-gathering insects.
13. Indications of export are present.
14. High production levels occurring, however, no visible signs of export (assumes export is attenuated).
15. Other

SEDIMENT/ShORELINE STABILIZATION — This function considers the effectiveness of a wetland to stabilize streambanks and shorelines against erosion.



CONSIDERATIONS/QUALIFIERS

1. Indications of erosion or siltation are present.
2. Topographical gradient is present in wetland.
3. Potential sediment sources are present up-slope.
4. Potential sediment sources are present upstream.
5. No distinct shoreline or bank is evident between the waterbody and the wetland or upland.
6. A distinct step between the open waterbody or stream and the adjacent land exists (i.e., sharp bank) with dense roots throughout.
7. Wide wetland (>10') borders watercourse, lake, or pond.
8. High flow velocities in the wetland.
9. The watershed is of sufficient size to produce channelized flow.
10. Open water fetch is present.
11. Boating activity is present.
12. Dense vegetation is bordering watercourse, lake, or pond.
13. High percentage of energy-absorbing emergents and/or shrubs border a watercourse, lake, or pond.
14. Vegetation is comprised of large trees and shrubs that withstand major flood events or erosive incidents and stabilize the shoreline on a large scale (feet).
15. Vegetation is comprised of a dense resilient herbaceous layer that stabilizes sediments and the shoreline on a small scale (inches) during minor flood events or potentially erosive events.
16. Other



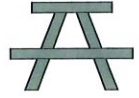
WILDLIFE HABITAT — This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and/or migrating species must be considered. Species lists of observed and potential animals should be included in the wetland assessment report.¹

CONSIDERATIONS/QUALIFIERS

1. Wetland is not degraded by human activity.
2. Water quality of the watercourse, pond, or lake associated with this wetland meets or exceeds Class A or B standards.
3. Wetland is not fragmented by development.
4. Upland surrounding this wetland is undeveloped.
5. More than 40% of this wetland edge is bordered by upland wildlife habitat (e.g., brushland, woodland, active farmland, or idle land) at least 500 feet in width.
6. Wetland is contiguous with other wetland systems connected by a watercourse or lake.
7. Wildlife overland access to other wetlands is present.
8. Wildlife food sources are within this wetland or are nearby.
9. Wetland exhibits a high degree of interspersion of vegetation classes and/or open water.
10. Two or more islands or inclusions of upland within the wetland are present.
11. Dominant wetland class includes deep or shallow marsh or wooded swamp.
12. More than three acres of shallow permanent open water (less than 6.6 feet deep), including streams in or adjacent to wetland, are present.
13. Density of the wetland vegetation is high.
14. Wetland exhibits a high degree of plant species diversity.
15. Wetland exhibits a high degree of diversity in plant community structure (e.g., tree/shrub/vine/grasses/mosses)
16. Plant/animal indicator species are present. (List species for project)
17. Animal signs observed (tracks, scats, nesting areas, etc.)
18. Seasonal uses vary for wildlife and wetland appears to support varied population diversity/abundance during different seasons.
19. Wetland contains or has potential to contain a high population of insects.
20. Wetland contains or has potential to contain large amphibian populations.
21. Wetland has a high avian utilization or its potential.
22. Indications of less disturbance-tolerant species are present.
23. Signs of wildlife habitat enhancement are present (birdhouses, nesting boxes, food sources, etc.).
24. Other

¹In March 1995, a rapid wildlife habitat assessment method was completed by a University of Massachusetts research team with funding and oversight provided by the New England Transportation Consortium. The method is called WETHings (wetland habitat indicators for non-game species). It produces a list of potential wetland-dependent mammal, reptile, and amphibian species that may be present in the wetland. The output is based on observable habitat characteristics documented on the field data form. This method may be used to generate the wildlife species list recommended as backup information to the wetland evaluation form and to augment the considerations. Use of this method should first be coordinated with the Corps project manager. A computer program is also available to expedite this process.

RECREATION (Consumptive and Non-Consumptive) — This value considers the suitability of the wetland and associated watercourses to provide recreational opportunities such as hiking, canoeing, boating, fishing, hunting, and other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals, or other resources that are intrinsic to the wetland. Non-consumptive opportunities do not consume or diminish these resources of the wetland.



CONSIDERATIONS/QUALIFIERS

1. Wetland is part of a recreation area, park, forest, or refuge.
2. Fishing is available within or from the wetland.
3. Hunting is permitted in the wetland.
4. Hiking occurs or has potential to occur within the wetland.
5. Wetland is a valuable wildlife habitat.
6. The watercourse, pond, or lake associated with the wetland is unpolluted.
7. High visual/aesthetic quality of this potential recreation site.
8. Access to water is available at this potential recreation site for boating, canoeing, or fishing.
9. The watercourse associated with this wetland is wide and deep enough to accommodate canoeing and/or non-powered boating.
10. Off-road public parking available at the potential recreation site.
11. Accessibility and travel ease is present at this site.
12. The wetland is within a short drive or safe walk from highly populated public and private areas.
13. Other

EDUCATIONAL/SCIENTIFIC VALUE — This value considers the suitability of the wetland as a site for an “outdoor classroom” or as a location for scientific study or research.



CONSIDERATIONS/QUALIFIERS

1. Wetland contains or is known to contain threatened, rare, or endangered species.
2. Little or no disturbance is occurring in this wetland.
3. Potential educational site contains a diversity of wetland classes which are accessible or potentially accessible.
4. Potential educational site is undisturbed and natural.
5. Wetland is considered to be a valuable wildlife habitat.
6. Wetland is located within a nature preserve or wildlife management area.
7. Signs of wildlife habitat enhancement present (bird houses, nesting boxes, food sources, etc.).
8. Off-road parking at potential educational site suitable for school bus access in or near wetland.
9. Potential educational site is within safe walking distance or a short drive to schools.
10. Potential educational site is within safe walking distance to other plant communities.
11. Direct access to perennial stream at potential educational site is available.
12. Direct access to pond or lake at potential educational site is available.
13. No known safety hazards exist within the potential educational site.
14. Public access to the potential educational site is controlled.
15. Handicap accessibility is available.
16. Site is currently used for educational or scientific purposes.
17. Other

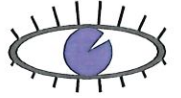


UNIQUENESS/HERITAGE — This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. These functions are clearly valuable wetland attributes relative to aspects of public health, recreation, and habitat diversity.

CONSIDERATIONS/QUALIFIERS

1. Upland surrounding wetland is primarily urban.
2. Upland surrounding wetland is developing rapidly.
3. More than 3 acres of shallow permanent open water (less than 6.6 feet deep), including streams, occur in wetlands.
4. Three or more wetland classes are present.
5. Deep and/or shallow marsh or wooded swamp dominate.
6. High degree of interspersion of vegetation and/or open water occur in this wetland.
7. Well-vegetated stream corridor (15 feet on each side of the stream) occurs in this wetland.
8. Potential educational site is within a short drive or a safe walk from schools.
9. Off-road parking at potential educational site is suitable for school buses.
10. No known safety hazards exist within this potential educational site.
11. Direct access to perennial stream or lake exists at potential educational site.
12. Two or more wetland classes are visible from primary viewing locations.
13. Low-growing wetlands (marshes, scrub-shrub, bogs, open water) are visible from primary viewing locations.
14. Half an acre of open water or 200 feet of stream is visible from the primary viewing locations.
15. Large area of wetland is dominated by flowering plants or plants that turn vibrant colors in different seasons.
16. General appearance of the wetland visible from primary viewing locations is unpolluted and/or undisturbed.
17. Overall view of the wetland is available from the surrounding upland.
18. Quality of the water associated with the wetland is high.
19. Opportunities for wildlife observations are available.
20. Historical buildings are found within the wetland.
21. Presence of pond or pond site and remains of a dam occur within the wetland.
22. Wetland is within 50 yards of the nearest perennial watercourse.
23. Visible stone or earthen foundations, berms, dams, standing structures, or associated features occur within the wetland.
24. Wetland contains critical habitat for a state- or federally-listed threatened or endangered species.
25. Wetland is known to be a study site for scientific research.
26. Wetland is a natural landmark or recognized by the state natural heritage inventory authority as an exemplary natural community.
27. Wetland has local significance because it serves several functional values.
28. Wetland has local significance because it has biological, geological, or other features that are locally rare or unique.
29. Wetland is known to contain an important archaeological site.
30. Wetland is hydrologically connected to a state or federally designated scenic river.
31. Wetland is located in an area experiencing a high wetland loss rate.
32. Other

VISUAL QUALITY/AESTHETICS — This value considers the visual and aesthetic quality or usefulness of the wetland.



CONSIDERATIONS/QUALIFIERS

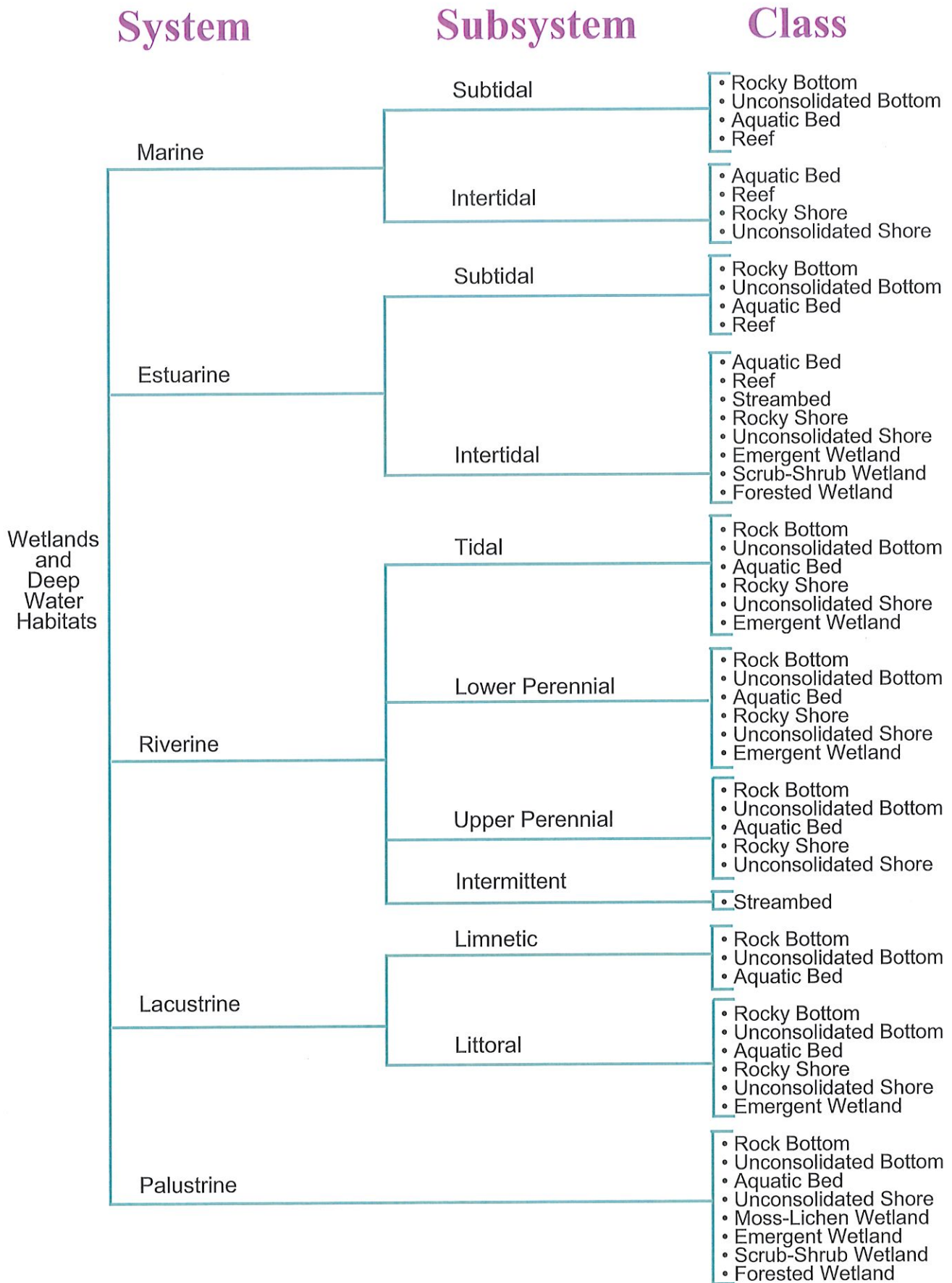
1. Multiple wetland classes are visible from primary viewing locations.
2. Emergent marsh and/or open water are visible from primary viewing locations.
3. A diversity of vegetative species is visible from primary viewing locations.
4. Wetland is dominated by flowering plants or plants that turn vibrant colors in different seasons.
5. Land use surrounding the wetland is undeveloped as seen from primary viewing locations.
6. Visible surrounding land use form contrasts with wetland.
7. Wetland views absent of trash, debris, and signs of disturbance.
8. Wetland is considered to be a valuable wildlife habitat.
9. Wetland is easily accessed.
10. Low noise level at primary viewing locations.
11. Unpleasant odors absent at primary viewing locations.
12. Relatively unobstructed sight line exists through wetland.
13. Other












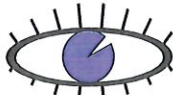
ENDANGERED SPECIES HABITAT — This value considers the suitability of the wetland to support threatened or endangered species.

ES













CONSIDERATIONS/QUALIFIERS

1. Wetland contains or is known to contain threatened or endangered species.
2. Wetland contains critical habitat for a state or federally listed threatened or endangered species.



Wetland I.D.	Total Acres	Impacted Acres	
			
			
			

Symbols Key

-  Groundwater Recharge/
Discharge
-  Floodflow Alteration
(Storage & Desynchronization)
-  Fish and Shellfish Habitat
-  Sediment/Toxicant
Retention
-  Nutrient Removal/
Retention/Transformation
-  Production Export
(Nutrient)
-  Sediment/Shoreline
Stabilization
-  Wildlife Habitat
-  Recreation(Consumptive &
Non-Consumptive)
-  Educational/Scientific
Value
-  Uniqueness/Heritage
-  Visual Quality/Aesthetics
- ES** Endangered Species

Wetland Function-Value Evaluation Form

Wetland I.D. TIOGA RIVER
 Latitude _____ Longitude _____
 Prepared by: C. GUNDA Date 11/28/22
 Wetland Impact: _____
 Type N/A Area _____

Evaluation based on:
 Office _____ Field X
 Corps manual wetland delineation completed? Y X N _____

Total area of wetland 57 Human made? No Is wetland part of a wildlife corridor? YES or a "habitat island"? _____
 Adjacent land use Commercial Distance to nearest roadway or other development ABUTTING
 Dominant wetland systems present RIVERINE Contiguous undeveloped buffer zone present PARTIAL
 Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Bottom
 How many tributaries contribute to the wetland? UNKNOWN Wildlife & vegetation diversity/abundance (see attached list)

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	1, 2, 3, 4, 7, 11, 12	Y	
Floodflow Alteration	Y	1-18	Y	
Fish and Shellfish Habitat	Y	1-17	Y	
Sediment/Toxicant Retention	Y	1-16	Y	
Nutrient Removal	Y	1-14	Y	
Production Export	Y	1-14	Y	
Sediment/Shoreline Stabilization	Y	1-15	N	
Wildlife Habitat	Y	1-23	Y	
Recreation	Y	1-12	Y	
Educational/Scientific Value	Y	1-16	Y	
Uniqueness/Heritage	N	VARIES	N	
Visual Quality/Aesthetics	Y	1-12	Y	
ES Endangered Species Habitat	UNKNOWN	NOT INVESTIGATED	-	UNKNOWN
Other				

Notes: _____

* Refer to backup list of numbered considerations.