

CITY OF DOVER

DOVER CONSERVATION COMMISSION – AGENDA

Meeting Type: Regular Meeting
Meeting Location: City Council Conference Room - 288 Central Avenue Dover NH
Meeting Date: Monday, March 14, 2022
Meeting Time: 5:30 pm

1. CALL TO ORDER AND ROLL CALL
2. CITIZENS' FORUM
3. APPROVAL OF THE PRIOR MEETING MINUTES – February 14, 2022
4. OLD BUSINESS
5. NEW BUSINESS
 - A. City of Dover Conditional Use Permit for Quantum Real Estate Group, LLC. (Agent: Trittech Engineering Corporation), Assessor's Map H, Lots 29 A-3 & 29 A-4, zoned CM, located on Littleworth Road. Proposal is to install a municipal water main creating 785 square feet of temporary wetlands impact and 2,665 square feet of buffer impact.
 - B. Discuss Mitigation Priority List
6. REPORT FROM THE CHAIR
 - A. Review of Correspondence Received From NH Department of Environmental Services
7. OTHER BUSINESS
 - A. Update From Committee on Amendments to Wetland Protection District Ordinance
 - B. Dover Climate Resources Forum
8. ADJOURNMENT



CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

Meeting Type: Regular Meeting
Meeting Location: City Council Conference Room - 288 Central Avenue Dover NH
Meeting Date: Monday, February 14, 2022
Meeting Time: 5:30 pm

MEMBERS PRESENT: Steve Fellows (Vice Chair), Robert Atwood (Secretary), Amy Kramer-Perry, Abigail Lyon, Jason Aube, Kristen Murphy (Alternate), Bruce Batchelder (Alternate)

Absent (Excused): Bill Hunt (Chair), Richard Erickson

Absent (Un-excused):

STAFF PRESENT: Jackson Kaspari – Resilience Coordinator

OTHERS PRESENT: Lindsey Williams (City Council), Matt Cardin, Jase Gregiore, Barry Gier

1. CALL TO ORDER AND ROLL CALL

The meeting was convened at 5:30 PM.
Fellows opened the meeting and did a roll call.

2. ANNUAL NOMINATIONS AND ELECTION OF OFFICERS FOR 2022

Bill Hunt – Chair
Steve Fellows – Vice Chair
Robert Atwood – Secretary

K. Murphy moved to approve the nominations for the 2022 Slate of Officers, A. Lyon seconded. Vote: 7 yes

3. CITIZENS' FORUM: None

4. APPROVAL OF THE PRIOR MEETING MINUTES – January 10, 2022

Amy Kramer-Perry moved to approve the January 10, 2022 minutes, B. Batchelder seconded. Vote: 3 yes, 4 abstentions

5. OLD BUSINESS: None

6. NEW BUSINESS

- A.** NHDES Standard Dredge and Fill Wetlands Permit Application for David Lemieux (Agent: Cardin Environmental Consulting and Permitting) Assessor's Map 8, Lot 19, zoned R-20, located at 14 Leighton Drive. Proposal is to install a new dock with a 4'x11' access ramp, a 4' x 150' pier, 40' x 3' aluminum gangway and a 10' x 40' float, in the tidal Little Bay. This project creates 1,120 square feet of permanent impact to tidal wetland and 44 square feet of previously developed permanent impact to the tidal buffer zone.

Matt Cardin from Cardin Environmental and Consulting introduced the project.



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J. Aube: Are float stops going to be used for this project?

M. Cardin: Float stops are not necessary.

J. Aube: What is the total length?

M. Cardin: A bit less than 200 ft.

J. Aube: Is there any eelgrass at this location?

M. Cardin: No, none in this specific area.

A. Kramer-Perry: How does the dock length compare to the surrounding area?

M. Cardin: A bit hard to tell from the aerial photos but is longer than the abutting docks, one of which is in poor condition.

A. Lyon: Can you describe the section where the dock meets the shoreland?

M. Cardin: The area upland is grassy and rocky. There are also old timbers there which would need to be removed.

A. Kramer-Perry: Will the salt marsh migrate?

M. Cardin: It's likely that it will but it could take a number of years.

K. Murphy: Is there a need to remove some of the vegetation?

M. Cardin: Yes, a small swath.

J. Aube moved to endorse the application, A. Kramer-Perry seconded. Vote: 7 yes

- B.** City of Dover Conditional Use Permit for American Durafilm Co., Inc. (Owner: AD Dover, LLC.) (Agent: Civilworks New England), Assessor's Map D, Lot 11-10, zoned IT, located on Innovation Way and Venture Drive. Proposal is to increase the amount of fill to improve the foundation support, creating an additional 553 square feet of impact to the wetland buffer increasing the previously approved impact of 7,419 square feet to 7,972 square feet.

Jase Gregiore from Civilworks New England introduced the project.

J. Aube: What is the current condition?

J. Gregiore: Currently vegetated.

J. Aube: What would the impact to the project be of not doing this?

J. Gregiore: 2:1 side slope due to the cost of the fill.



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J. Aube: Could the buffer be enhanced elsewhere so that there is no net loss?

J. Gregiore: No opportunity was identified to enhance the buffer onsite.

S. Fellows: Approximately how long and wide is the expanded impact area?

J. Gregiore: The area is between 100 – 150 feet long by 3-4 feet wide.

A. Lyon: Will trees remain in the current vegetated area?

J. Gregiore: Yes, they will.

K. Murphy moved to endorse the application, A. Lyon seconded. Vote: 7 yes.

- C.** City of Dover Conditional Use Permit for Todd Diggins and Krystin Ward (Agent: Jones & Beach Engineers, Inc.), Assessor's Map 8, Lot 32, zoned R-20, located at 3 Wentworth Terrace. Proposal is to construct a 975 square foot addition to include an accessory dwelling unit, creating, 966 square feet of disturbance to the Conservation District.

Barry Gier from Jones and Beach Engineers, Inc. introduced the project.

K. Murphy: Question about note #3 on the plans, should that be there?

B. Gier: Typo and will be corrected.

J. Aube: What is the increase to the impervious surface?

B. Gier: Actually, the impervious surface decreases due to the removal of a portion of the driveway and addition of porous pavers.

A. Lyon: Porous pavers are great but they must be maintained to function properly. There should be a maintenance plan in place.

A. Lyon conditionally moved to endorse the application with the addition of a porous paver maintenance plan before Planning Board review, K. Murphy seconded. Vote: 7 yes.



CITY OF DOVER

DOVER CONSERVATION COMMISSION – MINUTES

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7. REPORT FROM THE CHAIR

A. Review of Correspondence Received From NH Department of Environmental Services

J. Kaspari: NHDES approved a standard dredge and fill permit for 7 Cullen Bay Rd. who was seeking to impact 1,052 square feet within the previously developed upland tidal buffer zone in order to construct a pool.

8. OTHER BUSINESS

A. Update From Committee on Amendments to Wetland Protection District Ordinance

A. Lyon: The Committee work recommends establishing enhanced buffers on wetlands of higher importance. Additionally, greater protection would be added to sites containing vernal pools. The next step is to receive feedback from the Planning Board. Autumn Scott and Kyle Pimental are going to discuss the outcomes with City staff for feedback. The findings will be presented to the Planning Board during one of the March meetings and to the City Council thereafter.

J. Kaspari: Before adjournment, I'd like to bring two quick items to the Commissions attention. I was contacted about opportunities for offsite mitigation projects. I know the Commission discussed this at a prior meeting and concluded that a formal list would be needed. My suggestion is to put this as a formal agenda item for a future meeting.

A. Lyon: I can see if UNH Extension has any resources that could help with this.

J. Kaspari: Environmental Projects Engineer Gretchen Young likely has some pending mitigation projects that could use funding.

The other item is that the Local Advisory Committee for the Cocheco River is looking for two additional representatives from Dover. City Staff has been tasked with providing recommendations to the Appointments Committee. There's a chance you may be asked if you're interested in serving this role. Bringing up tonight as an FYI.

9. ADJOURNMENT

S. Fellows moved to adjourn the meeting at 6:31 PM. A. Lyon seconded. Vote: 7 yes.

TRITECH

ENGINEERING CORPORATION

755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03820

TELEPHONE 603.742.8107
FACSIMILE 603.742.3830

March 7, 2022

Ms. Donna Benton, Planning Director
City of Dover, Planning Department
288 Central Avenue
Dover, New Hampshire 03820

Subject: *Conditional Use Permit Application*
Water Line Extension
Littleworth Road
Tax Map H, Lots 29 A-3 & 29A-4
Job No. 21114 / 21127

Dear Donna,

Enclosed please find our Conditional Use Permit Application and supporting documentation for the above referenced project, specifically:

Enclosed please find the following:

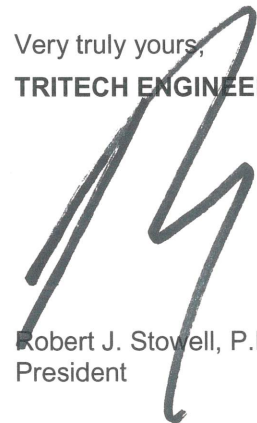
- Conditional Use Permit Application.
- Application Fee.
- Two (2) Copies of the Conditional Use Permit Plan.

This application requests a conditional use permit for the temporary impact of 785 square feet of wetlands and 2665 square of wetlands buffer in order to construct the proposed municipal water main extension within the Littleworth Road right-of-way that will service the Acupetvet & Dupont projects.

Please place our application on the agenda for the March 14, 2022 Conservation Commission meeting.

Please advise should you have any questions.

Very truly yours,
TRITECH ENGINEERING CORP.



Robert J. Stowell, P.E., L.L.S.
President

RJS / rms
Enclosures
\\21135-Final_Submission_Ltr.docx

Narrative for Conditional Use Permit
Wetland & Wetland Buffer Impact
Quantum Real Estate Group, LLC
Acupetvet & Dupont's
Littleworth Road
Tax Map H Lots 29A-3, 29A-4 & 29A-5
Dover, New Hampshire
Job No. 21114

The following has been provided to demonstrate that the project meets the requirements of the City of Dover Zoning Ordinance, Chapter 170, Section 27.1.F, specifically:

- a. Practicable Alternative: There is no practicable alternative that would have a less adverse impact on the area.

These lots were approved by the planning board in 2017 when the property was zoned Residential. Since that time the property has been rezoned Commercial Manufacturing (CM). At the time of the 2017 subdivision approval the water main extension was located to avoid the wetlands and any wetland impact. The property owner desired to develop the property commercially and did not construct the water main while the rezoning took place. The current NHDOT requirements regarding the placement of utilities within a DOT controlled right of way dictate this wetland impact.

- b. Avoidance: The potential impacts have been avoided to the maximum extent practicable. The APPLICANT will demonstrate by plan and example that the proposed construction represents the least impacting alternative.

The current NHDOT requirements regarding the placement of utilities within a DOT controlled right of way dictate this wetland impact.

On July 23, 2021, NHDOT stated:

On past projects, DES has deferred to DOT when it comes to utilities in our ROW. I have never had them deny an alignment that DOT requested.

Our utility accommodation manual (UAM) calls for infrastructure to be placed as close to the ROW as possible, and our office does not see temporary wetland impacts as sufficient justification to locate closer to the road.

On September 27, 2021, NHDOT further stated:

I have not heard from you since my last email, but the City reached out this weekend to ask, from what I can gather, on your behalf, for the attached DOT alignment to be adjusted to move the main out of the wetlands.

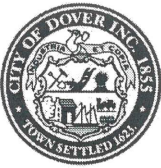
As I stated in my below email on 7/23/21, "[o]n past projects, DES has deferred to DOT when it comes to utilities in our ROW. I have never had them deny an alignment that DOT requested. Our utility accommodation manual (UAM) calls for infrastructure to be placed as close to the ROW as possible, and our office does not see temporary wetland impacts as sufficient justification to locate closer to the road." That said, DOT will not be changing our alignment.

- c. Minimization: Any avoidable impacts have been minimized. No reasonable Alternative to the proposed construction exists which does not impact a wetland, or which has less detrimental impact on a wetland. Design, construction, and maintenance methods will be prepared by a registered engineer to minimize detrimental impacts to the wetlands and will include restoration of the site as nearly as possible to its original grade. That the design of STREETS and BUILDINGS shall reinforce safe environments, but not at the expense of accessibility.

The impact will be temporary, the wetlands & wetlands buffer will be returned to pre-impact conditions, therefore minimizing any impact from the construction.

- d. Mitigation: If the APPLICANT is required by State rules to prepare a compensatory mitigation plan, the APPLICANT shall provide the Conservation Commission and PLANNING BOARD with one copy of each said plan for their review.

The application does not meet the threshold which requires mitigation by NHDES. There is no State compensatory mitigation plan required or proposed.



City of Dover, New Hampshire CONDITIONAL USE PERMIT APPLICATION

[Revision Date: October 19, 2020]

Office Use Only	Project #: _____	Date Received: _____
	Amount Paid: _____	Time Received: _____

APPLICANT AND OWNER INFORMATION

Name of Applicant: Quantum Real Estate Group, LLC Telephone # (603) - 742 - 8107

Address of Applicant: 755 Central Ave, Dover, NH, 03820

E-Mail Address: rjs@tritecheng.com

Name of Property Owner (if different from applicant): _____ Telephone # _____

Address of Property Owner: _____

PROPERTY INFORMATION

Assessor's Map # H Lot(s) # 29 A-3 & 29 A-4

Address of Property: Littleworth Road

Zoning District(s) CM Overlay District(s) Wetland Protection

Existing Use of Property: _____

CONDITIONAL USE PERMIT INFORMATION

Type of Conditional Use Permit (Check All That Apply):

- | | | |
|---|---|--|
| ☐ Conservation District | ☐ RCM Use Overlay District | ☐ Gateway District |
| ☐ Groundwater Protection | ☐ Off-Street Parking and Loading | ☐ Alternative Treatment Center |
| ☒ Wetland Protection District | ☐ Central Business District | ☐ Heritage Residential District |

Describe Proposed Use or Activity That Requires Conditional Use Permit and Describe Any Impacts:

The applicant proposes to install a municipal water main within the Littleworth Road right of way. This construction requires a temporary wetlands impact of 785 sq.ft. and buffer impact of 2,665 sq.ft.

List Any Associated State or Federal Permits That Have Been or Will Be Applied For and Indicate Their Status: _____

NHDES Wetlands Impact Permit

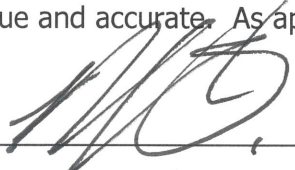
Name of Professional That Prepared Plans: Robert J. Stowell, Trittech Engineering Corporation

Address 755 Central Ave, Dover NH, 03820 Telephone #: (603) - 742 - 8107

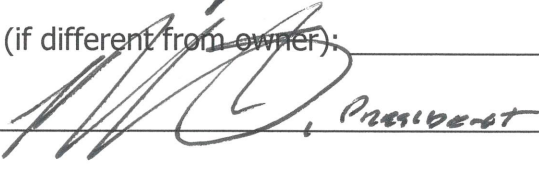
Professional License #: 9903 E-mail address: rjs@tritecheng.com

SIGNATURES

I/We hereby submit this application to the City of Dover Planning Board and attest that to the best of my knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As applicant or as agent, I attest that I am duly authorized to act in this capacity.

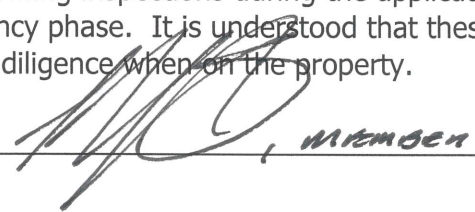
Signature of Property Owner:  MEMBER Date: 03/07/2022

Signature of Applicant (if different from owner): _____ Date: _____

Signature of Agent:  PRESIDENT Date: 03/07/2022

AUTHORIZATION TO ENTER SUBJECT PROPERTY

I, and my successors, hereby authorize members of the Dover Planning Board, Planning Department and other pertinent City Departments and boards to enter my property for the purpose of evaluating this application, including performing inspections during the application phase, post-approval phase, construction phase and occupancy phase. It is understood that these individuals must use all reasonable care, courtesy, and diligence when on the property.

Signature of Property Owner:  MEMBER Date: 03/07/2022

**CITY OF DOVER CONDITIONAL USE
LIST OF ABUTTERS**

Pursuant to RSA 676:4, the State Law of New Hampshire, the City of Dover is required to notify the applicant, abutters (including holders of conservation easements), and any professional whose seal is on the plan, of the public hearing by certified mail, return receipt requested. Staff will provide the abutter information, while the applicant must provide accurate contact information for the owner, applicant and professional agents representing the project.

Owner:

TAX MAP	LOT #	PROPERTY OWNER	<u>MAILING ADDRESS</u>

Applicant (if different from owner):

APPLICANT NAME	APPLICANT COMPANY	<u>MAILING ADDRESS</u>
Robert J. Stowell	Quantum Real Estate Group, LLC	755 Central Ave, Dover, NH, 03820

Surveyor and/or Engineer/Professional Agent:

NAME	COMPANY	<u>MAILING ADDRESS</u>
Robert J. Stowell	Tritech Engineering Corporation	755 Central Ave, Dover, NH, 03820
Damon Burt	Fraggle Rock Environmental	38 Garland Road, Strafford, NH 03884

Conservation Easement Holder:

TAX MAP	LOT #	NAME OF EASEMENT HOLDER	<u>MAILING ADDRESS</u>

PLANNING BOARD FEE SCHEDULE/INVOICE

(Revised July 1, 2021)

Below are the fees associated with plan review and are subject to a nonrefundable application fee to cover administrative expenses. Please complete the information below and provide payment with your application submittal. **Plan Review Fees shall be paid prior to technical review committee (TRC) being scheduled.** For plans not requiring TRC review, **fees are due 21 days prior** to the Planning Board meeting. Staff will coordinate abutter/notice fees, which will be invoiced and must be paid 28 hours before the Planning Board meeting for an application to be heard. Fees shall be paid by cash or check made payable to "City of Dover".

A. Plan Review Fees

1. Application fee for the following (SELECT ALL THAT APPLY):

- ☐ SUBDIVISION Application fee \$200.00 + \$150.00 x # _____ new lots created = \$ _____
- ☐ LOT LINE ADJUSTMENT Application fee \$200.00 + \$100.00 X # _____ of lots involved = \$ _____
- ☐ TRANSFER OF DEVELOPMENT RIGHTS Application fee \$200.00 = \$ _____
- ☐ SITE REVIEW – RESIDENTIAL Application fee \$200.00+ \$100.00 x # _____ per dwelling unit = \$ _____
- ☐ SITE REVIEW – NON-RESIDENTIAL Application fee \$200.00 + (not to exceed \$10,000)
 - ☐ New construction \$.15 sq. ft. x # _____ sq. ft. = \$ _____
 - ☐ Additions (new floor space) \$.10 per sq. ft. x # _____ sq. ft. = \$ _____
- ☐ MOTEL/HOTEL \$35.00 x # _____ per lodging unit = \$ _____
- ☐ CHANGE OF USE Application fee \$200.00 + (not to exceed \$5,000)
 - ☐ Existing floor spaces \$.10 per sq. ft. x # _____ sq. ft. = \$ _____
- ☒ CONDITIONAL USE PERMIT Application fee \$200.00 x # 1 per Application = \$ 200.00
- ☐ GRAVEL PIT/ EXCAVATIONS
 - ☐ Application fee \$50.00 = \$ _____
 - ☐ Permit fee \$75.00 = \$ _____
- ☐ EXTENSIONS/AMENDMENTS/WAIVERS FOR AN APPROVED PLAN Application fee \$200.00 = \$ _____
- ☐ REQUEST FOR REZONING Application fee \$200.00 = \$ _____
- ☐ DRIVEWAY WAIVER Application fee \$200.00 = \$ _____

2. TOTAL IMPERVIOUS PAVED AREA (for new development, roadways or additions to existing parking lots, (not to exceed \$10,000)) Application fee of \$200.00 is N/A if it is part of a Site Review or Subdivision Plan. \$200.00 + \$.07 per sq. ft. x # _____ sq. ft. = \$ _____

SUBTOTAL PLAN REVIEW FEE (A) = \$ 200.00

AND

B. Abutter Notification/Mailing Labels - this office will create and print the abutter list and provide labels in triplicate for each abutter. The applicant/owner will review the list for accuracy and provide to us the engineer, architect, licensed land surveyor (LLS), licensed landscape architect (LLA) and/or soil scientist whose professional seal appears on the plan with names and addresses for notices.

- ☐ Applicant & Owner, engineer, architect, LLS, LLA and/or soil scientist
 - ☐ Certified letters fee # _____ of x \$8.00 = \$ _____
- ☐ Certified letters fee: # of abutters _____ X \$8.00 = \$ _____
- ☐ First Class Mail fee (for individual owner of units within a condominium or other collective form of ownership): # of abutters _____ X \$1.00 = \$ _____
- ☐ Creating/Printing Abutter Labels in triplicate per sheet _____ x \$10.00 = \$ _____

C. Foster's newspaper public notice fee \$100.00 x # _____ applications = \$ _____

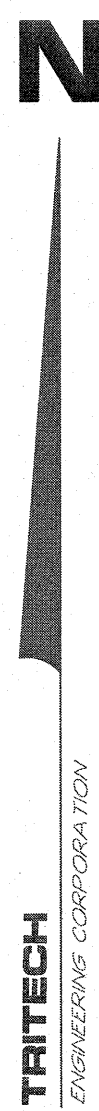
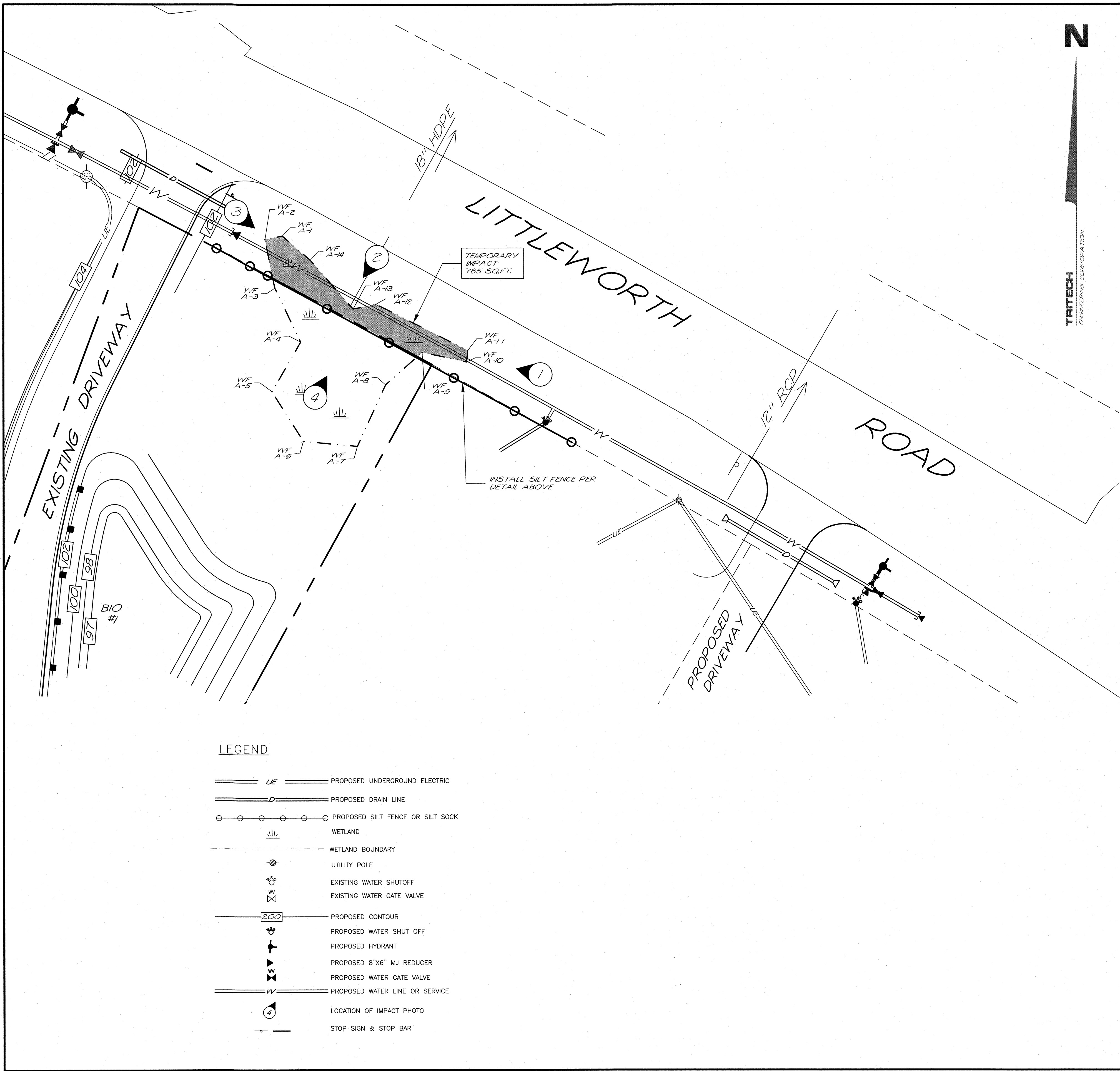
SUBTOTAL NOTICE FEE (B & C) = \$ _____

TOTAL INVOICE AMOUNT (A, B & C) = \$ _____

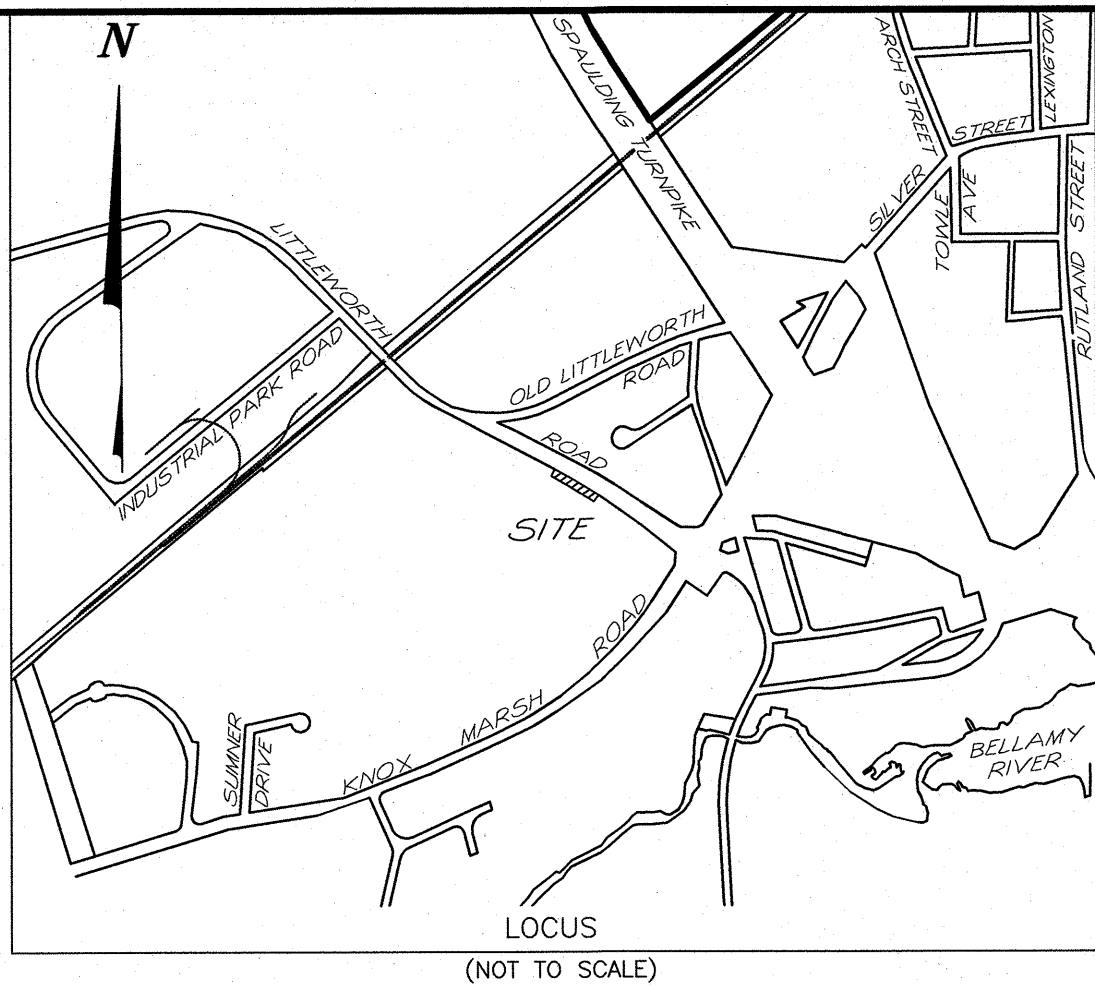
PLAN REVIEW FEE COLLECTED/PAID = \$ _____

BALANCE DUE = \$ _____

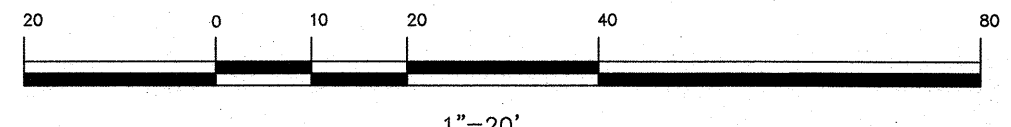
The balance due must be paid 28 hours prior to the Planning Board Meeting, to be heard.



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ENGINEERING CORPORATION



- NOTES**
- 1.) INTENT: TO SHOW THE PROPOSED MUNICIPAL WATER MAIN CONSTRUCTION WITHIN THE LITTLEWORTH ROAD RIGHT OF WAY AND THE RESULTING PROPOSED IMPACTS TO THE WETLAND BUFFER (2,665 SQ.FT) AND THE TEMPORARY IMPACT IN THE CONSERVATION DISTRICT (785 SQ.FT.).
 - 2.) APPLICANT: QUANTUM REAL ESTATE GROUP, LLC.
755 CENTRAL AVENUE
DOVER, N.H.
 - 3.) TOTAL AREA: LITTLEWORTH ROAD RIGHT OF WAY
 - 4.) TAX MAP H LOT 29A-3 & 29A-4
 - 5.) PROJECT DEED REFERENCE: BOOK 4499 PAGE 579
 - 6.) PROJECT PLAN REFERENCE: SUBDIVISION OF LAND
GEORGE F. MITROPOULOS
REVOCABLE LIVING TRUST
LITTLEWORTH ROAD
DOVER, NEW HAMPSHIRE
TRITECH ENGINEERING CORPORATION
APRIL 27, 2017 SCRD 114-23
 - 7.) ZONING: CM (COMMERCIAL-MANUFACTURING)
MIN. LOT SIZE: 20,000 SQ.FT.
MIN. FRONTAGE: 100 FT
MIN. SETBACKS:
FRONT: 35 FT
SIDE: 10 FT
REAR: 10 FT
MAX LOT COVERAGE: 50 %
MAX BLD HEIGHT: 50 FT
IN ADDITION TO CM, THIS PROPERTY FALLS WITHIN A ZONING OVERLAY DISTRICTS:
- WETLANDS PROTECTION DISTRICT
- CONSERVATION DISTRICT
 - 8.) THE RAW UNADJUSTED CLOSURE OF OUR RANDOM POINT TRAVERSE WAS 1 PART IN 60,000, AND WAS ACCOMPLISHED USING A TOPCON GT 503 TOTAL STATION, DURING THE MONTH OF APRIL, 2017.
 - 9.) DURING THE MONTH OF OCTOBER, 2021 DAMON BURT, STATE OF NEW HAMPSHIRE CERTIFIED WETLAND SCIENTIST #163, CONDUCTED AN ON-SITE WETLANDS DELINEATION OF THE SUBJECT PARCEL. WETLANDS WERE IDENTIFIED BASED ON THE US ARMY CORPS OF ENGINEERS' (US ACE) "THE HIGHWAY METHODOLOGY WORKBOOK" (1993) AND "THE HIGHWAY METHODOLOGY WORKBOOK SUPPLEMENT: WETLAND FUNCTIONS AND VALUES - A DESCRIPTIVE APPROACH" (1999). ON THIS SITE, WETLANDS BASED ON LOCAL CRITERIA SHARE THE SAME BOUNDARIES WITH THOSE BASED ON STATE AND FEDERAL CRITERIA. NO VERY POORLY DRAINED SOILS WERE FOUND.
BUFFER ZONES SHALL COMPLY WITH CITY OF DOVER CODE 170-271.6.1(g) AS APPLICABLE. THESE BUFFERS ARE CURRENTLY MAINTAINED AS LANDSCAPED AREAS, LAWNS AND FIELDS. THESE BUFFERS WILL CONTINUE TO BE MAINTAINED IN THIS MANNER.
 - 10.) SUBJECT PARCEL IS NOT WITHIN A FEDERALLY DESIGNATED SPECIAL FLOOD HAZARD ZONE (FLOOD HAZARD ZONE A - PANEL 0320E, MAP No. 33017C0320E, DATE: 9-30-2015).
 - 11.) BASIS OF BEARING: DATUM BASED ON NEW HAMPSHIRE STATE PLANE COORDINATES SPC (2800 NH), (NAVD 88).
 - 12.) THE FOLLOWING FEDERAL AND STATE PERMITS HAVE BEEN ISSUED FOR THE SUBJECT PROPERTY: NHDES WETLAND PERMIT IS PENDING.



TRITECH
ENGINEERING CORPORATION

755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03860
TELEPHONE 603 742 8107
FAX 603 742 9630

REVISIONS	DATE	DESCRIPTION

STATE OF NEW HAMPSHIRE - REGISTERED PROFESSIONAL ENGINEER
ROBERT STOWELL
No. 9903
3/8/2022

CONDITION USE PERMIT PLAN
QUANTUM REAL ESTATE GROUP, LLC
LITTLEWORTH ROAD
DOVER, NEW HAMPSHIRE
MARCH 7, 2022
JOB No. 21114
SCALE: 1" = 20'

SHEET No.

CUP-1

**NHDES
WETLANDS BUREAU
WETLAND FUNCTIONAL
ASSESSMENT**

**City of Dover
Littleworth Road
Dover, NH 03820
Map H29, ROW**

NHB21-3468

Prepared For:
City of Dover
288 Central Ave
Dover, NH 03820

Prepared By:
Damon Burt, CWS, CPESC
Fraggle Rock Environmental
38 Garland Road
Strafford, NH 03884



February 8, 2022

WETLAND FUNCTIONAL ASSESSMENT

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Part 1: Project Summary and Findings

- 1.1 Project Name and Location
- 1.2 Wetland Scientist Information
- 1.3 Proposed Project Summary
- 1.4 Wetland Functional Assessment Summary
 - Table 1: Summary of wetlands identified within site limits

Part 2: Detailed Functional Assessment Evaluation

- 2.1 Introduction
- 2.2 Site location and Description
- 2.3 Wetland Functional Assessment
- 2.4 Wetland Impact Assessment

APPENDICES

Appendix A – Site Photos

Appendix B – Site Location Maps and NHB letter

Appendix C – Site Plans

Appendix D – Function and Values Evaluation Forms and vegetation diversity/abundance list

This evaluation was completed using the USACE Highway Methodology, using the following documentation:

USACE The Highway Methodology Workbook: USACOE. 1993. The Highway Methodology Workbook.

US Army Corps of Engineers New England Division. 28 pp. NEDEP-360-1-30.

USACE The Highway Methodology Supplement: USACOE. 1999. The Highway Methodology Workbook Supplement, Wetland Functions and Values. *A Descriptive Approach*. US Army Corps of Engineers New England Division. 39 pp. NEDEP-360-1-30a.

EPA Clean Water Act Section 404

WETLAND FUNCTIONAL ASSESSMENT

PART 1: PROJECT SUMMARY AND FINDINGS

1.1 PROJECT NAME AND LOCATION		
PROJECT NAME: City of Dover Littleworth Road		
APPLICANT: City of Dover		
ADDRESS: Littleworth Road		
TOWN/CITY: Dover	STATE: NH	ZIP CODE: 03820
LATITUDE/LONGITUDE: 43.185079, 70.893949		
TAX MAP/LOT/UNIT: Map H29, ROW		
NHB PROJECT ID #: NHB21-3389		

1.2 WETLAND SCIENTIST INFORMATION		
NAME: Damon Burt, CWS #163		
COMPANY NAME: Fraggie Rock Environmental		
ADDRESS: 38 Garland Road		
TOWN/CITY: Strafford	STATE: NH	ZIP CODE: 03884
PHONE: (603) 969-5574		
EMAIL: damon@fr-environmental.com		

1.3 PROPOSED PROJECT SUMMARY

This Wetland Functional Assessment has been completed by Fraggie Rock Environmental for a section of ROW, and the adjacent parcel, located off of Littleworth Road in the Town of Dover, NH. The project entails a City of Dover watermain extension and hydrant installation for 2 new commercial lots along Littleworth Road with a proposed wetland impact. The project proposes a temporary wetland impact of 785 square feet.

1.4 WETLAND FUNCTIONAL ASSESSMENT SUMMARY

This functional assessment was completed on October 21, 2021 by Fraggie Rock Environmental where one wetland (Wetland A) was identified, delineated, and assessed. Wetland A is a small emergent wetland located along Littleworth Road. The suitable functions and values of Wetland A are flood storage, nutrient trapping/retention, production export, and wetland-dependent wildlife habitat. The project proposes 785 sq. ft. of temporary impact to Wetland A for the installation of watermain extensions and a hydrant.

The following table identifies the wetland within site limits:

Wetland ID	Classification	Location (lat/long and connectivity)	Dominant Vegetation Species	Wetland Functions/Values (Principal functions are bolded)	Proposed Impact
Wetland A	PEM1E: Palustrine, Emergent, Persistent, Seasonally Flooded/Saturated	43.185079 N 70.893949 W Wetland A is located in the north of the site along Littleworth Road	purple loosestrife (<i>Lythrum salicaria</i>), Canada goldenrod (<i>Solidago canadensis</i>), tearthumb (<i>Persicaria sagittata</i>), and poison ivy (<i>Toxicodendron radicans</i>).	Flood Storage Nutrient Trapping/Retention Nutrient Production Export Wetland-dependent Wildlife Habitat Threatened or Endangered Species	785 square feet of temporary wetland impact

The following table summarizes the wetlands identified on site:

Table 1: Summary of wetlands identified within the review area along Littleworth Road, Dover, NH.

WETLAND FUNCTIONAL ASSESSMENT

PART 2: DETAILED FUNCTIONAL ASSESSMENT EVALUATION

2.1 INTRODUCTION

The following evaluation of the sites functions and values was completed using the US Army Corps of Engineers' (US ACE) "*The Highway Methodology Workbook*" (1993) and "*The Highway Methodology Workbook Supplement: Wetland Functions and Values – A Descriptive Approach*" (1999). This descriptive approach evaluates a wetland's characteristics to determine if the wetland is suitable for particular functions and values and determines which functions and values are principal. A list of considerations for qualifying criteria has been outlined in *The Highway Methodology*. The assessment was completed with data from field observations and site investigations, as well as supporting data from the NHDES Wetland Permit Planning Tool (WPPT), US Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey, and the New Hampshire Wildlife Action Plan.

Wetland **functions**, as defined by US ACE, are self-sustaining properties that exist in the absence of society resulting from both living and non-living components of a wetland. These include all necessary processes for a wetland to thrive such as primary production and nutrient cycling. Functions relate to the ecological significance of wetlands and not to the benefits to society. Wetland **values**, as defined by US ACE, are benefits derived from one or more functions or the physical characteristics of a wetland that are of worth or importance to humans. These include flood control and recreation benefits. These values are based on human judgement, based on the opinion of experts, of the worth, merit, quality, or importance of wetland functions. Wetland **principal functions and values** are determined to be an important physical component of a wetland ecosystem (functions only) and/or are considered of special value to society from a local, regional, and/or national perspective.

The following 13 functions and values are considered by the Regulatory Branch for section 404 wetland permits (*Descriptions of each function and value, and the corresponding qualifying criteria, are outlined in USACE The Highway Methodology*):

1. Groundwater recharge/discharge
2. Flood flow alteration (attenuation of floodwaters)
3. Fish and shellfish habitat
4. Sediment/toxicant/pathogen retention
5. Nutrient removal/retention/transformation
6. Nutrient production export
7. Sediment/shoreline stabilization
8. Wildlife habitat
9. Recreation
10. Education/scientific value
11. Uniqueness/heritage
12. Visual quality/aesthetic
13. Threatened or endangered species habitat

WETLAND FUNCTIONAL ASSESSMENT

2.2 SITE LOCATION AND DESCRIPTION

This Wetland Functional Assessment has been prepared by Fraggie Rock Environmental for the subject ROW (City of Dover Map H29) and adjacent parcel (Map H29, Lot A3) located off of Littleworth Road in Dover, NH (See Site Location Maps in Appendix B). The functional assessment was completed on October 21, 2021.

The review area contains 1 wetland (Wetland A), as delineated by Fraggie Rock Environmental (See Site Plan in Appendix C). Wetland A is a small freshwater emergent wetland (PEM1E) that is located along Littleworth Road at the north of the site.

The 2020 NH Wildlife Action Plan identified the review area as mainly supporting landscape with small areas of highest ranked habitat. The site is surrounded by properties containing mainly supporting landscapes and unranked lands. The Wildlife Action Plan identifies the review area land use and land cover as developed or barren. This review area is surrounded by mostly developed impervious or developed barren lands.

The proposed project entails waterline infrastructure installation for the City of Dover water system. This includes the installation of a hydrant and water main lines.

2.3 WETLAND FUNCTIONAL ASSESSMENT

Wetland A:

Description: Wetland A is a small freshwater emergent wetland (PEM1E) located along Littleworth Road. The wetland has connectivity off-site via a culvert under Littleworth Road and via a culvert under an existing driveway on-site to the west.

Dominant vegetation observed includes purple loosestrife (*Lythrum salicaria*), Canada goldenrod (*Solidago canadensis*), tearthumb (*Persicaria sagittata*), and poison ivy (*Toxicodendron radicans*).

A full list of vegetation and wildlife observed in this wetland is attached in Appendix D.

Description of functions and values in Wetland A:

1. Ecological Integrity is not a suitable function as the wetland is relatively small and located directly along Littleworth Road.
2. Education/scientific value is not a suitable value because the wetland has no public access and the wetland is located directly along a roadway which has the potential to be a safety hazard.
3. Fish and shellfish is not a suitable function in this wetland because the wetland is relatively small, not forested, and is not connected to a watercourse.

WETLAND FUNCTIONAL ASSESSMENT

4. Flood flow alteration is a suitable value due to the potential for the wetland to be able to retain floodwater from the nearby impervious developed lands and the proximity of the Bellamy River Unnamed brook and other unmapped waterways.
5. Groundwater recharge is not a suitable function as the wetland is not associated with a perennial watercourse.
6. Threatened or endangered species is a suitable function. The following have been identified by the NHB and IPaC to potentially occur on-site:
 1. New England Cottontail (*Sylvilagus transitionalis*)

The NH Fish and Game describes the New England Cottontail habitat as early successional habitat, shrublands, and shrub wetlands. The wetland on-site is mainly emergent, but includes some cover of shrubs, therefore including the potential to support the cottontail. Additionally, the surrounding habitat included some shrubland and forest which has the potential to support the cottontail.

7. Nutrient removal/retention/transformation is a suitable function as the dominant vegetation in the wetland is emergent. Although, the wetland is small, with limited open water, and is not associated with a watercourse, and therefore nutrient removal/retention is not a principal function of Wetland A.
8. Nutrient production export is a suitable function as there was evidence of wildlife, with high vegetation density and contains flowering plants. Nutrient production export is a principal function of Wetland A.
9. Visual quality/aesthetic is not a suitable value as the site contains no public viewing locations and is along a roadway.
10. Sediment/toxicant/pathogen retention is not suitable function as the site is not associated with a watercourse.
11. Sediment/shoreline stabilization is not a suitable function as the wetland is not a shoreline wetland.
12. Uniqueness/heritage is not a suitable value as the site has no public access.
13. Recreation is not a suitable value as the site has no recreational access.
14. Wildlife habitat is a suitable function as the wetland has habitat for insects and avian species. Due to the small size of the wetland, the proximity to a roadway, and the surrounding developed land use, wildlife habitat is not a principal function of Wetland A.

WETLAND FUNCTIONAL ASSESSMENT

2.4 WETLAND IMPACT ASSESSMENT

The project includes a proposed temporary wetland impact to Wetland A of 785 square feet within the City of Dover ROW. The proposed construction includes the installation of a hydrant, watermain thrust block, and waterline trench for the 2 new commercial lots. All proposed construction will be within the ROW along Littleworth Road.

As the wetland impact is proposed exclusively within the ROW it is anticipated that the project will have limited impact on the New England Cottontail. Additionally, to protect the Cottontail shrubland wetland should be avoided where possible.

Finally, we recommend any erosion control matting, if needed, be made of natural fiber (no plastic) backing to reduce wildlife entanglement.

Appendix A

Site Photos

WETLAND FUNCTIONAL ASSESSMENT



Photo 1 – View looking north within Wetland A towards Littleworth Road. (Photo taken 10/21/21).



Photo 2 – View looking east along Littleworth Road and the Wetland A. (Photo taken 10/21/21).

WETLAND FUNCTIONAL ASSESSMENT



Photo 3 – View looking south into the Wetland A. (Photo taken 10/21/21).



Photo 4 – View looking west along Wetland A and Littleworth Road. (Photo taken 10/21/21).

WETLAND FUNCTIONAL ASSESSMENT



Photo 5 – Culvert under Route 9 with connectivity to Wetland A. (Photo taken 10/21/21).



Photo 6 – Culvert under site driveway with connectivity to Wetland A. (Photo taken 10/21/21).

WETLAND FUNCTIONAL ASSESSMENT



Photo 7 – Typical vegetation seen within Wetland A. (Photo taken 10/21/21).

Appendix B

Site Location Maps

Littleworth Road, Dover - Priority Resource Areas



Legend

Parcel Polygons

- Parcel Polygons
- Attributes for Additional Lines

Parcel Lines

- Flood Plain Wetlands Adjacent
- Prime Wetlands with 100 ft Buffer
- Prime Wetlands

Sand Dunes

- backdune
- foredune
- interdune
- other

Tidal Waters / Tidal Wetlands

- Tidal wetland
- Transitional salt marsh
- Salt marsh
- Mud flat
- Tidal water

World Imagery

- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations

Notes

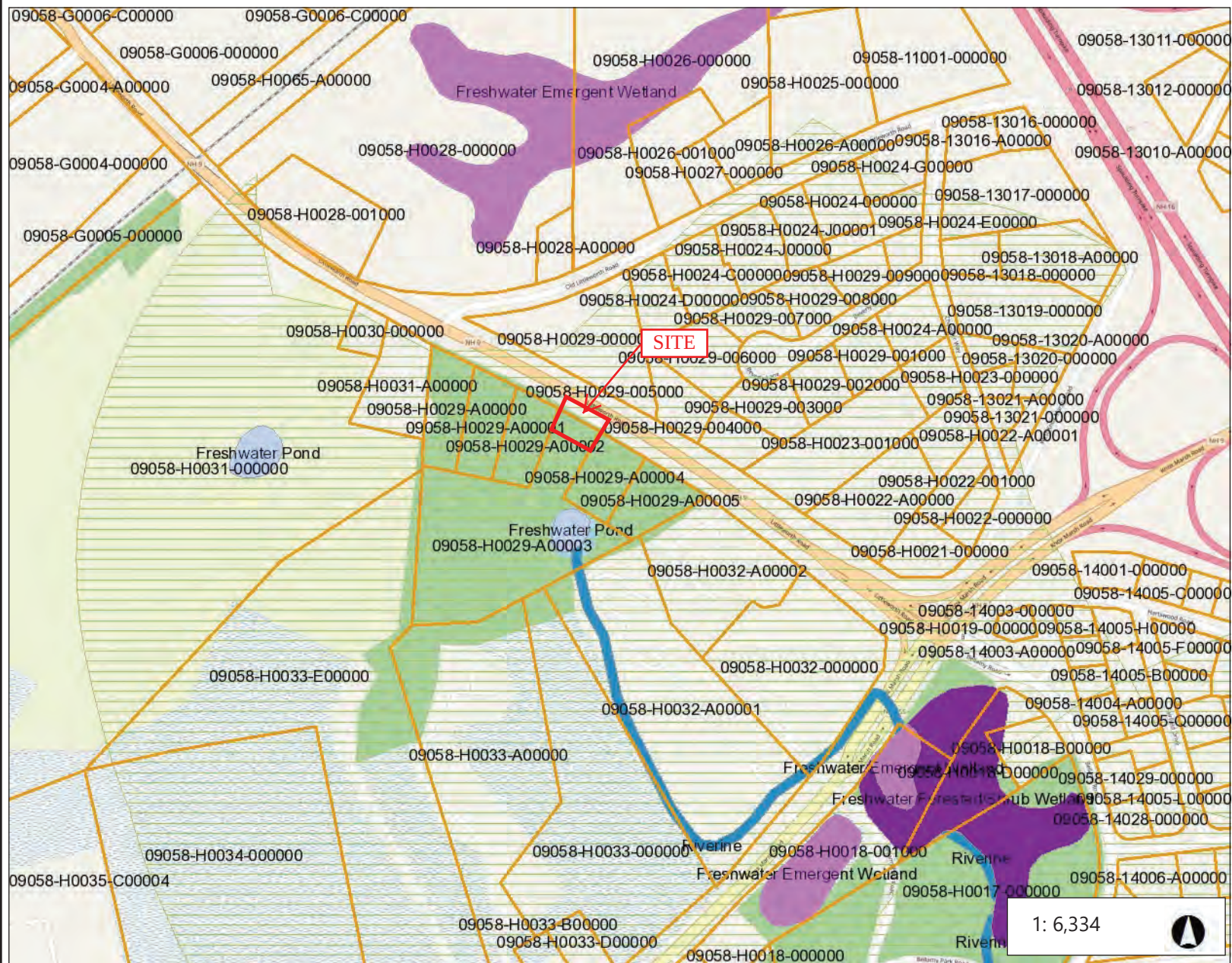
0.2 0 0.10 0.2 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
© Latitude Graphics Group Ltd.

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Littleworth Road, Dover - NW1



1: 6,334



0.2 0 0.10 0.2 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
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This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

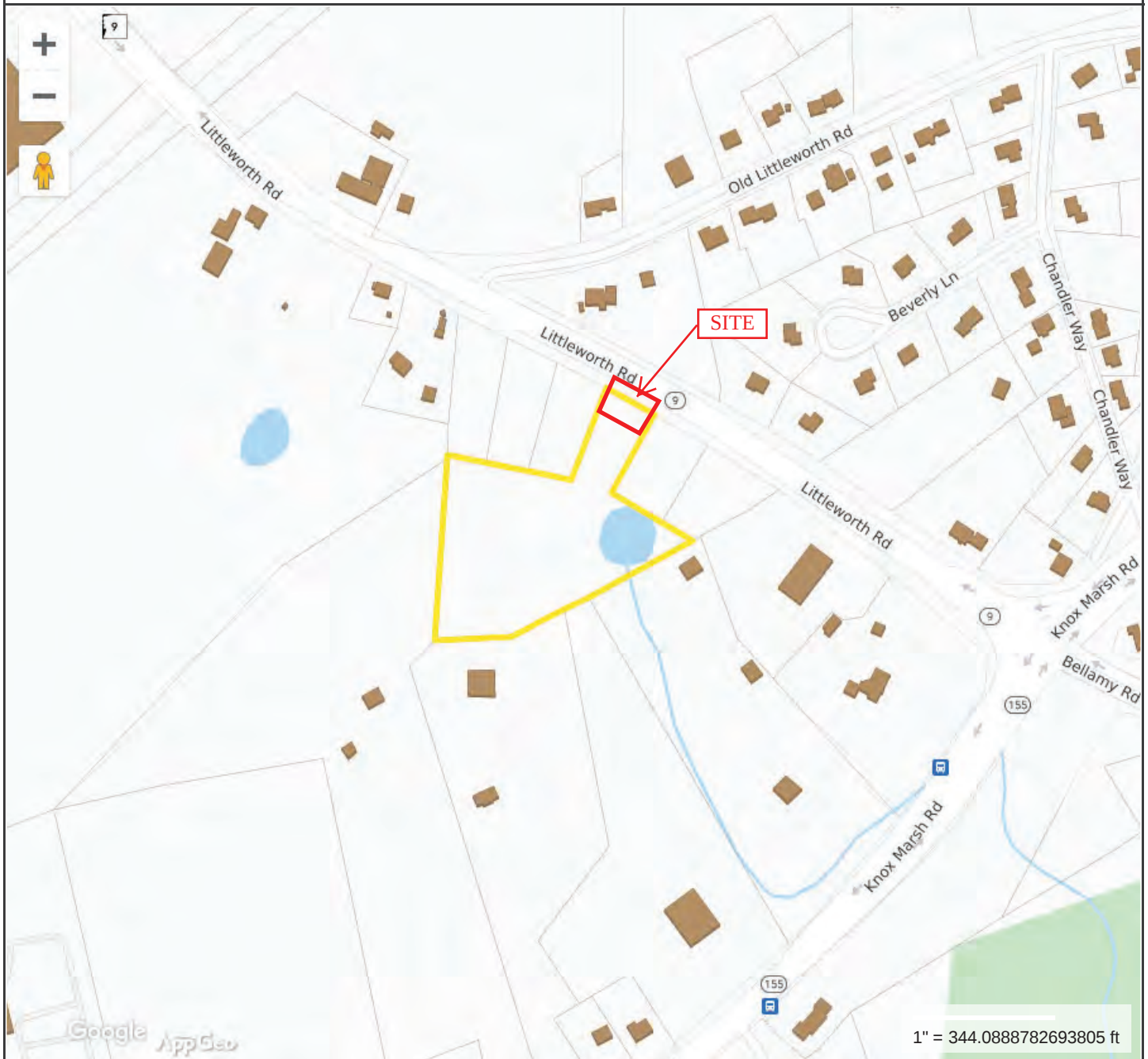
THIS MAP IS NOT TO BE USED FOR NAVIGATION

Legend

-  Outstanding Resource Water
 - Parcel Polygons**
 -  Parcel Polygons
 -  Attributes for Additional Lines
 -  **Parcel Lines**
 - Designated Rivers**
 -  Subject to SWQPA
 -  Not Subject to SWQPA
 - NWI**
 -  Estuarine and Marine Deepwater
 -  Estuarine and Marine Wetland
 -  Freshwater Emergent Wetland
 -  Freshwater Forested/Shrub Wetland
 -  Freshwater Pond
 -  Lake
 -  Other
 -  Riverine
 -  Watersheds with Chloride Impairment
 -  Surface Waters with Impaired
- Quarter Mile Buffer**

Notes

Dover Littleworth Tax Map

**Property Information**

Property ID H0029-A00003
Location 16 LITTLEWORTH RD
Owner LITTLEWORTH LLC
Land Use 390

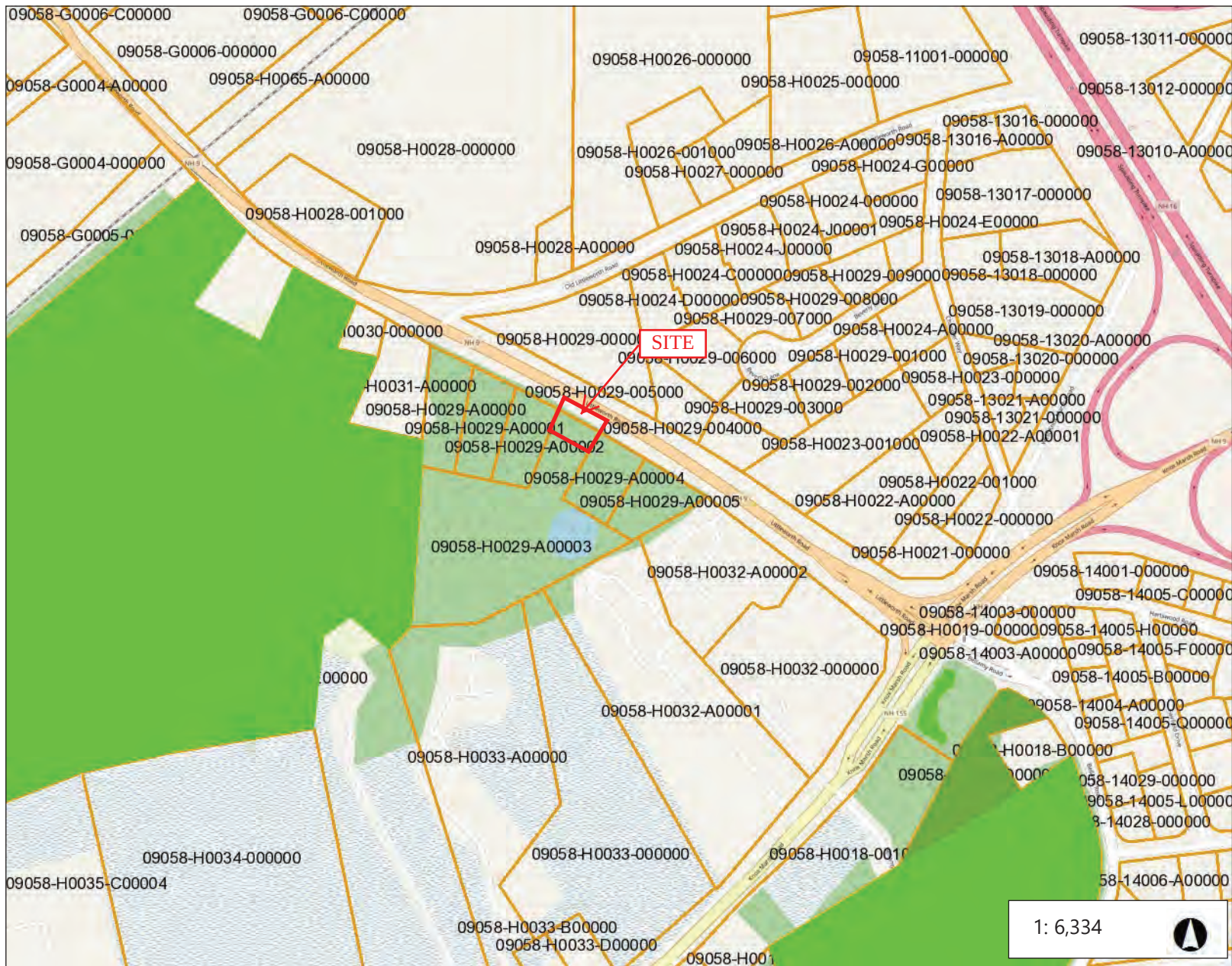
**MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT**

City of Dover, NH makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 5/3/2021
Data updated Daily

Print map scale is approximate.
Critical layout or measurement
activities should not be done using
this resource.

Littleworth Road, Dover - Conservation Lands



Legend

Parcel Polygons

- Parcel Polygons
- Attributes for Additional Lines

Parcel Lines

Conservation and Public Land:

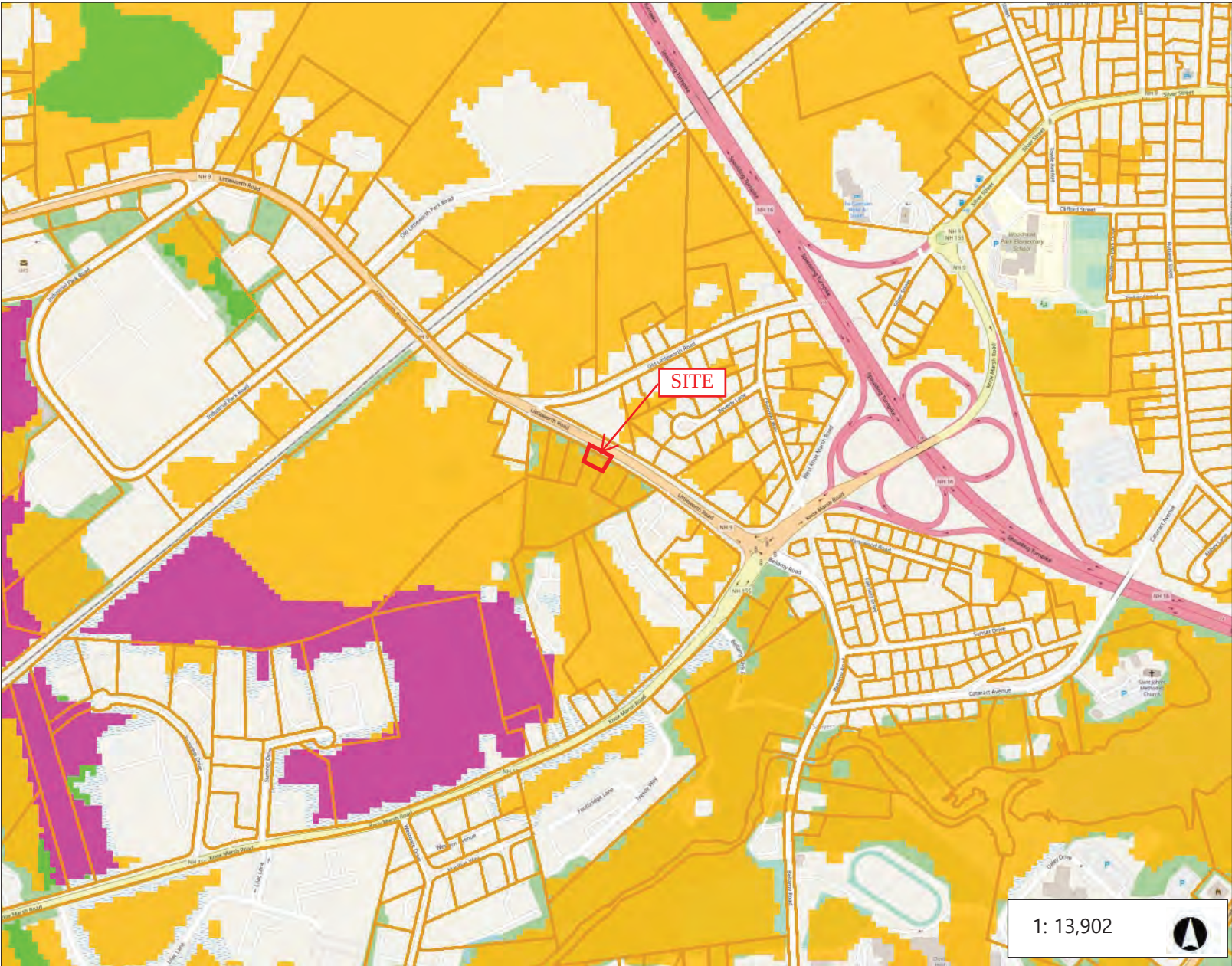
- Permanent conservation land
- Unofficial conservation land
- Unprotected water supply land
- Developed public land
- Unknown

Notes

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Littleworth Road, Dover - NH Wildlife Action Plan Highest Ranked Habitat



Legend

Parcel Polygons

- Parcel Polygons
- Attributes for Additional Lines

Parcel Lines

Highest Ranked Wildlife Habitat

- 0
- 1 Highest Ranked Habitat in NH
- 2 Highest Ranked Habitat in Region
- 3 Supporting Landscape

Notes

Littleworth Road, Dover - NH Wildlife Action Plan Land Use/Land Cover



Legend

- Parcel Polygons**
- Parcel Polygons
 - Attributes for Additional Lines
- Parcel Lines**
- Wildlife Habitat Land Cover**
- Alpine
 - Appalachian oak-pine
 - Cliff and Talus slope
 - Coastal island and Rocky coast
 - Developed Impervious
 - Developed or Barren land
 - Dune
 - Floodplain forest
 - Grassland
 - Hemlock-hardwood-pine
 - High-elevation spruce-fir
 - Lowland spruce-fir
 - Northern hardwood-conifer
 - Northern swamp
 - Open water
 - Peatland
 - Pine barren
 - Rocky ridge
 - Salt marsh
 - Sand/Gravel
 - Temperate swamp

Notes

0.4 0 0.22 0.4 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
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This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

Memo

NH Natural Heritage Bureau NHB DataCheck Results Letter

Please note: portions of this document are confidential.

Maps and NHB record pages are confidential and should be redacted from public documents.

To: Matthew Francoeur
755 Central Ave
Dover, NH 03820

From: NHB Review, NH Natural Heritage Bureau

Date: 11/17/2021 (valid until 11/17/2022)

Re: Review by NH Natural Heritage Bureau

Permits: NHDES - Wetland Standard Dredge & Fill - Minor

NHB ID: NHB21-3468

Town: Dover

Location: Littleworth Road

Description: To extend existing water service for 2 new commercial lots, temporarily impacting 785 sq.ft. of Wetlands

cc: Kim Tuttle

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments NHB: No Comments At This Time

F&G: We will also be reviewing the two new commercial lots that the water service will enable, if they have not been permitted already.

Please send photos of any brushy or shrubby habitat on the property.

Vertebrate species	State ¹	Federal	Notes
New England Cottontail (<i>Sylvilagus transitionalis</i>)	E	--	Contact the NH Fish & Game Dept (see below).

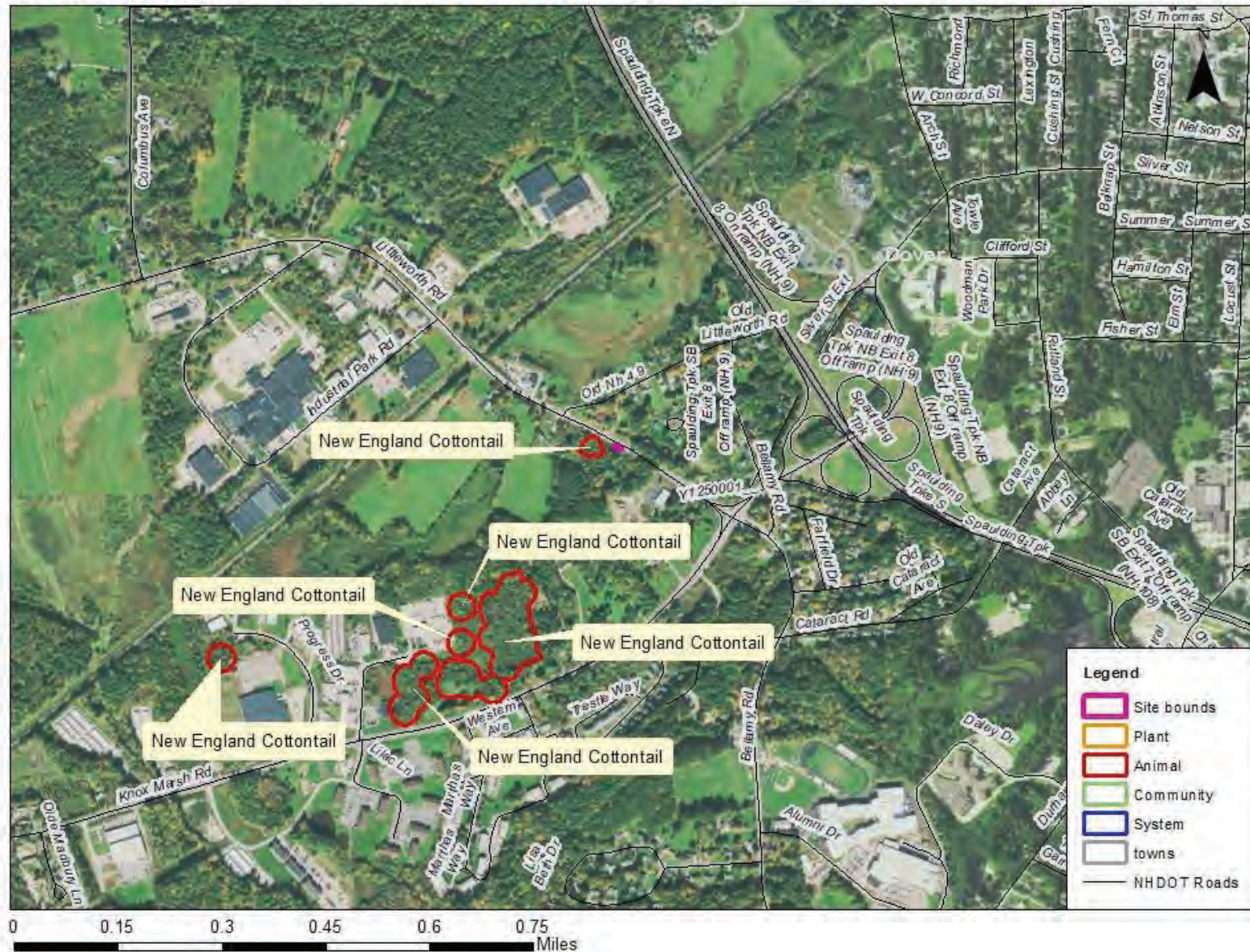
¹Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

CONFIDENTIAL – NH Dept. of Environmental Services review

NHB21-3468



New Hampshire Natural Heritage Bureau - Animal Record

New England Cottontail (*Sylvilagus transitionalis*)**Legal Status**

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Rare or uncommon
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2014: Winter observation at 1 point. 2011: Winter observations at 22 points. 2003: Seen (Obs_id 442). Seen (Obs_id 441).

General Area: 2003: Terrestrial: Scrub / shrubland (Obs_id 442, 441).

General Comments: 2003: Results of J. Litvaitis Regional New England Cottontail Survey - 2003 (Obs_id 442).
2003: Results of J. Litvaitis Regional New England Cottontail Survey - 2003 (Obs_id 441).

Management: --
Comments:

Location

Survey Site Name: Knox Marsh
Managed By:

County: Strafford

Town(s): Dover

Size: 14.2 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2003: Rte. 9, ca. 200 meters from junction with Rte. 155; old field south of road (Obs_id 442). 2003: Traveling NE on Rte. 155, old field patch on left after the Dover bus depot (Obs_id 441).

Dates documented

First reported: 2003-01-01

Last reported: 2014

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.



New England Cottontail

Sylvilagus transitionalis

Disappearing rabbit trick

Why would a rabbit, the epitome of prolific breeding, be considered for protection under the Endangered Species Act? The New England cottontail is in just this predicament. Its population numbers are declining. As recently as 1960, New England cottontails were found east of the Hudson River in New York, across all of Connecticut, Rhode Island and Massachusetts, north to southern Vermont and New Hampshire, and into southern Maine. Today, this rabbit's range has shrunk by more than 75 percent. Its numbers are so greatly diminished that it can no longer be found in Vermont and has been reduced to only five smaller populations throughout its historic range.

Where the bunnies are

The New England cottontail prefers early successional forests, often called thickets, with thick and tangled vegetation. These young forests are generally less than 25 years old. Once large trees grow in a stand, the shrub layer tends to thin, creating habitat that the New England cottontail no longer finds suitable.

Active at dawn and at dusk or night, the New England cottontail feeds on grasses and plant leaves in spring and summer and eats bark and twigs in winter. Home ranges vary from one-half to 8 acres, with adult males having larger home ranges than females. Research has shown that New England cottontails on patches of habitat larger than 12 acres are healthier than those on patches less than 7 acres. Presumably, rabbits on small patches of habitat deplete their food supply sooner and have to eat lower quality food, or may need to search for food in areas where there is more risk of being killed by a predator.



Anne Brown

New England cottontail

Why are their numbers declining?

Biologists believe the reduced extent of thicket habitat is the primary reason for the decline in numbers and range of New England cottontails. Prior to European settlement, New England cottontails were probably found along river valleys where floods and beavers created the disturbances needed to generate its preferred habitat. Forest insect outbreaks, large storms like hurricanes and ice storms, and wild fire also created disturbances in the forest that promoted thicket growth. During colonial times, much of the New England forest was cleared for agriculture and then subsequently abandoned during the early 1900s. This abandoned farmland allowed for a great deal of early successional habitats to develop. Today, these habitats are aging while others have been developed and are no longer suitable for the New England cottontail.

The introduction of exotic invasive species, such as multiflora rose, honeysuckle bush and autumn olive, in the last century has changed the type of habitat available to New England cottontails. These plants form the major component of many patches where cottontails can be found. It may be that stands dominated by non-native species do not provide rabbits with the food resources that native plant species do.

Today white-tailed deer are found in extremely high densities throughout the range of New England cottontails. Deer not only eat many of the same plants but also affect the structure and density of many understory plants that provide thicket habitat for New England cottontails.

Introduced competitor

In the early 1900s until the 1960s, hunting clubs and some eastern states introduced another species of rabbit, the eastern cottontail, into New England. Eastern cottontails appear able to thrive in a greater variety of habitats than New England cottontails through its ability to detect predators sooner. This helps eastern cottontails forage more safely in relatively open cover, while New England cottontails risk predation whenever they leave the security of their dense thicket habitats. The slightly better ability to avoid predators enables eastern cottontails to live in more diverse habitats, such as fields, farms and forest edges, and they are gradually replacing New England cottontails in many habitat patches.

Identity is more than skin deep

It is nearly impossible to distinguish a New England cottontail from an eastern cottontail by looking at them. The minor differences of ear length, body mass, and presence or absence of a black spot between the ears and a black line on the front of each ear are subtle enough to be missed and are not 100 percent accurate. Scientists used to rely on examining the rabbits' skulls for positive identification, but can now use DNA analysis of fecal pellets. Since rabbits drop fecal material all around their territory, the extracted DNA from pellets collected throughout the region can provide a picture of where the New England cottontail is found.

Helping the cottontail

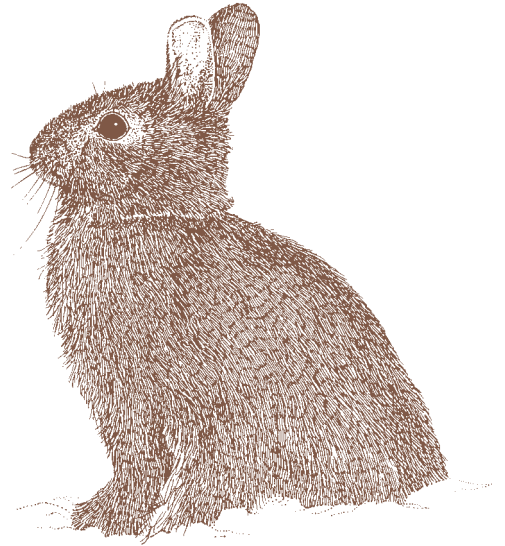
The New England cottontail is the subject of research and habitat management in New York and the New England states. Halting the decline of scrub and brushland habitat is paramount, as is identifying potential habitat free of competing eastern cottontail to which New England cottontails could be restored. The U.S. Fish and Wildlife Service shares the concern for the future of New England's only native cottontail. Working together, states and federal agencies may help improve the chances of survival for the New England cottontail.

**Northeast Region
U.S. Fish and Wildlife Service
300 Westgate Center Drive
Hadley, MA 01035
413/253 8200
<http://northeast.fws.gov>**

**Federal Relay Service
for the deaf and hard-of-hearing
1 800/877 8339**

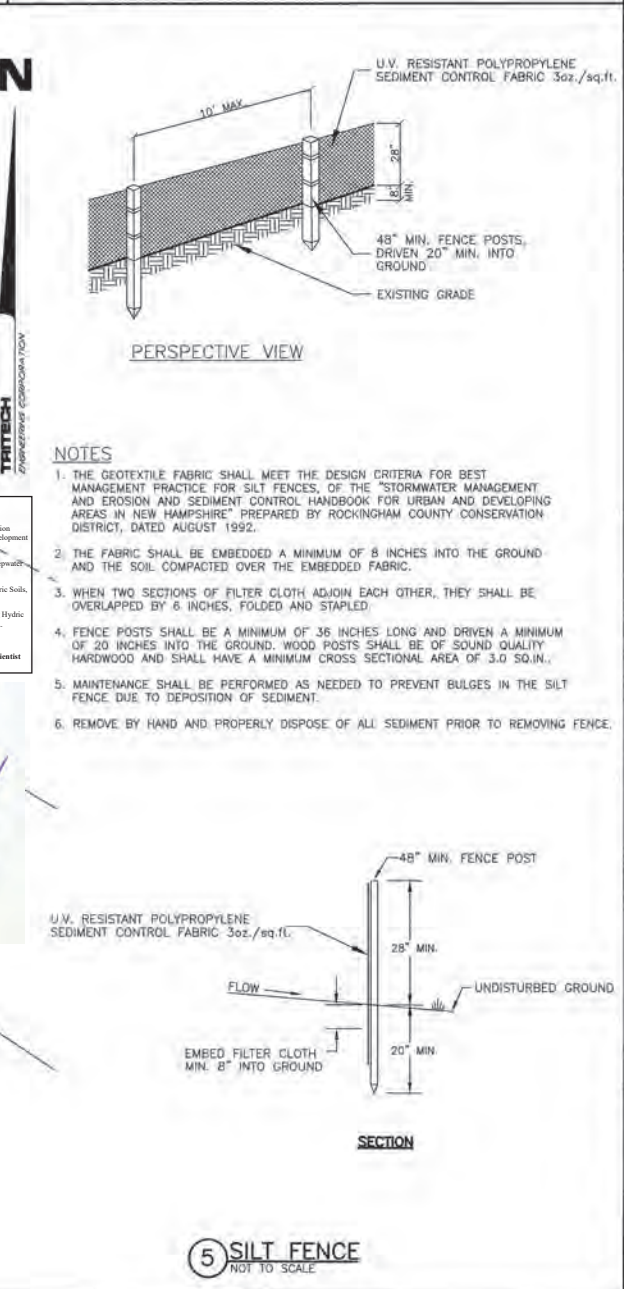
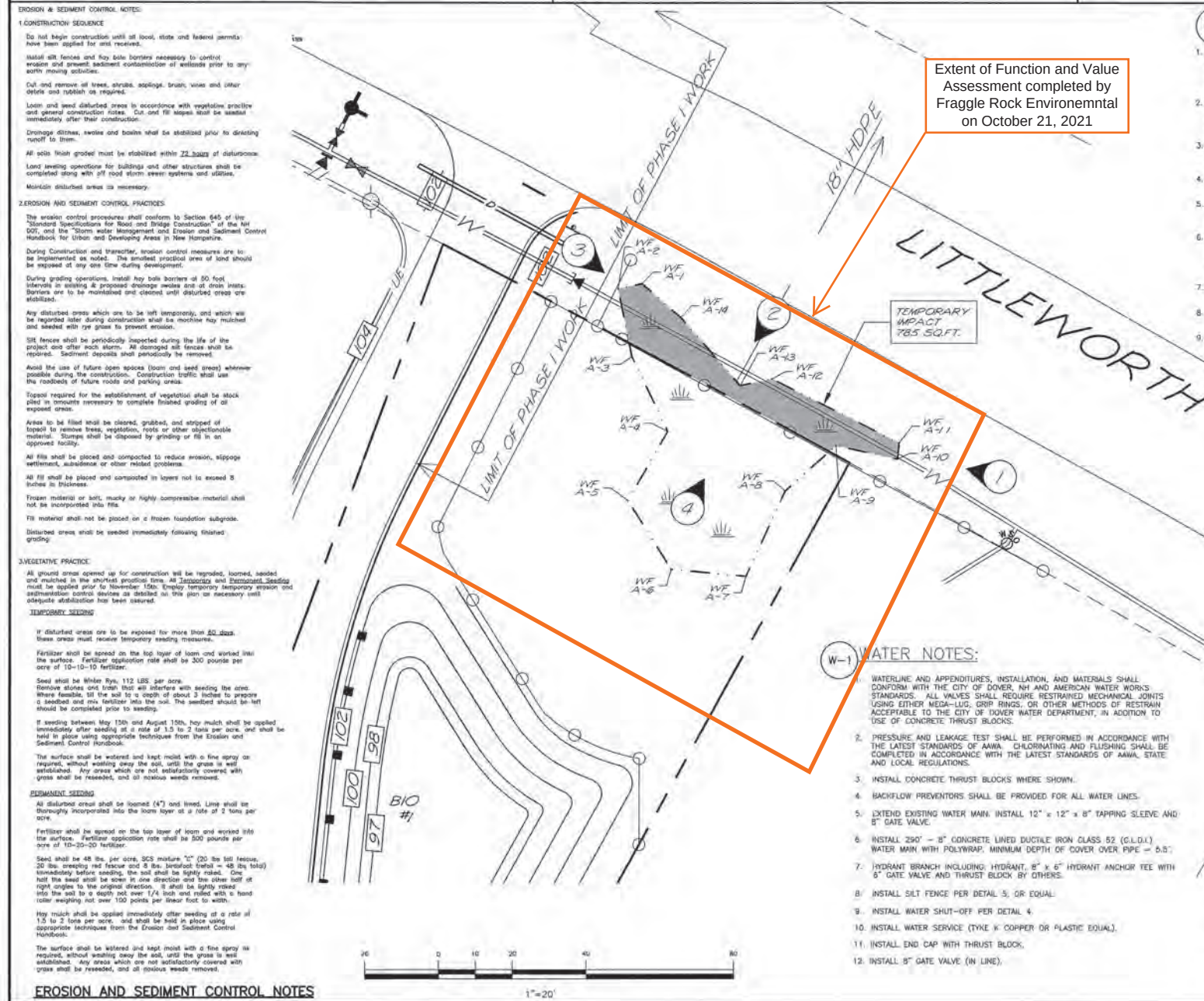
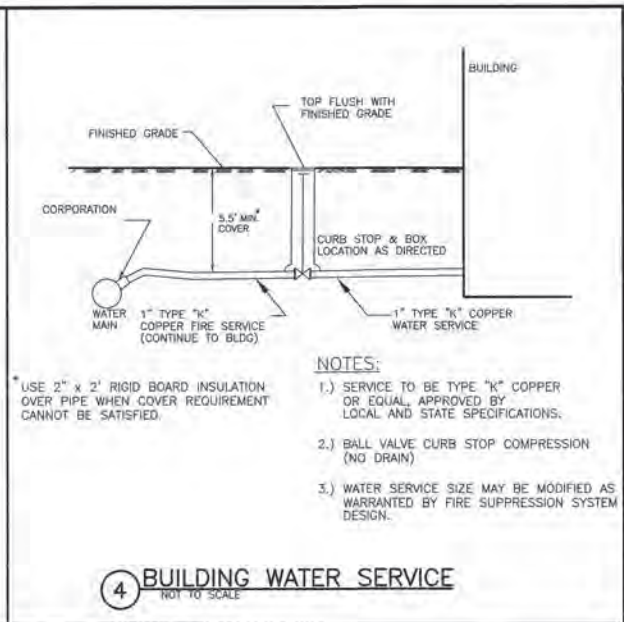
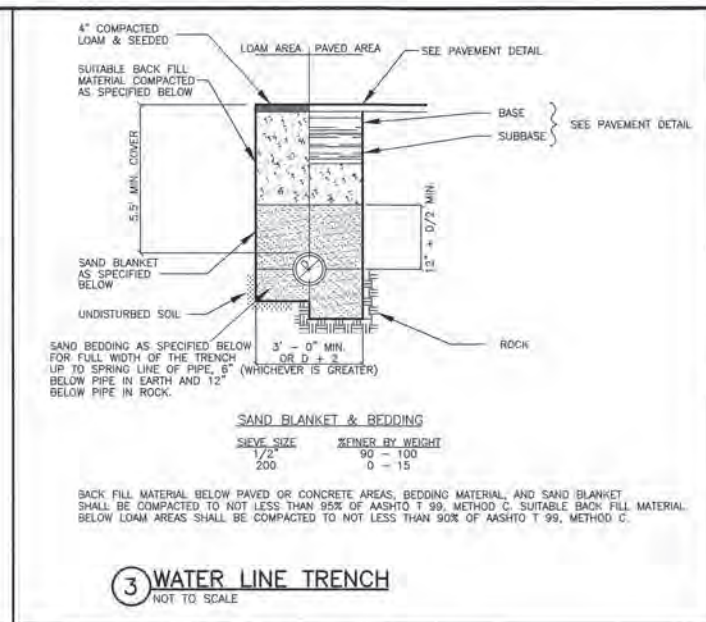
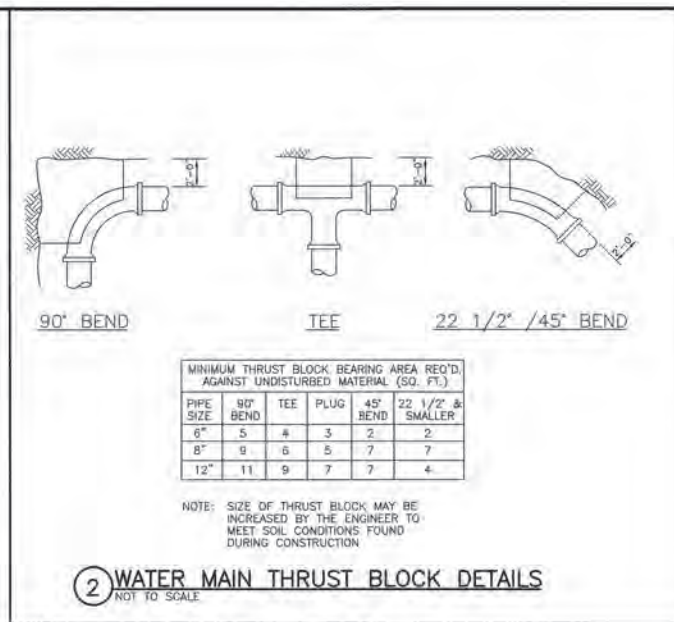
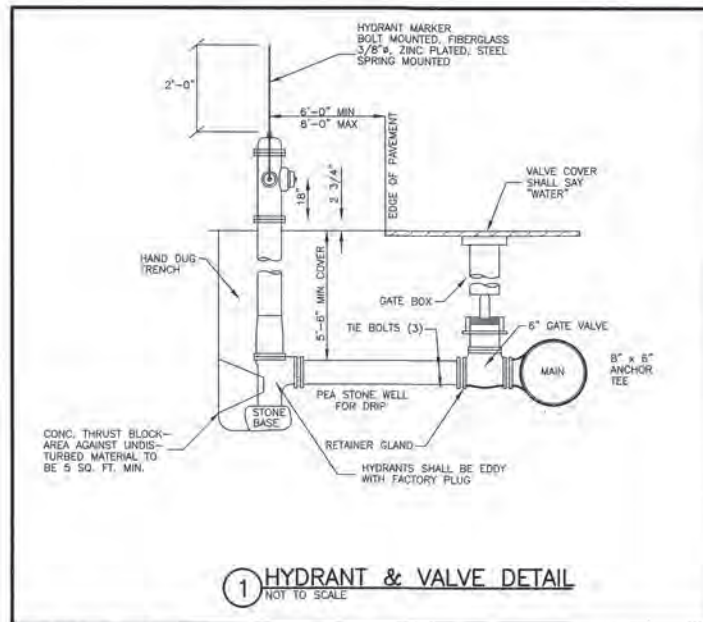
**U.S. Fish & Wildlife Service
1 800/344 WILD
<http://www.fws.gov>**

August 2006



Appendix C

Site Plans



TRITECH
ENGINEERING CORPORATION

755 CENTRAL AVENUE
DOVER, NEW HAMPSHIRE 03801
TELEPHONE 603.742.6107
FAX 603.742.5850

REVISIONS	DATE	DESCRIPTION

WETLANDS PERMIT APPLICATION PLAN

acupetvet & SERVICE CENTER
veterinary acupuncture & rehabilitation clinic

LITTLEWORTH ROAD
DOVER, NEW HAMPSHIRE

OCTOBER 25, 2021 JOB No. 21114
SCALE: 1" = 20'

WPA-1

SHEET NO.

(P20-44)

Appendix D

Function and Value Evaluation Worksheet & Vegetation List



WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET

Water Division/Land Resource Management Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A / Env-Wt 311.03(b)(10); Env-Wt 311.10

APPLICANT LAST NAME, FIRST NAME, M.I.: City of Dover Waterline Extension

As required by Env-Wt 311.03(b)(10), an application for a standard permit for minor and major projects must include a functional assessment of all wetlands on the project site as specified in Env-Wt 311.10. This worksheet will help you compile data for the functional assessment needed to meet federal (US Army Corps of Engineers (USACE); if applicable) and NHDES requirements. Additional requirements are needed for projects in tidal area; please refer to the [Coastal Area Worksheet \(NHDES-W-06-079\)](#) for more information.

Both a desktop review and a field examination are needed to accurately determine surrounding land use, hydrology, hydroperiod, hydric soils, vegetation, structural complexity of wetland classes, hydrologic connections between wetlands or stream systems or wetland complex, position in the landscape, and physical characteristics of wetlands and associated surface waters. The results of the evaluation are to be used to select the location of the proposed project having the least impact to wetland functions and values (Env-Wt 311.10). This worksheet can be used in conjunction with the [Avoidance and Minimization Written Narrative \(NHDES-W-06-089\)](#) and the [Avoidance and Minimization Checklist \(NHDES-W-06-050\)](#) to address Env-Wt 313.03 (Avoidance and Minimization). If more than one wetland/ stream resource is identified, multiple worksheets can be attached to the application. All wetland, vernal pools, and stream identification (ID) numbers are to be displayed and located on the wetlands delineation of the subject property.

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: Residential and commercial

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? ☐ Yes ☒ No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): 30

SECTION 2 - DELINEATION (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: Damon Burt, Fraggie Rock Environmental

DATE(S) OF SITE VISIT(S): 10/21/2021

DELINEATION PER ENV-WT 406 COMPLETED? ☒ Yes ☐ No

CONFIRM THAT THE EVALUATION IS BASED ON:

- ☒ Office and
☒ Field examination.

METHOD USED FOR FUNCTIONAL ASSESSMENT (check one and fill in blank if "other"):

- ☒ USACE Highway Methodology.
☐ Other scientifically supported method (enter name/ title):

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

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

www.des.nh.gov

SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: A	LOCATION: (LAT/ LONG) 43.185079/70.893949
WETLAND AREA: Approximately 2,500 square feet	DOMINANT WETLAND SYSTEMS PRESENT: PEM1E
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 1	COWARDIN CLASS: PEM1
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? ☐ Yes ☒ No if not, where does the wetland lie in the drainage basin? northeast/north-middle of Bellamy River Watershed	IS THE WETLAND PART OF: ☐ A wildlife corridor or ☐ A habitat island? IS THE WETLAND HUMAN-MADE? ☐ 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)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? ☐ Yes ☒ No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? ☐ Yes ☐ No
PROPOSED WETLAND IMPACT TYPE: Temporary impact for water main infrastructure installation	PROPOSED WETLAND IMPACT AREA: 785 square feet
SECTION 4 - WETLANDS FUNCTIONS AND VALUES (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values: 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient Removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) First, determine if a wetland is suitable for a particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal ("Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective".	

"Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☒ No		☐ Yes ☒ No	Roadside wetland decreases the value of the ecosystem
2	☐ Yes ☒ No		☐ Yes ☒ No	No public access, potential hazard due to proximity to roadway
3	☐ Yes ☒ No		☐ Yes ☒ No	small wetland, not forested, no natural connectivity to a watercourse
4	☒ Yes ☐ No	4, 5, 6, 8, 10,	☒ Yes ☐ No	proximity to road/impervious surfaces, potential ability to retain floodwater from nearby Bellamy River Unnamed Brook or other unmapped waterways
5	☐ Yes ☒ No		☐ Yes ☒ No	wetland is associated with not perennial watercourse,
6	☒ Yes ☐ No	1	☐ Yes ☒ No	NHB identified the potential for the New England Cottontail (Endangered) to be present on the site
7	☒ Yes ☐ No	9, 11	☐ Yes ☒ No	small wetland, limited open water, emergent vegetation dominant, not associated with watercourse, small ability for nutrient retention decreases the value of this function
8	☒ Yes ☐ No	4, 7, 12	☒ Yes ☐ No	evidence of wildlife, high vegetation density, contains flowering plants
9	☐ Yes ☒ No		☐ Yes ☒ No	no public viewing location, along public roadway
10	☐ Yes ☒ No		☐ Yes ☒ No	Not associated with watercourse
11	☐ Yes ☒ No		☐ Yes ☒ No	not shoreline wetland
12	☐ Yes ☒ No		☐ Yes ☒ No	small wetland, only one wetland type, no public access, hazardous due to proximity to roadway

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13	☐ Yes ☒ No		☐ Yes ☐ No	No recreational access
14	☒ Yes ☐ No	19, 21	☐ Yes ☒ No	wetland size, limited connectivity, and surrounding land use decreases the value of this

SECTION 5 - VERNAL POOL SUMMARY (Env-Wt 311.10)

Delineations of vernal pools shall be based on the characteristics listed in the definition of “vernal pool” in Env-Wt 104.44. To assist in the delineation, individuals may use either of the following references:

- *Identifying and Documenting Vernal Pools in New Hampshire 3rd Ed.*, 2016, published by the New Hampshire Fish and Game Department; or
- The USACE *Vernal Pool Assessment* draft guidance dated 9-10-2013 and form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

All vernal pool ID numbers are to be displayed and located on the wetland delineation of the subject property.

“Important Notes” are to include documented reproductive and wildlife values, landscape context, and relationship to other vernal pools/wetlands.

Note: For projects seeking federal approval from the USACE, please attach a completed copy of The USACE “Vernal Pool Assessment” form dated 9-6-2016, Appendix L of the USACE New England District *Compensatory Mitigation Guidance*.

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1					
2					
3					
4					
5					

SECTION 6 - STREAM RESOURCES SUMMARY

DESCRIPTION OF STREAM:	STREAM TYPE (ROSGEN):
HAVE FISHERIES BEEN DOCUMENTED?	DOES THE STREAM SYSTEM APPEAR STABLE?

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☐ Yes ☐ No	☐ Yes ☐ No			
OTHER KEY ON-SITE FUNCTIONS OF NOTE: 				
The following table can be used to compile data on stream resources. "Important Notes" are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.				
FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☐ No		☐ Yes ☐ No	
2	☐ Yes ☐ No		☐ Yes ☐ No	
3	☐ Yes ☐ No		☐ Yes ☐ No	
4	☐ Yes ☐ No		☐ Yes ☐ No	
5	☐ Yes ☐ No		☐ Yes ☐ No	
6	☐ Yes ☐ No		☐ Yes ☐ No	
7	☐ Yes ☐ No		☐ Yes ☐ No	
8	☐ Yes ☐ No		☐ Yes ☐ No	
9	☐ Yes ☐ No		☐ Yes ☐ No	
10	☐ Yes ☐ No		☐ Yes ☐ No	
11	☐ Yes ☐ No		☐ Yes ☐ No	
12	☐ Yes ☐ No		☐ Yes ☐ No	
13	☐ Yes ☐ No		☐ Yes ☐ No	
14	☒ Yes ☐ No		☐ Yes ☐ No	
SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)				
☒ Wildlife and vegetation diversity/abundance list. ☒ Photograph of wetland.				

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- ☒ Wetland delineation plans showing wetlands, vernal pools, and streams in relation to the impact area and surrounding landscape. Wetland IDs, vernal pool IDs, and stream IDs must be indicated on the plans.
- ☐ For projects in tidal areas only: additional information required by Env-Wt 603.03/603.04. Please refer to the [Coastal Area Worksheet \(NHDES-W-06-079\)](#) for more information.

WETLAND FUNCTIONAL ASSESSMENT

Wildlife and Vegetation Diversity/Abundance List

The following is vegetation and wildlife observed on-site by Fraggie Rock Environmental on 10/21/2021. For information about wetland locations please refer to the associated report and attached plans.

Wetland A Vegetation Assessment:

Purple loosestrife (*Lythrum salicaria*) – dominant

Soft rush (*uncus e usus*)

Canada Goldenrod (*Solidago canadensis*) – dominant

Meadowsweet (*ili endula ulmaria*)

Sensitive fern (*noclea sensi ilis*)

Red Maple, shrub (*cer ru rum*)

Tearthumb (*Persicaria sagittata*) – dominant

Glossy buckthorn (*hamnus rangula*)

Poison Ivy (*Toxicodendron radicans*) – dominant

Dewberry (*u us lagellaris*)

Sumac (*hus spp.*)

Aster Species (*steraceae* family)

Wood fern (*ryo teris spp.*)



Permittee-Responsible Mitigation Guidance

The goal of compensatory mitigation is to sustain the functions and values of aquatic resources in the watershed through *protection, restoration, and enhancement*, of wetlands and streams, to compensate for the aquatic resources lost from impacts.

In New Hampshire, the permittee should first explore whether there are local projects recommended by the Town's Conservation Commission that may be used as mitigation.

Types of projects that can be used as local compensation for losses to wetlands and streams and included on a Town's 'Mitigation Priority List'

Land Protection

of a wetland, stream, or vernal pool and its critical upland buffer

- Acquisition of land by fee-simple purchase by a municipality or conservation entity.
- Conservation easements and deed restrictions preventing future development.

Wetland Restoration & Enhancement

to increase functions & values of degraded wetlands

- Remove fill from a wetland to restore natural hydrology and vegetation.
- Restore natural hydrology
- Improve water quality by eliminating pollutant discharge into a wetland, removing impervious surfaces in the upland buffer, and establishing stormwater treatment.
- Tidal marsh and mudflat enhancement
- Living shoreline creation

Stream Restoration & Enhancement

for aquatic connectivity, habitat, & flood resiliency

- Reconnect aquatic habitats by removing dams and upgrading culverts to allow for fish and wildlife passage.
- Daylighting buried streams and channel rehabilitation.
- Habitat enhancements for fish and wildlife such as wood additions and step-pool creation.
- Reconnect a stream with its floodplain with graded benches and plantings.
- Remove bank armoring and use bioengineering for to stabilize banks.

The biological, physical, and geochemical processes that occur within wetlands, streams, and lakes provide important ecosystem services such as water purification and storage, wildlife habitat, flood storage and attenuation, called "Functions and Values". When considering what type of mitigation is suitable to offset the impacts from a project, it is important to understand the functions that have been lost and their importance in the watershed. To learn more about the important functions that wetlands and streams perform, and what methods are used for assessments, read the [Wetlands Fact Sheet on Functional Assessments](#).

What makes a good mitigation site?

The Project Contains High-Value Resources and Functions

Wetlands and streams that perform multiple functions that are significant to the watershed are good candidates for mitigation sites. In particular, it is most beneficial if the mitigation site is located in the same HUC 10 watershed, to better offset the losses locally.

Benefits to Water Quality and Supply

Areas that are important to public water supply sources, and lie within source water, wellhead, groundwater protection, or high-yield aquifer areas are great candidates for mitigation projects as they serve a critical function in maintaining clean water supplies to the public.

Fish and Wildlife Habitat

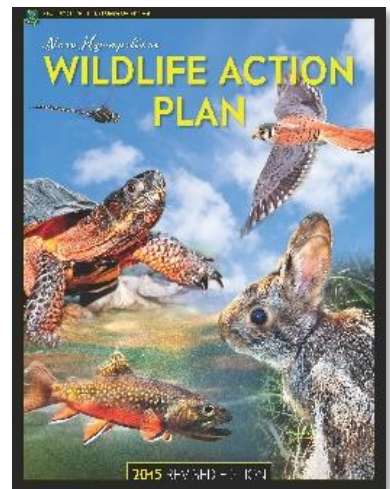
Protection or restoration of an area that will benefit an exemplary natural community, threatened, rare, or endangered species is highly encouraged. Areas ranked as Statewide (Tier 1) or Regional Biological Significance (Tier 2) by the NHFG Wildlife Action Plan are important to sustaining critical wildlife habitat. High-value aquatic resources such as vernal pools, prime-wetlands, fens, and coldwater streams, are excellent targets for mitigation.

Landscape Connectivity

Projects that will connect conservation lands by adding to existing protected parcels and establishing new connections between conserved lands, are important to landscape resiliency. Contributes to continuous blocks of undeveloped land by adding to within one of the larger, unfragmented blocks of land within its HUC 10 watershed. Projects that reconnects high-quality stream habitat that is important to fish and other aquatic animals.

Supports Regional Conservation Efforts

Projects that have strong support from the host-municipality and local conservation partners are encouraged. Areas identified as a priority in a conservation plan and that are under high threat to potential development and conservation groups are eager to have it protected.



Tips for Creating your Town's Priority Mitigation List

It is important for your Conservation Commission to have a diverse list that captures many types of projects that are accepted as compensatory mitigation. This will better prepare your town to find a project that will appropriately offset the lost functions when a major impact project is being permitted!

- Perform a natural resource inventory of your town to identify high-quality wetlands, streams, vernal pools, and assess their buffers. Point out areas that need some restoration work to enhance the functions on the site.
- Reach out to local land trusts and conservation organizations to collaborate on finding areas with a common conservation interest.
- Explore the NHFG Wildlife Action Plan (WAP) and the Natural Heritage Bureau database to identify exemplary natural communities, threatened and endangered species, wildlife habitats in your community. Highlight parcels that contain Tier 1 and Tier 2 WAP habitat and identify areas that contain, and have suitable habitat for threatened or endangered species.
- Prioritize areas that contain vernal pools, buffers on prime wetlands, frontage on designated rivers, and headwater streams.
- Put a conservation easement on an existing town-owned land, such as town forests that are not currently protected.
- Look for parcels adjacent to existing protected lands or those that would connect separated conservation parcels to build upon local conservation efforts. .
- Find farmlands that could be sustainably managed for grassland species and riparian corridors that could be retired from agriculture and replanted with native trees.
- Identify deficient culverts in your community and target those that would open up fish and wildlife passage and increase flood resiliency.
- Look for old, high-risk dams that could be removed.

Resources to assist you in putting together a comprehensive Mitigation Priority List for your Town

There are many online mapping tools and conservation organizations that use the best available science to help you explore what potential projects are in your community.

- [NHDES Aquatic Restoration Mapper](#)
- [NHDES One Stop Mapper](#)
- [NHDES Wetlands Permitting Tool](#)
- [NHFG Wildlife Action Plan Town Maps](#)
- [GRANIT View](#)
- [NH Wetlands Mapper](#)

FROM NHDES WEBSITE

Permittee-Responsible Mitigation: The permittee will provide a restoration, enhancement, or land preservation project to compensate for the impacts from a specific project. The permittee is responsible for the design, implementation, monitoring, and continued success of the mitigation site. This type of mitigation may occur at the same location as the impacts or off-site within the same watershed. The applicant should consider priorities identified by the town's conservation commission as an option.

Types of Mitigation Projects

There are different approaches that can be used to compensate for lost functions from wetland and stream impacts, and they may be used singly or in combination.

Upland Buffer Preservation

This is the permanent legal protection of a valuable wetland or stream and its upland buffer. The protection will ensure that the waterbody and its surrounding upland area, will remain in a natural and undeveloped condition in perpetuity. Protection is accomplished by placing the land under a conservation easement, which is held by a conservation organization, town, or state agency. Land preservation does not make up for lost wetland functions and values, but removes the threat of future loss and degradation.

Restoration

These are activities that will return a degraded wetland or stream back to its natural condition.

- Examples of wetland restoration are removing fill and replanting hydric plants, restoring the natural hydrology of a wetland by removing ditches and drains, and creating living shorelines in tidal areas where erosion and armoring have impacted the marsh migration and tidal flushing.
- Examples of stream restoration include removing aquatic barriers such as dams and culvert to bring back the river environment, daylighting buried streams, removing hard armoring and using bioengineering to stabilize banks, improvements for fish and wildlife habitat, and reconnecting the floodplain.

Enhancement

This is when certain aspects of the physical, chemical, or biological characteristics of an aquatic resource are modified to increase its functions. Enhancement is usually designed to target a specific improvement.

- For example, a perched culvert may be upgraded to an open-bottom arch to enhance fish passage and hydrology at a site.
- Riparian plantings in the buffer to improve water quality and wildlife habitat functions.

Establishment (Creation)

This is a man-made wetland that involves excavating an upland area to achieve adequate hydrology to support hydric soils and vegetation. Wetland creation is not a preferred method of mitigation to be used in New Hampshire based upon previous failures of wetland creation, the high costs for these projects, and significant engineering efforts needed to succeed.

Thursday, April 7th
5:30 PM – 7:00 PM
Virtual Event

Dover Climate Resources Forum

Hosted By: UNH Extension | NH Sea Grant &
Strafford Regional Planning Commission



Please join us for a virtual forum to learn about Dover's climate-related resources and discuss ways you can use them. This event is for all interested volunteer board, council, and committee members, as well as City staff. You'll learn about what information is available and talk with your peers about how it could be best used to support Dover's efforts to prepare for the impacts of a changing climate. This event was made possible through the efforts of Dover's Climate Forum Planning Committee with support from UNH Extension | NH Sea Grant and SRPC. Hope to see you there!

Register here:

www.tinyurl.com/Dover-Climate

Registration is required to receive the zoom link.

For more information,
contact Jackson Kaspari,
Resilience Coordinator

p: (603) 516-6008

e: j.kaspari@dover.nh.gov



Extension



For persons with disabilities requiring special accommodations, please contact Lisa.Wise@unh.edu prior to the event. Given ample time, we will make any reasonable effort to make accommodations. This project was funded, in part, by NOAA's Office for Coastal Management under the Coastal Zone Management Act in conjunction with the NHDES Coastal Program.