EcoSystems
LAND PLANNING

Wetland Functional Assessment

WETLAND AREA 1

G2 HOLDINGS, LLC

Map 215, Lot 7

KEENE, NH

John St. John, CWS

Prepared for: Granite Engineering, LLC

1.0 INTRODUCTION

1.1 ROLES AND RESPONSIBILITIES

Ecosystems Land Planning was commissioned by Granite Engineering to provide this Functions and Values Assessment of Wetland Area 1, to support a request of a waiver to Article 25.3.1.D – Surface Water Resource Setback. Wetland boundaries were originally delineated by Chris Danforth, CWS # 077, in August of 2022, and confirmed on-site by John St. John CWS #222 in July of 2024. This work is based upon information gathered in August of 2024 and in January of 2025.

1.2 TERMS

Wetland functions and values refer to the roles and importance of a wetland, determined by its characteristics and surrounding watershed. Functions are inherent to the wetland ecosystem, while values are based on its significance to society.

2.0 ASSESSMENT PROCEDURES

The "The Highway Methodology Workbook Supplement: Wetland Functions and Values - A Descriptive Approach" by the US Army Corps of Engineers New England District in September 1999, referred to here as "The Highway Method," was used to assess wetland functions and values of Wetland Area 1, on the above referenced parcel. This method uses qualitative characteristics to determine if a wetland is suitable for specific functions and values. A set list of considerations from The Highway Methodology guided the evaluation process.

Functions and values are designated as "Suitable" if they exhibit some of the qualifying characteristics listed in the method. However, a wetland may be deemed "Not Suitable" the if wetland shows only a few or weak qualifiers of the function or value.

Functions and values are designated as "Principal" if they are crucial to a wetland ecosystem or hold special societal value. The decision on principal functions or values was made using professional judgment without numerical weightings, rankings, or averaging to avoid bias. The Highway Method evaluates 13 of the 14 functions and values required to be assessed by New Hampshire State Law RSA 482A:2. The considerations for assessing each potential function or value are detailed in an excerpt from the "The Highway Methodology Workbook Supplement".

For determinations regarding "Ecological Integrity", as required by RSA 482-A:2, XI:, the "Method for Inventorying and Evaluating Freshwater Wetlands In New Hampshire" (NH Method) was used. See www.nhmethod.org. for additional details.

Please note: the NH Method establishes numerical values only. And, does not ascribe terms such as "Suitable" or "Principle" to wetland functions and values.

2.1 GENERAL SITE DESCRIPTION

Soils and Hydrology

Most of the surrounding area consists of upland soils such as Berkshire and Dixfield Fine Sand Loams. These soils are well-drained, with slopes between 0-25%.

Wetland Area 1 has shallow, poorly drained soils which range from 0-15% slopes. Wetland Hydrology is derived from hillslope seepage at the northern end of the valley. Soils are generally saturated due to a restrictive layer near the surface. Surface water and saturation generally decreases from north to south, infiltrating deep underground, causing conditions to revert to upland before reaching the access road to the south.

Plant Community

The primary tree species in the wetland area consist of eastern Hemlock, Red Maple, and Beech. The shrub/sapling layer includes Red Maple, Eastern Hemlock, and Beech. The dominant herbaceous vegetation consists of Sensitive Fern in most areas, with a small patch of Cattail in the northernmost area.

2.2 FUNCTIONS AND VALUES ASSESSMENT

Overall, this wetland got low scores in most of the wetland functions and values criteria. As a small, isolated hill side seepage wetland, that is located at the bottom of a steep ravine, that is partially surrounded by a berm, that is to be expected. The surrounding land use and altered topology further reduces the value of this wetland to wildlife as habitat and restricts human access.

The highest scores for this wetland were associated with Groundwater Recharge and Ecological Integrity. These scores are due primarily due to the lack of encroachment and despoliation within the wetland boundary.

This wetland also exhibits weak characteristics normally attributed for the function of “Sediment Trapping”. However, the existing contours of the land greatly (intentionally) restricts surface water flow into this wetland. And the high permeability of surrounding area all but eliminates the possibility this wetland would receive sediment laden surface water necessary for this function to occur.

Detailed characteristics and analysis of this wetland relative to the 14 functions and values listed in RSA 482:A are detailed in the Functions and Values Assessment Form, below.

Wetland Functional Assessment
Wetland Area 1: G2 Holdings - Keene, NH

SECTION 1 – LOCATION

Adjacent land use: Meadow and gravel pit to the north/east, roadway south, and mixed forest to the west.
Contiguous undeveloped buffer zone present: ☐ Yes ☑ No
Distance to nearest roadway or other development (in feet): 75

SECTION 2 - DELINEATION

Certified wetland scientist who prepared this assessment: John St. John, CWS #221	
Date(s) of site visit(s): 7/25/24 & 1/28/25	Delineation per Env-Wt 406? ☑ yes ☐ no
This evaluation is based on: ☑ Office, and ☑ Field Examination	
Method Used for Functional Assessment: ☑ USACE Highway Methodology. ☑ Other scientifically supported method: Method for Inventorying and Evaluating Freshwater Wetlands In New Hampshire (NH Method)	

SECTION 3 - DESCRIPTION

Wetland ID: 1	Location: (lat, long) 42.96977, -72.22707
Wetland area: 0.35 acres	Dominant wetland system: Forested (PFO1E)
Tributaries that contribute to the wetland: 0	Cowardin class: PFO1E
Is the wetland a separate hydraulic system? ☑ yes ☐ no If not, where does the wetland lie in the drainage basin?	Is the wetland part of: ☐ a wildlife corridor or ☐ a habitat island? Is this a constructed wetland? ☐ Yes ☑ No
Is the wetland in a 100-year floodplain? ☐ Yes ☑ No	Are vernal pools present? ☐ Yes ☑ No (If yes, complete the Vernal Pool Table)
Proposed wetland impact type: Wetland Buffer	Proposed wetland impact area: 0.0 ac.
Wetland Characteristics: Landform: ☑ Hillslope ☐ Terrace ☐ Other: Local Relief: ☑ Concave ☐ Convex ☐ Other: Slope (%): ☐ 0-3% ☑ 3-8% ☑ 8-15% 3-8% in the upper section, 8 -15% in the lower section Soil drainage class: Poorly Drained Hydric soil indicators: S1, Sandy Mucky Mineral Wetland hydrology indicators: Surface water present? ☑ yes ☐ no Saturation present? ☑ yes ☐ no	Dominant Vegetation: Trees: Hemlock, Red Maple, Beech Saplings: Hemlock, Beech Shrubs: None that are dominant Herbs: Sensitive Fern, with some Cattail in northernmost area, near seep. Wildlife Signs: None, no tracks or scat sighted.

Wetland Functional Assessment
Wetland Area 1: G2 Holdings - Keene, NH

SECTION 4 - WETLANDS FUNCTIONS AND VALUES

	Functions/Values	Suitable?	Rational Reference #s[1]	Principal Value?	NH Method Score[2]
1.	Ecological Integrity	N/A	3, 6, 7, 10	No	5.8
2.	Education Potential	No		No	1.3
3.	Fish and Aquatic Habitat	No	1	No	0.8
4.	Floodflow Storage	No	3,5	No	0.3
5.	Groundwater Recharge	Yes	4, 8, 13,	No	4.2
6.	Noteworthiness	No		No	0
7.	Nutrient Removal	Yes	4,7	No	5.6
8.	Production (Nutrient) Export	No		No	3.9
9.	Scenic Quality	No	6	No	1.0
10.	Sediment Trapping	No	1, 2, 5	No	3.5
11.	Shoreline Anchoring	No		No	0
12.	Uniqueness/Heritage	No		No	1.0
13.	Wetland-Based Recreation	No		No	0
14.	Wetland-Dependent Wildlife	No	7, 8	No	3.2

1. *Reference numbers for rationale listed in the USACE The Highway Methodology Workbook Supplement are attached in Appendix B.*
2. *See New Hampshire Method Summary of Scores in Appendix C.*

SECTION 5 - VERNAL POOL SUMMARY

Vernal Pool id Number	Date(s) observed	Primary Indicators Present (list)	Secondary Indicators Present (list)	Length of hydroperiod	Important notes
N/A	7/25/24 & 1/28/25	No vernal pool indicator species observed.		Unknown	This wetland too sloped and too dry to support a long duration pool, required for successful amphibian breeding. Also, saplings growing in the lower areas suggest a relatively short hydroperiod.

SECTION 6 - STREAM RESOURCES SUMMARY

This isolated wetland is not associated with a stream.

Date: 1/28/25	**Location:** Wetland Area 1, southern section
Description: Forest canopy: Red Maple and Hemlock, with Sensitive Fern herbaceous layer.	

Date: 1/28/25	**Location:** Wetland Area 1, at elevation 860’
Description: Beech tree saplings in valley bottom indicates minimal saturation, for a wetland.	

Date: 1/28/25	**Location:** Wetland Area 1, at elevation 875’

Description: Snowmelt here is evidence of a longer saturation period here. Leaf little indicates little or no surface water flow in this section.

Date: 1/28/25	**Location:** Wetland Area 1, at elevation 884’

Description: Minimal ponding is evident from the shallow ice crust on the surface. Note: this area was dry in July. Likely not to be wet enough, or deep enough to support amphibian breeding and development.

GRANITE ENGINEERING
civil engineering
land planning
municipal services

REVISIONS

No.	DATE	COMMENTS	BY
0		PROJECT SUBMITTAL	

OWNER:
G2 HOLDINGS, LLC
250 NORTH STREET
JAFFREY, NH 03452

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New Hampshire 03101
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STAMP:

LOCATION:
KEENE TAX MAP 215 LOTS 7 & 8
SULLIVAN TAX MAP 5 LOTS 46 & 46-1
21 ROUTE 9
KEENE & SULLIVAN, NEW HAMPSHIRE
CHESHIRE COUNTY

PROJECT:
GORDON SERVICES KEENE

TITLE:
SURFACE WATER RESOURCES SETBACK PLAN

PROJECT No.	DATE:	SCALE:
23-0201-1	JANUARY 2, 2024	HORIZ. 1"=50'
SHEET: 1 OF 15		