TOWN OF EXETER, NEW HAMPSHIRE

10 FRONT STREET • EXETER, NH • 03833-3792 • (603) 778-0591 •FAX 772-4709

www.exeternh.gov

PUBLIC NOTICE
EXETER CONSERVATION COMMISSION

Monthly Meeting

The Exeter Conservation Commission will meet in the Nowak Room, Exeter Town Offices at 10 Front Street, Exeter on **Tuesday, July 10th, 2018 at 7:00 P.M.**

Call to Order:

1. Introduction of Members Present
2. Public Comment

Action Items

1. Standard Dredge and Fill Wetland Application for a Light Industrial/Distribution Facility from Garrison Glen, LLC located at 24 Continental. Tax Map 56, Lot 3-1. (*Brendan Quigley, Gove Environmental Service, Inc.)*
2. Review and Discussion of Application Materials for the "Exeter Rose Farm" Open Space Subdivision at Oak Street Extension and Forest Street Tax Map 54 Lot 5, 6, 7 and Tax Map 63, Lot 20. Submission includes Natural Resource and Wetlands Reports, Revised potential Conservation Land of 6.31 acres in accordance with Zoning Ordinance 7.7.1, Shoreland Conditional Use Permit application in accordance with Zoning Ordinance 9.3, Wetland Waiver request in accordance with Zoning Ordinance 9.1.6.C. and Site and Subdivision Regulations 9.9.3 (*Marc Jacobs, CWS, Brenda Kolbow, TFM)*
3. Committee Reports
    a. Property Management
    b. Trails
    c. Outreach
    d. CC Representatives Report on Other Committees
4. Approval of Minutes: June 12th Meeting
5. Other Business
6. Next Meeting: Date Scheduled (8/14/18), Submission Deadline (8/3/18)

Bill Campbell, Chair
Exeter Conservation Commission
Posted July 6th, 2018 Exeter Town Office, Exeter Public Library, and Town Departments.

TOWN OF EXETER
PLANNING DEPARTMENT MEMORANDUM

Date: July 6, 2018
To: Conservation Commission Board Members
From: Kristen Murphy, Natural Resource Planner
Subject: July 10th Conservation Commission Meeting

1. 24 Continental Wetland Application

The conditional use permit for the project was before you in December, 2017. Minutes and video are available online. At that meeting the Commission recommended approval of the wetland/Shoreland CUP applications to the planning board with the following conditions:

- The Commission recommends that as a condition of approval, the owner work with the Commission to establish a mutually agreeable location for trail connection prior to issuance of Certificate of Occupancy in order to accommodate the 10' pedestrian right of way established during the subdivision of the industrial complex (D-26568).

- The Commission would like to see additional plantings proposed for the temporary buffer impact areas. They would like priority given to those areas within the buffer for the Exeter Shoreland Protection District to protect the sensitive resources affiliated with the Little River area, as well as the southwest corner of the development closest to the Little River footbridge, in order to reduce visibility of the project from the trail.

- The Commission is concerned about the proposed snow storage within the Exeter Shoreland Protection District. Given the slope and the proximity to the river, they feel snow storage should not be permitted in the western portion of this property due to lack of pre-treatment and potential impacts to the Little River and associated wetlands.

- The Commission would like to confirm that the large oak tree, located near the northwest portion of the property, is out of the project impact area and a note added to the plan identifying it as a tree to be protected.

The applicant is before you now for your recommendation to NHDES. Their proposed project plan will entail 4,960 SF of permanent wetland impacts. NHB report indicates that there was a record in the vicinity but they do not anticipate impacts from the proposed project. It is not specific as to the type of record. Vernal pool survey conducted in spring of 2017 and did not find evidence of breeding obligate species.

Suggested Motions: Motion to send a memo to NHDES as indicated below:

____ *We have investigated this application and have no objection to the issuance of this permit.*

_____ *We have investigated this application and recommend that this permit be (approved)(denied) as noted below:*

2. Rose Farm

Your packet includes a Natural Resource Plan, Wetland Functional Evaluation, and Wetland Delineation Report. These reports were requested during the Technical Review Process and are included to inform your review of the project, provide a discussion of the significance of impacts and offer some discussion on potential mitigation options. Your input on these issues could serve as valuable guidance to the Planning Board in their review the application.

Any recommendations should be included in a memo to the Planning Board

The project is before you for now for several recommendations to the Planning Board. They are addressed below.

A. **Conservation Land**: The applicant was before you on June 12th with a proposal for conservation land. They have revised their proposal to 6.31 acres of conservation land that appears to reflect changes the board requested at the last meeting. Though the cover letter indicates conservation easement, discussions with the applicant's

representative reflected an intent to convey land to the Town with management oversight from the Commission, as you requested.

Based on your indication of support at the last meeting, suggested motion:

- *The Conservation Commission submit a memo to the Planning Board indicating we are **supportive** of the Town accepting fee ownership of this land with the following conditions:*

  — *Hunting would not be permitted on the property*

  — *Prior to Town acceptance, the applicant will provide: a draft deed to the Commission for review and approval, a surveyed plan, a baseline documentation report, and on-site boundary marker placement will be confirmed on the ground by the Commission (or their representative) and the Grantor.*

  — *The applicant is responsible for construction of the trail connection to the existing trail network, any required crossings along that connection, and installation of a trailhead sign at the trail entrance.*

  — *The applicant will install conservation boundary discs along the conservation boundary adjacent to house lots*

B. **Shoreland Conditional Use Permit:** The applicant is looking for your recommendation to the Planning Board on the Shoreland CUP. In addition to the application form, your packet includes a memo from wetland scientist, Marc Jacobs that quantifies the impacts and responds to the list of Shoreland conditions defined in the ordinance and is accompanied by a plan set depicting Shoreland impacts.

Potential Motions for a memo to the Planning Board:

____ *We have reviewed this application and have **no objection** to the issuance of a Shoreland conditional use permit as proposed.*

____ *We have reviewed this application and recommend that the Shoreland conditional use permit be (**approved**)(**denied**) as noted below:*

C. **Wetland Delineation Report, Wetland Waiver:** In accordance with Zoning Ordinance 9.1.6.C, since this project triggers Planning Board Subdivision/Site Plan review, the applicant must follow section 9.9 of the Site Plan Review and Subdivision Regulations for wetland buffer impacts. Your packet includes a memo from wetland scientist, Marc Jacobs that quantifies the wetland buffer impacts and responds to the list of waiver guidelines. It also includes a plan set depicting wetland and wetland buffer impacts.

Potential Motions for a memo to the Planning Board:

____ *We have reviewed this application and have **no objection** to the waiver request as proposed.*

____ *We have reviewed this application and recommend the waiver request be (**approved**)(**denied**) as noted below:*

GOVE ENVIRONMENTAL SERVICES, INC.

NH DES WETLANDS BUREAU
DREDGE & FILL APPLICATION
For
LIGHT INDUSTRIAL/DISTRIBUTION FACILITY
24 Continental Drive
Exeter, NH

June, 2018

Prepared By

Gove Environmental Services, Inc.
8 Continental Dr Bldg 2 Unit H, Exeter, NH 03833-7526
Ph (603) 778 0644 / *Fax* (603) 778 0654
info@gesinc.biz / www.gesinc.biz

Table of Contents

List of Figures (located before the Appendicies)

List of Appendices

Table of Contents

List of Figures (located before the Appendicies)

List of Appendices

NH DES Dredge & Fill Application Form

NHDES-W-06-012

WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau
Land Resources Management

Check the status of your application: www.des.nh.gov/onestop

RSA/Rule: RSA 482-A/ Env-Wt 100-900

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

1. REVIEW TIME: Indicate your Review Time below. To determine review time, refer to Guidance Document A for instructions.

☒ Standard Review (Minimum, Minor or Major Impact) ☐ Expedited Review (Minimum Impact only)

2. MITIGATION REQUIREMENT:

If mitigation is required a Mitigation-Pre Application meeting must occur prior to submitting this Wetlands Permit Application. To determine if Mitigation is Required, please refer to the Determine if Mitigation is Required Frequently Asked Question.

Mitigation Pre-Application Meeting Date: Month: __ Day: __ Year: ____

☒ N/A - Mitigation is not required

3. PROJECT LOCATION:

Separate wetland permit applications must be submitted for each municipality that wetland impacts occur within.

ADDRESS: **24 Continental Drive**			TOWN/CITY: **Exeter**
TAX MAP: **56**	BLOCK:	LOT: **3-1**	UNIT:
USGS TOPO MAP WATERBODY NAME: **Little River** ☐ NA		STREAM WATERSHED SIZE: ☒ NA	
LOCATION COORDINATES (If known): **1166740, 17892** ☐ Latitude/Longitude ☐ UTM ☒			

4. PROJECT DESCRIPTION:

Provide a brief description of the project outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. DO NOT reply "See Attached" in the space provided below.

The proposed project involves the construction of a 116,288 square foot light industrial and distribution facility, associated access, parking, loading area, and stormwater management. A total of 4,950 square feet of direct wetland impact is proposed.

5. SHORELINE FRONTAGE:

☒ NA This does not have shoreline frontage. SHORELINE FRONTAGE:

Shoreline frontage is calculated by determining the average of the distances of the actual natural navigable shoreline frontage and a straight line drawn between the property lines, both of which are measured at the normal high water line.

6. RELATED NHDES LAND RESOURCES MANAGEMENT PERMIT APPLICATIONS ASSOCIATED WITH THIS PROJECT:

Please indicate if any of the following permit applications are required and, if required, the status of the application.

To determine if other Land Resources Management Permits are required, refer to the Land Resources Management Web Page.

Permit Type	Permit Required	File Number	Permit Application Status
Alteration of Terrain Permit Per RSA 485-A:17	☒ YES ☐ NO	____	☐ APPROVED ☒ PENDING ☐ DENIED
Individual Sewerage Disposal per RSA 485-A:2	☐ YES ☐ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Subdivision Approval Per RSA 485-A	☐ YES ☐ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Shoreland Permit Per RSA 483-B	☒ YES ☐ NO	____	☐ APPROVED ☒ PENDING ☐ DENIED

7. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS:

See the Instructions & Required Attachments document for instructions to complete a & b below.

a. Natural Heritage Bureau File ID: NHB **18** - **1584**.

b. ☐ Designated River the project is in ¼ miles of: _____; and date a copy of the application was sent to the Local River Management Advisory Committee: Month: __ Day: __ Year: ____

☒ N/A

8. APPLICANT INFORMATION (Desired permit holder)

LAST NAME, FIRST NAME, M.I.: **Monahan, Thomas**

TRUST / COMPANY NAME: **Garrison Glenn, LLC** | MAILING ADDRESS: **20 Trafalger Square, Suite 610**

TOWN/CITY: **Nashua** | STATE: **NH** | ZIP CODE: **03063**

EMAIL or FAX: **Thomasfmonahan@hotmail.com** | PHONE:

ELECTRONIC COMMUNICATION: By initialing here: _____, I hereby authorize NHDES to communicate all matters relative to this application electronically.

9. PROPERTY OWNER INFORMATION (If different than applicant)

LAST NAME, FIRST NAME, M.I.:

TRUST / COMPANY NAME: | MAILING ADDRESS:

TOWN/CITY: | STATE: | ZIP CODE:

EMAIL or FAX: | PHONE:

ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically.

10. AUTHORIZED AGENT INFORMATION

LAST NAME, FIRST NAME, M.I.: **Quigley, Brendan** | COMPANY NAME: **Gove Environmental Services Inc**

MAILING ADDRESS: **8 Continental Drive Bldg 2 Unit H**

TOWN/CITY: **Exeter** | STATE: **NH** | ZIP CODE: **03833**

EMAIL or FAX: **bquigley@gesinc.biz** | PHONE: **603-778-0644**

ELECTRONIC COMMUNICATION: By initialing here BQ, I hereby authorize NHDES to communicate all matters relative to this application electronically.

11. PROPERTY OWNER SIGNATURE:

See the Instructions & Required Attachments document for clarification of the below statements

By signing the application, I am certifying that:

1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.
2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document.
3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
6. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.
7. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to identify the presence of historical/ archeological resources while coordinating with the lead federal agency for NHPA 106 compliance.
8. I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project.
9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.
11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
12. The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not forward returned mail.

Property Owner Signature	Print name legibly	Date
Monahan Garrison Glen LLC	Thomas F Monahan GARRISON GLEN LLC	6/4/2018

MUNICIPAL SIGNATURES

12. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

1. Waives its right to intervene per RSA 482-A:11;
2. Believes that the application and submitted plans accurately represent the proposed project; and
3. Has no objection to permitting the proposed work.

	Print name legibly	Date
⇨		

DIRECTIONS FOR CONSERVATION COMMISSION

1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
2. Expedited review requires the Conservation Commission signature be obtained **prior** to the submittal of the original application to the Town/City Clerk for signature.
3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will be reviewed in the standard review time frame.

13. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

Town/City Clerk Signature	Print name legibly	Town/City	Date
⇨			

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3,I

1. For applications where "Expedited Review" is checked on page 1, if the Conservation Commission signature is not present, NHDES will accept the permit application, but it will NOT receive the expedited review time.
2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
3. 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.
4. 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; and
5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. 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.

14. IMPACT AREA:
For each jurisdictional area that will be/has been impacted, provide square feet and, if applicable, linear feet of impact
Permanent: impacts that will remain after the project is complete.
Temporary: impacts not intended to remain (and will be restored to pre-construction conditions) after the project is complete.

JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.		TEMPORARY Sq. Ft. / Lin. Ft.	
Forested wetland	4,950	☐ ATF		☐ ATF
Scrub-shrub wetland		☐ ATF		☐ ATF
Emergent wetland		☐ ATF		☐ ATF
Wet meadow		☐ ATF		☐ ATF
Intermittent stream		☐ ATF		☐ ATF
Perennial Stream / River	/	☐ ATF	/	☐ ATF
Lake / Pond	/	☐ ATF	/	☐ ATF
Bank - Intermittent stream	/	☐ ATF	/	☐ ATF
Bank - Perennial stream / River	/	☐ ATF	/	☐ ATF
Bank - Lake / Pond	/	☐ ATF	/	☐ ATF
Tidal water	/	☐ ATF	/	☐ ATF
Salt marsh		☐ ATF		☐ ATF
Sand dune		☐ ATF		☐ ATF
Prime wetland		☐ ATF		☐ ATF
Prime wetland buffer		☐ ATF		☐ ATF
Undeveloped Tidal Buffer Zone (TBZ)		☐ ATF		☐ ATF
Previously-developed upland in TBZ		☐ ATF		☐ ATF
Docking - Lake / Pond		☐ ATF		☐ ATF
Docking - River		☐ ATF		☐ ATF
Docking - Tidal Water		☐ ATF		☐ ATF
Vernal Pool		☐ ATF		☐ ATF
TOTAL	4,950 /		/	

15. APPLICATION FEE: See the Instructions & Required Attachments document for further instruction

☐ Minimum Impact Fee: Flat fee of $ 200
☒ Minor or Major Impact Fee: Calculate using the below table below

Permanent and Temporary (non-docking)	**4,950** sq. ft.	X	$0.20 =	**$ 990.00**
Temporary (seasonal) docking structure:	sq. ft.	X	$1.00 =	$
Permanent docking structure:	sq. ft.	X	$2.00 =	$
Projects proposing shoreline structures (including docks) add $200			=	**$ 990.00**
			Total =	**$ 990.00**
The Application Fee is the above calculated Total or $200, whichever is greater			=	**$ 990.00**

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

WETLANDS PERMIT APPLICATION – ATTACHMENT A
MINOR AND MAJOR - 20 QUESTIONS
Land Resources Management
Wetlands Bureau

Check the Status of your application: www.des.nh.gov/onestop

RSA/ Rule: RSA 482-A, Env-Wt 100-900

Env-Wt 302.04 Requirements for Application Evaluation - For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction. Respond with statements demonstrating:

1. The need for the proposed impact.

The purpose of the proposed project is to construct a 116,288 SF multitenant building, associated paved areas, and stormwater management to house light industrial and distribution uses. The project site is an existing lot in the commercial and industrial area of Exeter and also lies within the Exeter Tax Increment Financing (TIF) district in which the Town is supporting development.

2. That the alternative proposed by the applicant is the one with the least impact to wetlands or surface waters on site.

Industrial development of this type requires a contiguous block of land on which to situate large warehouse type building with adequate paved access, parking, and loading areas. This does not allow for significant layout adjustment to avoid wetland impacts. This site is also constrained by the Little River and Protected Shoreland to the west and the need to utilize the developed access driveway and utilities extending from the Continental Drive cul-de-sac.

The building has therefore been located on the central upland portion of the site, utilizing the existing access drive and avoiding the more sensitive steep slopes within the protected shoreland of the Little River to the greatest extent possible. This limits direct wetland impacts to two small areas at the margins of the forested wetland surrounding the buildable upland. These impacts have been minimized through the use of steep grading. This represents the least impacting alternative in terms of total area and functional value.

3. The type and classification of the wetlands involved.
All the wetland areas are seasonally saturated forested wetlands (PFO1E) dominated by Red Maple
4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.
The wetland associated with the project is loosely associated with the Little River which lies outside the project site to the west. These seasonally saturated, forested wetlands are distinctly different front the very poorly drained marshes, shrub thickets, and swamps that directly border the waterway.
5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.
The wetland on this site is marginal red maple forested wetland which is common in New Hampshire.
6. The surface area of the wetlands that will be impacted.
A total direct wetland impact of 4,950 square feet is proposed

7. The impact on plants, fish and wildlife including, but not limited to:
   a. Rare, special concern species;
   b. State and federally listed threatened and endangered species;
   c. Species at the extremities of their ranges;
   d. Migratory fish and wildlife;
   e. Exemplary natural communities identified by the DRED-NHB; and
   f. Vernal pools.

The New Hampshire Natural Heritage Bureau has indicated there are no species of concern on or in the vicinity of the project site. A vernal pool investigation was conducted in the spring of 2017 and no evidence of breeding by obligate vernal pool species was identified.

8. The impact of the proposed project on public commerce, navigation and recreation.

The project will have net positive impact on public commerce though job creation, tax base, and the sales of the goods that facility will create. The property is entirely private and offers no public recreation benefits, nor does it have any connectivity for waterway navigation.

9. The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the effect of the construction of the wall on the view of other users of the lake.

The site of the proposed project is an existing development lot within an industrial park. The proposed development is entirely consistent with the existing uses and zoning and should have no impact on the aesthetic interests of the public.

10. The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area.

The site is private property with a single right of public passage, an easement which provides access to the Little River Conservation Area. During the Exeter Site Plan Approval process the applicant committed to maintain this access. The project will not therefore interfere with public right of passage or access.

11. The impact upon abutting owners pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to rip-rap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties.

Proposed impacts are completely contained on the site and will not affect abutters in any way. Drainage from the proposed development will be handled on-site in accordance with AOT requirements, therefore ensuring there will be no impact to abutting properties upstream or downstream from the site.

12. The benefit of a project to the health, safety, and well being of the general public.

The project involves the construction of a facility intended to house light industrial and warehouse uses. These are consistent with the surrounding land use and will not affect public health in any way.

13. The impact of a proposed project on quantity or quality of surface and ground water. For example, where an applicant proposes to fill wetlands the applicant shall be required to document the impact of the proposed fill on the amount of drainage entering the site versus the amount of drainage exiting the site and the difference in the quality of water entering and exiting the site.

The comprehensive stormwater management proposed for the development will fully comply with AOT requirements, therefore ensuring no changes to the quantity or quality of stormwater post development.

14. The potential of a proposed project to cause or increase flooding, erosion, or sedimentation.

These interests will be protected during the construction term through best management practices as specified in the plans and the AOT permit. Post development, the stormwater management system will ensure that flooding, erosion, and sedimentation do not occur.

15. The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards.

The project is not directly associated with a waterbody or waterway and does not involve elements of wave action or current.

16. The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alterations to the wetland proportional to the extent of their property rights. For example, an applicant who owns only a portion of a wetland shall document the applicant's percentage of ownership of that wetland and the percentage of that ownership that would be impacted.

The size of the wetland on site is very small in relation to the overall size of the wetland complex which lies primarily off site in association with the Little River. The proposed impacts are an even smaller portion of the wetland. If similar impacts were allowed to other owners net effects would be commensurately small.

17. The impact of the proposed project on the values and functions of the total wetland or wetland complex.

The function of the wetlands on the site is limited to modest wildlife habitat and maintenance of water quality in the watershed, essentially acting as a buffer to the more sensitive wetlands near the Little River. The wildlife habitat value is diminished by its proximity to existing development and by the fact that it is not wetland specific, differing little from the surrounding uplands. The true wetland related habitat value lies within the Little River and its floodplain which lie well outside the project area. Since impacts are located far up-gradient of these areas and stormwater management systems will be design to protect water quality, proposed impacts will have negligible, if any effect on the overall functions and values of the wetland areas which will remain intact and largely offsite.

18. The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication.

No such areas have been identified

19. The impact upon the value of areas named in acts of congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.

No such areas have been identified

20. The degree to which a project redirects water from one watershed to another.

No such areas have been identified

Additional comments

1.0 Introduction

This Minor Impact Dredge and Fill Application is being submitted by Gove Environmental Services, Inc. on behalf of Garrison Glen, LLC for 4,950 square feet of wetland impact associated with the development of the property located at 24 Continental Drive in Exeter, NH. The project site, identified on assessor Map 56 as Lot 3.1, totals 20.68 acres located near the end of Continental Drive within the Garrison Glen Industrial Park. The site is wooded except for a short section of existing paved access drive which is a shared with eth adjacent lot, also currently undeveloped.

The proposed project involves the construction of a multi-tenant, light industrial and distribution facility, associated access, parking, loading area, and stormwater management. The following sections and appendices provide details on the proposed project, the proposed impacts, and the requirements outlined in Env-Wt 300.

2.0 Wetland Resources

The wetlands on the site were delineated by Gove Environmental Services in fall of 2015 utilizing the standards of the Corps of Engineers *Wetlands Delineation Manual*[1] and the NH DES Wetlands Bureau *Code of Administrative Rules*[2]. Dominant hydric soil conditions within the wetlands were identified using the criteria in *Field Indicators for Identifying Hydric Soils in New England*[3]. Wetland flags were located by Hayner/Swanson, Inc. Wetlands were classified by GES utilizing the *Classification of Wetlands and Deepwater Habitats of the United States*[4]. The boundary was subsequently reviewed during the spring of 2017 in advance of local site plan review.

The wetland on the site consists of seasonally saturated, forested wetland dominated by red maple (PFO1E). This forested wetland type is. This type of forested wetland is common within the glacial till and boulder dominated landscape that characterizes the Continental Drive area. It can found on all the adjoining lots, often in close proximity to the road or to existing industrial development. These wetlands lie upgradient and distinctly separate from the very poorly drained marshes, shrub thickets, and swamps that form the heart of the Little River wetland complex which lies off-site to the west. There are no vernal pools or streams on the site.

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[1] Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station: NTIS No. AD A176 912.
[2] NH Code Admin. R. [Wt] Ch. 100-800.
[3] New England Hydric Soils Technical Committee. 2004. 3rd ed., Field Indicators for Identifying Hydric Soils in New England. Lowell, MA: New England Interstate Water Pollution Control Commission.
[4] Cowardin, L. M., 1979. Classification of Wetlands and Deepwater Habitats in the United States. Washington, D.C.: U.S. Department of the Interior, Fish and Wildlife Service.

2.1 Wetland Function and Value

The function of the wetlands on the site is limited to modest wildlife habitat and maintenance of water quality in the watershed, essentially acting as a buffer to the more sensitive wetlands near the Little River. The wildlife habitat value of the wetlands on the site is very similar to that of the surrounding uplands since there are no vernal pools or surface water which would elevate the habitat value of these forested wetlands. The true wetland related habitat value lies within the Little River and its floodplain. Since impacts are located far upgradient of these areas and stormwater management systems will be designed to protect water quality, the proposed impacts will have negligible, if any effect on the overall functions and values of the wetland areas which will remain intact and largely offsite.

3.0 Project Description and Impacts

The proposed project is to construct a 1-story, 116,288 square-foot, light industrial and distribution facility on an existing lot with the Garrison Glen Industrial Park. The project includes associated access, parking, and loading areas for three tenants. A stormwater management system, fully compliant with AOT standards, is proposed to manage drainage on the site.

The project involves a total of 4,950 square feet of direct wetland impact at two separate locations. These direct impacts are to a small area of isolated wetland and wetland finger extending into the uplands from the main body of the wetland.

3.1 Wt 302.01 Statement of Purpose

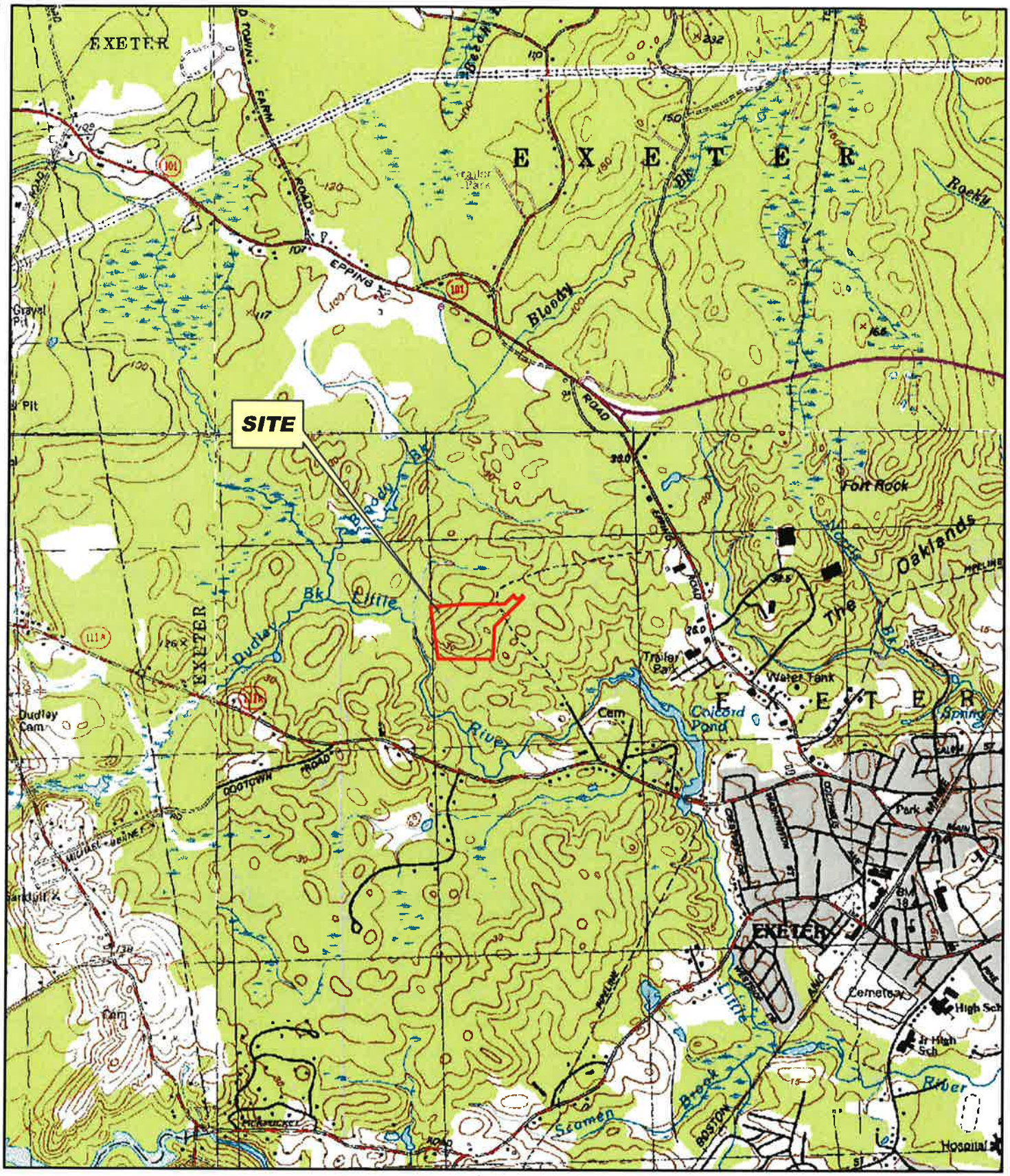
The purpose of the proposed project is to construct a light industrial and distribution facility on an existing lot with the Garrison Glenn Industrial Park. The project site is also within Exeter Tax Increment Financing (TIF) district in which the Town is supporting development.

3.2 Wt 302.03 Avoidance & Minimization

Industrial development of this type, which was specifically envisioned for this industrial park, requires a contiguous block of land on which to situate large warehouse type building with adequate paved access, parking, and loading areas. This does not allow for significant layout adjustment to avoid wetland impacts. This site is also constrained by the Little River and Protected Shoreland to the west and the need to utilize the developed access driveway and utilities extending from the Continental Drive cul-de-sac.

The building has therefore been located on the central upland portion of the site, utilizing the existing access drive and avoiding the more sensitive steep slopes within the protected shoreland of the Little River to the greatest extent possible. This limits direct wetland impacts to two small areas at the margins of the forested wetland surrounding the buildable upland. These impacts have been minimized through the use of steep grading. This represents the least impacting alternative in terms of total area and functional value.

Figures



1 inch = 2,000 feet

Locus Map

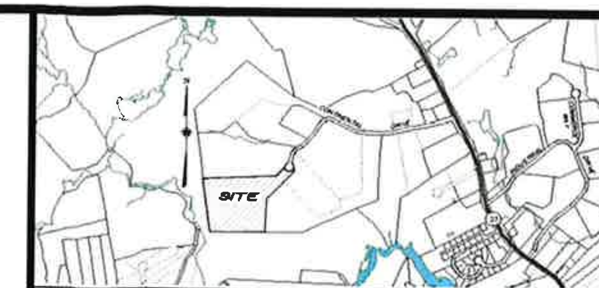
24 Continental Dr
Exeter, NH

Gove Environmental Services, Inc.
8 Continental Drive, Bldg 2 Unit H, Exeter NH 03833 603.778.0644

CONSULTANT CONTACTS

HAYNER/SWANSON, INC.
ATTN: JAMES N. PETROPULOS, P.E.
3 CONGRESS STREET
NASHUA, NH 03062
(603) 883-2057

GOVE ENVIRONMENTAL SERVICES:
ATTN: JAMES GOVE
8 CONTINENTAL DRIVE
EXETER, NH 03833
(603) 778-0644



THIS IS TO CERTIFY THAT THE WETLANDS HAVE BEEN DELINEATED IN ACCORDANCE WITH THE WITH THE U.S. ARMY CORPS OF ENGINEERS JANUARY 2012 REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST (REGION 2).

WETLAND DELINEATION PREPARED BY:
GOVE ENVIRONMENTAL SERVICES
BRENDAN J. QUIGLEY
CERTIFIED WETLAND SCIENTIST (#249)

STATE OF NEW HAMPSHIRE · BRENDAN J. QUIGLEY · No. 249 · CERTIFIED WETLAND SCIENTIST
8-8-19

IMPACT INFORMATION

AREA	WETLAND IMPACT (SF)	NHDES SHORELAND IMPACT (SF)
A	2,615	N/A
B	2,335	N/A
C	N/A	1,470
TOTAL	4,950	1,470

NOTES:

1. TOTAL SITE AREA — 20.687 ACRES (901,145 SF)
2. PRESENT ZONING — **CT-1:** CORPORATE/TECHNOLOGY PARK-1
3. LOT NUMBERS REFER TO THE CITY OF EXETER ASSESSORS MAPS 46 AND 56
4. SITE IS TO BE SERVICED BY MUNICIPAL SEWER AND WATER BY EXETER PUBLIC WORKS. UNDERGROUND POWER, TELECOMMUNICATIONS AND GAS UTILITIES
5. PURPOSE OF PLAN
   TO SHOW NHDES SHORELAND PROTECTION AND WETLAND IMPACTS FOR THE PROPOSED PROJECT
6. OWNER OF RECORD
   LOT 3.1, MAP 56
   GARRISON GLEN, LLC
   141 MAIN STREET
   NASHUA, NEW HAMPSHIRE 03060
   VOL. 4404 PG 2738

NHDES SHORELAND PROTECTION AND WETLAND IMPACT PLAN
Proposed Multi-Tenant Light Industry/Distribution Facility
24 CONTINENTAL DRIVE
EXETER, NEW HAMPSHIRE

MAP 56 LOT 3.1
PREPARED FOR/RECORD OWNER:
GARRISON GLEN, LLC
141 MAIN STREET NASHUA, NEW HAMPSHIRE 03060 (603) 880-0502

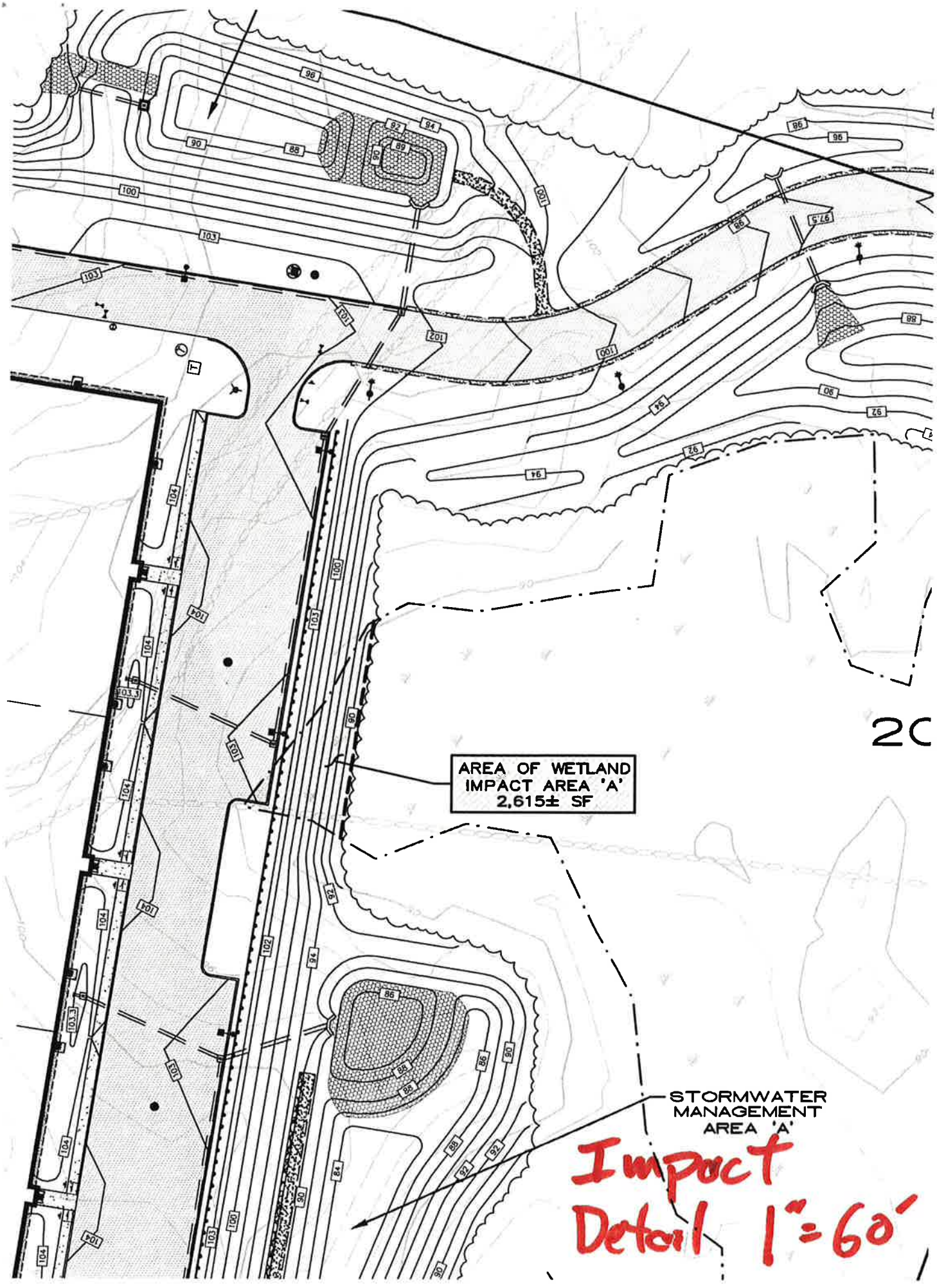
NO.	DATE	REVISION	BY

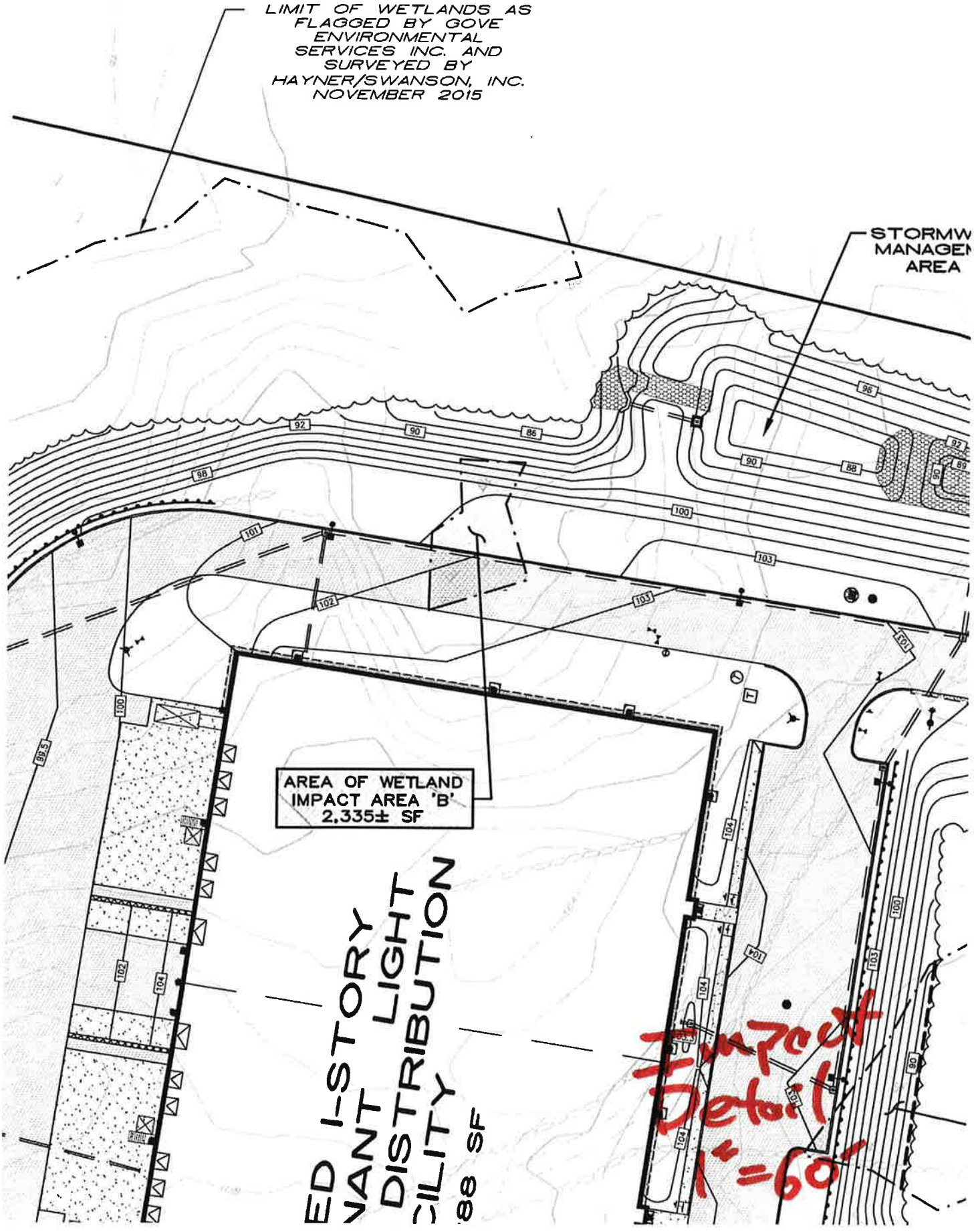
60 0 60 120 180 240 FEET

HSI Hayner/Swanson, Inc.
Civil Engineers/Land Surveyors
Three Congress Street Nashua, New Hampshire 03062
Tel (603) 883-2057 Fax (603) 883-5057
www.hayner-swanson.com

reduced

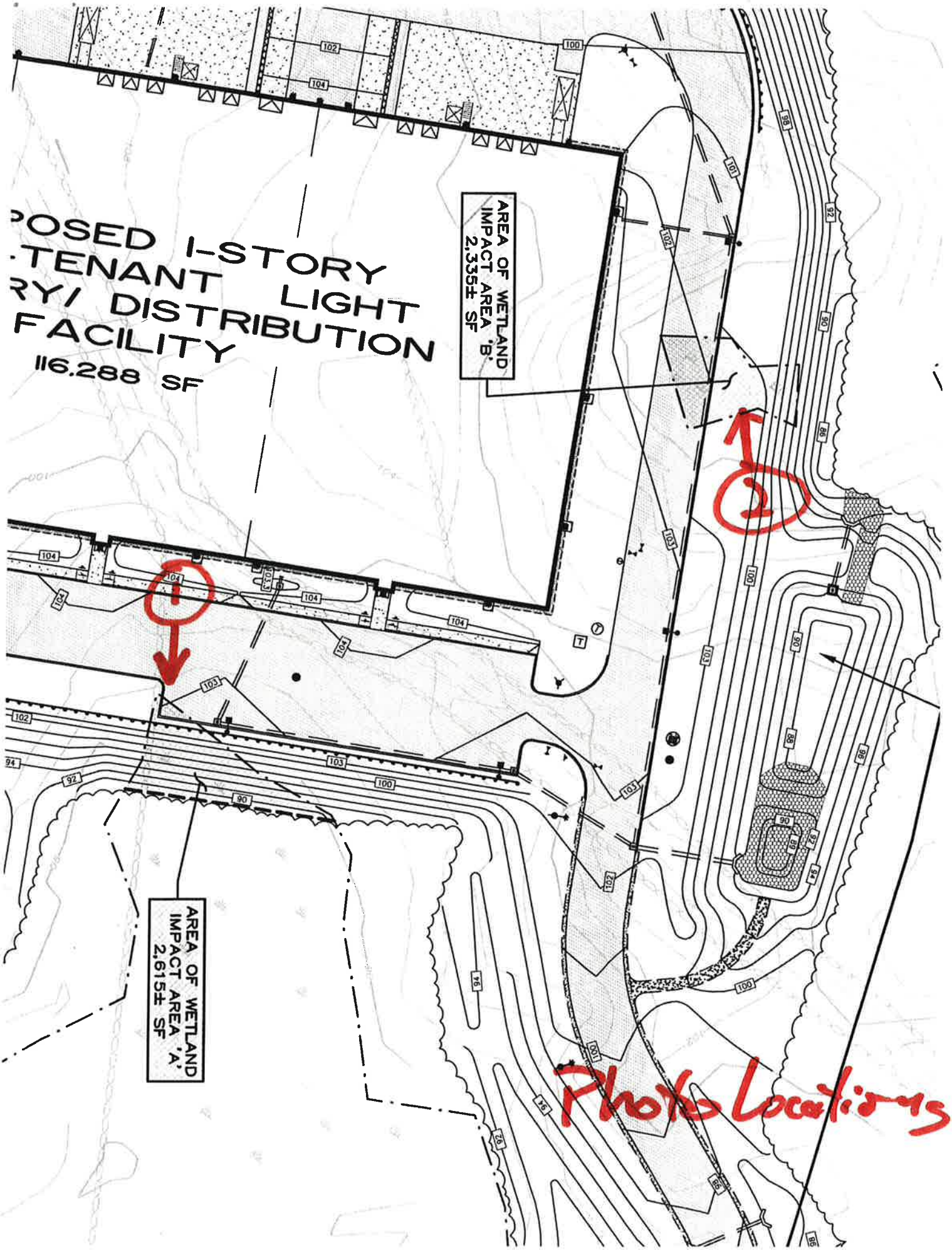
Scale 1" = 60'
1 OF 1
4891 SPEC
22 MAY 2019


AREA OF WETLAND
IMPACT AREA 'A'
2,615± SF
STORMWATER
MANAGEMENT
AREA 'A'
Impact
Detail 1"=60'


LIMIT OF WETLANDS AS FLAGGED BY GOVE ENVIRONMENTAL SERVICES INC. AND SURVEYED BY HAYNER/SWANSON, INC. NOVEMBER 2015
STORMW
MANAGE
AREA
AREA OF WETLAND IMPACT AREA 'B' 2,335± SF
ED 1-STORY
VANT LIGHT
DISTRIBUTION
CILITY
88 SF
Enlarged Detail
1"=60'

Appendix A

Impact Area Photos


POSED 1-STORY
TENANT LIGHT
RY/ DISTRIBUTION
FACILITY
116,288 SF
AREA OF WETLAND
IMPACT AREA 'B'
2,335± SF
AREA OF WETLAND
IMPACT AREA 'A'
2,615± SF
Photo locations

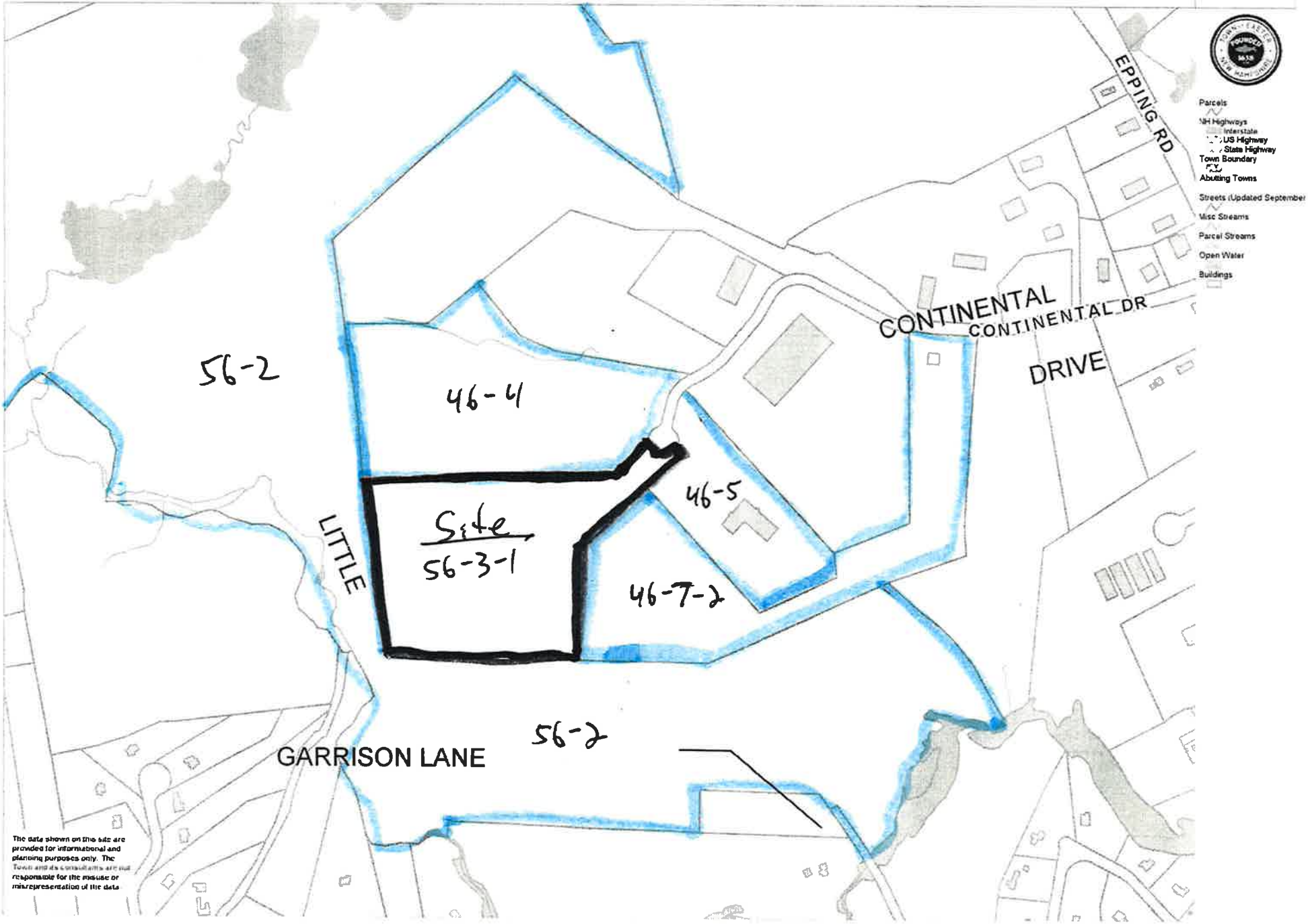
Impact Area Photos
Light Industrial/Distribution Center Development
24 Continental Drive
Exeter, NH

Photo 1: Impact Area A

Photo 2: Impact Area B

Appendix B

Abutter Information


EPPING RD
CONTINENTAL
CONTINENTAL DR
DRIVE
56-2
46-4
46-5
Site
56-3-1
46-7-2
LITTLE
GARRISON LANE
56-2
Parcels
NH Highways
Interstate
US Highway
State Highway
Town Boundary
Abutting Towns
Streets (Updated September
Misc Streams
Parcel Streams
Open Water
Buildings
The data shown on this site are provided for informational and planning purposes only. The Town and its consultants are not responsible for the misuse or misrepresentation of the data
0
800
1600 ft
Printed on 05/31/2018 at 11:02 AM
Exeter MapsOnline

ABUTTER LIST

SITE:

56-3-1	Garrison Glen, LLC 20 Trafalga Sq, Suite 610 Nashua, NH

ABUTTERS:

46-4	Garrison Glen, LLC 20 Trafalga Sq, Suite 610 Nashua, NH 03063
46-5	Continental Microwave, Inc. 11 Continental Drive Exeter, NH 03833
46-7-2	O'Niel Warehouse Co. LLC 7 Portwalk Place Unit #1223 Portsmouth, NH 03801
56-2	Town of Exeter 10 Front Street Exeter, NH 03833

7016 3010 0001 1504 7264

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Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

Total
$

Sent
Street
City

JUN - 7 2018
Postmark Here

O'Niel Warehouse Co. LLC
7 Portwalk Place Unit #1223
Portsmouth, NH 03801

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7016 3010 0001 1504 7233

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- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
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JUN - 7 2018
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Town of Exeter
10 Front Street
Exeter, NH 03833

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7016 3010 0001 1504 7257

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- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

JUN - 7 2018
Postmark Here

Continental Microwave, Inc.
11 Continental Drive
Exeter, NH 03833

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7016 3010 0001 1504 7240

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- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

JUN - 7 2018
Postmark Here

Garrison Glen, LLC
20 Trafalga Sq, Suite 610
Nashua, NH 03063

June 7, 2018

«Name»
«Street»
«TownStateZip»

Re: 24 Continental Drive
Map 56 Lot 3.1
Exeter, NH

Dear Abutter:

The purpose of this letter is to inform you that Garrison Glen, LLC has submitted a Dredge and Fill Application to the NH Department of Environmental Services for a development project located at 24 Continental Drive in Exeter, NH, Tax Map 56 Lot 3.1. DES requires this notice for work within a wetland area. After filing, a copy of the final Application, including plans, will be made available for your review at the Exeter Town Hall and at the NH Department of Environmental Services Wetlands Bureau, 29 Hazen Drive, in Concord.

If you have any questions that we might be able to answer, please feel free to contact our office.

Sincerely,

Brendan Quigley, CWS
Gove Environmental Services, Inc.

Appendix C

New Hampshire Natural Heritage Inquiry

NEW HAMPSHIRE NATURAL HERITAGE BUREAU
NHB DATACHECK RESULTS LETTER

To: Tom Zajac, Hayner/Swanson, Inc.
3 Congress Street
Nashua, NH 03054

From: NH Natural Heritage Bureau

Date: 5/29/2018 (valid for one year from this date)

Re: Review by NH Natural Heritage Bureau of request submitted 5/23/2018

NHB File ID: NHB18-1584 **Applicant:** Tom Zajac

Location: Exeter
Tax Maps: Map 56, Lot 3.1

Project Description: It is proposed to construct a 1-story, 116,288+/- SF multi-tenant light industry/distribution facility along with accompanying site improvements.

The NH Natural Heritage database has been checked by staff of the NH Natural Heritage Bureau and/or the NH Nongame and Endangered Species Program for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government.

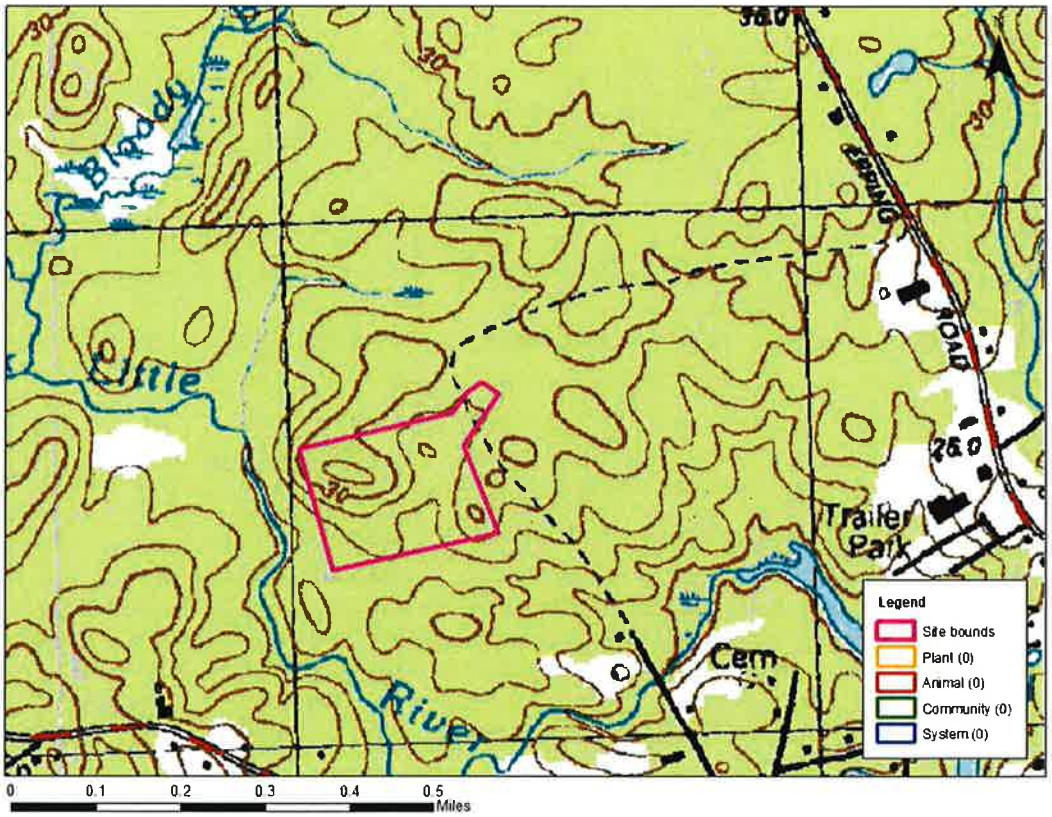
It was determined that, although there was a NHB record (e.g., rare wildlife, plant, and/or natural community) present in the vicinity, we do not expect that it will be impacted by the proposed project. This determination was made based on the project information submitted via the NHB Datacheck Tool on 5/23/2018, and cannot be used for any other project.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

MAP OF PROJECT BOUNDARIES FOR: **NHB18-1584**

NHB18-1584



Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

Appendix D

State Historic Preservation Office Inquiry

Please mail the completed form and required material to:

New Hampshire Division of Historical Resources
State Historic Preservation Office
Attention: Review & Compliance
19 Pillsbury Street, Concord, NH 03301-3570

RECEIVED
NOV 15 2017

DHR Use Only
R&C # 9160
Log In Date 11/15/17
Response Date 11/27/17
Sent Date 11/27/17

RECEIVED
DEC 05 2017
BY:

Request for Project Review by the New Hampshire Division of Historical Resources

☒ This is a new submittal
☐ This is additional information relating to DHR Review & Compliance (R&C) #:

GENERAL PROJECT INFORMATION

Project Title Light Industry/ Distribution Facility

Project Location 24 Continental Drive

City/Town Exeter Tax Map 56 Lot # 3.1

NH State Plane - Feet Geographic Coordinates: Easting 1166740 Northing 179892
(See RPR Instructions and R&C FAQs for guidance.)

Lead Federal Agency and Contact *(if applicable)* ACOE
(Agency providing funds, licenses, or permits)
Permit Type and Permit or Job Reference # 404-PGP

State Agency and Contact *(if applicable)* NHDES

Permit Type and Permit or Job Reference # Dredge and Fill

APPLICANT INFORMATION

Applicant Name Garrison Glenn LLC C/O Thomas Monaham

Mailing Address 141 Main Street Phone Number

City Nashua State NH Zip 03060 Email Thomasfmanahan@hotmail.com

CONTACT PERSON TO RECEIVE RESPONSE

Name/Company Brendan Quigley

Mailing Address 8 Continental Drive, Bldg 2, Unit H Phone Number 6037780644

City Exeter State NH Zip 03833 Email bquigley@gesinc.biz

This form is updated periodically. Please download the current form at www.nh.gov/nhdhr/review. *Please refer to the Request for Project Review Instructions for direction on completing this form.* Submit one copy of this project review form for each project for which review is requested. Include a self-addressed stamped envelope to expedite review response. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: www.nh.gov/nhdhr/review or contact the R&C Specialist at christina.st.louis@dcr.nh.gov or 603.271.3558.

PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION

Project Boundaries and Description

- ☒ Attach the relevant portion of a 7.5' USGS Map (photocopied or computer-generated) ***indicating the defined project boundary.*** *(See RPR Instructions and R&C FAQs for guidance.)*
- ☒ Attach a detailed narrative description of the proposed project.
- ☒ Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- ☒ Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) *(Informative photo captions are requested.)*
- ☒ A DHR file review must be conducted to identify properties within or adjacent to the project area. Provide file review results in **Table 1.** *(Blank table forms are available on the DHR website.)* File review conducted on **07/13/2017**.

Architecture

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the project area? ☒ Yes ☐ No
If no, skip to Archaeology section. If yes, submit all of the following information:

Approximate age(s): no buildings, Stone walls thought to be 1700's (see narrative)

- ☒ Photographs of ***each*** resource or streetscape located within the project area, with captions, along with a mapped photo key. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- ☐ If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide additional photographs showing detailed project work locations. (i.e. Detail photo of windows if window replacement is proposed.)

Archaeology

Does the proposed undertaking involve ground-disturbing activity? ☒ Yes ☐ No
If yes, submit all of the following information:

- ☒ Description of current and previous land use and disturbances.
- ☒ Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.

DHR Comment/Finding Recommendation *This Space for Division of Historical Resources Use Only*

☐ Insufficient information to initiate review. ☐ Additional information is needed in order to complete review.

☐ No Potential to cause Effects ☑ No Historic Properties Affected ☐ No Adverse Effect ☐ Adverse Effect

Comments: Please delete this outdated 2014 RPR form and use the newest form available on our web site for future submissions.

Also - please take care to enter coordinates and all data accurately.

Thank You

If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation.

Authorized Signature: Richard Boisvert DSHPO Date: 11-22-17

Appendix E

ACOE Supplemental Information Form

US Army Corps of Engineers®
New England District

New Hampshire General Permits (GPs)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to "work" include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See GC 5, regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*	X	
2. Wetlands	**Yes**	**No**
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?		X
2.2 Are there proposed impacts to SAS, special wetlands. Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) DataCheck Tool for information about resources located on the property at https://www2.des.state.nh.us/nhb_datacheck/. The book Natural Community Systems of New Hampshire also contains specific information about the natural communities found in NH.		X
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	NO crossings NA	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		X
2.5 The overall project site is more than 40 acres?		X
2.6 What is the area of the previously filled wetlands?	~ 0 U.K.	
2.7 What is the area of the proposed fill in wetlands?	4,950	
2.8 What is the % of previously and proposed fill in wetlands to the overall project site?	~ 0.5%	
3. Wildlife	**Yes**	**No**
3.1 Has the NHB & USFWS determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require an NHB ID number & a USFWS IPAC determination.) NHB DataCheck Tool: https://www2.des.state.nh.us/nhb_datacheck/ USFWS IPAC website: https://ecos.fws.gov/ipac/location/index	X	

NLEB/SWP, No State Listed

3.2 ~~Would work occur in any area identified~~ as either "Highest Ranked Habitat in N.H." or "Highest Ranked Habitat in Ecological Region"? (These areas are colored magenta and green, respectively, on NH Fish and Game's map, "2010 Highest Ranked Wildlife Habitat by Ecological Condition.") Map information can be found at: • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.	X	
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?	X	
3.5 Are stream crossings designed in accordance with the GC 21? No Stream Crossings	NA	
4. Flooding/Floodplain Values	**Yes**	**No**
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?		X
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?	NA	
5. Historic/Archaeological Resources		
For a minimum, minor or major impact project - a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) with your DES file number shall be sent to the NH Division of Historical Resources as required on Page 11 GC 8(d) of the GP document**	X	

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.
** If your project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.

Appendix F

Site Plans

(under separate cover)

Appendix G

Function & Value Forms

Wetland Function-Value Evaluation Form

Total area of wetland: .75 ac. Human made? NO Is wetland part of a wildlife corridor? yes or a 'habitat island'? NO

Adjacent land use Woodlot / Industrial Distance to nearest roadway or other development ~850'

Dominant wetland systems present PFO1E Contiguous undeveloped buffer zone present NO

Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? Mid

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland ID: Impact Area A

Latitude Longitude

Prepared by: BQ Date 5-31-18

Wetland Impact:

Type Fill Area 2,615

Evaluation based on:

Office ✓ Field ✓

Corps manual wetland delineation completed? (Y) N

Function/Value	Occurrence Y/N	Rationale (Reference #)*	Principal Function/Value(s)	Comments
Groundwater Recharge/Discharge	N			dense till soil
Floodflow Alteration	N			little storage, no significant input
Fish and Shellfish Habitat	N			No suitable water body or stream
Sediment/Toxicant Retention	Y	7,5,4,3,1	✱	Moderate function for Little River
Nutrient Removal	Y	3,4,5,7,8,9	✱	↓same
Production Export	Y	1,3,4		Mast, berries, seeds, flowers, limited by lack of habitat
Sediment/Shoreline Stabilization	N			no waterbody
Wildlife Habitat	Y	7,8		current logged state and proximity to Rd.
Recreation	N			Private, common woodland
Educational/Scientific Value	N			common forest type
Uniqueness/Heritage	N			common forest type
Visual Quality/Aesthetics	N			common forest type, not diverse
Endangered Species Habitat	N			none identified
Other				

Notes:

*Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2,335 SF Human made? N Is wetland part of a wildlife corridor? yes or a "habitat island"? no

Adjacent land use Woodlot/Road/commercial Distance to nearest roadway or other development ~1000'

Dominant wetland systems present PFO1E Contiguous undeveloped buffer zone present yes

Is the wetland a separate hydraulic system? yes If not, where does the wetland lie in the drainage basin? High

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Impact Area B

Latitude _____ Longitude _____

Prepared by: BCQ Date 5-31-18

Wetland Impact: Type Fill Area 2,335

Evaluation based on: Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			Dense Till
Floodflow Alteration	N			Isolated wetlands, no watercourse
Fish and Shellfish Habitat	N			NO water course
Sediment/Toxicant Retention	N			Isolated
Nutrient Removal	N			Isolated
Production Export	Y	1		Mast, berries, seed. Limited since isolated
Sediment/Shoreline Stabilization	N			No water course or waterbody
Wildlife Habitat	Y	7, 8,	*	Very modest, not wetland specific
Recreation	N			Private, common woodlot
Educational/Scientific Value	N			common forest type
Uniqueness/Heritage	N			common forest type
Visual Quality/Aesthetics	N			common forest in industrial area
ES Endangered Species Habitat	N			none identified
Other				

Notes:

* Refer to backup list of numbered considerations.

Natural Resources Plan

Of

Exeter Rose Farm, LLC
Assessors Tax Map 54 / Lots 5-7 and Tax Map 63 / Lot 205
Oak Street Extension
Exeter, NH

Prepared for

Exeter Rose Farm, LLC
953 Islington Street, Suite 23D
Portsmouth, NH 03801

By

Marc E. Jacobs
Certified Wetland & Soil Scientist
P.O. Box 417
Greenland, NH 03840-0417

Revised May 31, 2018

Natural Resources Plan
Exeter Rose Farm, LLC
Oak Street Extension
Exeter, NH

1.0 Introduction

Pursuant to the request by the Exeter Rose Farm, LLC to the Town of Exeter, New Hampshire for subdivision approval involving work within wetlands and, more specifically, the Wetland Conservation District (Zoning Article 9 - §9.1.6.C) at the above-referenced location off of Oak Street Extension in Exeter, NH, specifically Assessors Map 54 – Lots 5-7 and Map 63 – Lot 205, we herewith submit this Natural Resources Plan to supplement the application as required under Town of Exeter, New Hampshire – Site & Subdivision Regulations – Section 9.8 – Natural Resources. This plan also references the following sections of the regulations:

8.4 General Standards – Character of Land
8.6 General Standards – Protection of Environmental Quality
8.8 General Standards – Preservation of Natural Features
8.9 General Standards – Landscaping and Tree Planting
9.6.2 Green Space: Natural Features

This report provides an inventory of natural resources at this location and an analysis of impacts that can be anticipated from the proposed subdivision according to the regulations above. We note that there is considerable duplication between the various sections referenced above and have attempted to consolidate where possible. Also, the regulations mix site characterization and inventory with impact analysis so we have addressed these issues together where they appear in the regulations together.

Attached is a copy of a composite 7.5 X 15 Minute United States Geological Survey Quadrangle(s) on which is depicted the approximate location of the subject property. Digital images and associated descriptions are also attached to this report. Refer to Exhibit 1.

2.0 Existing Conditions

The site is 49.95 acres in size and bounded to the east by active railroad tracks, to the north by the Henderson-Swasey Town Forest belonging to the Town of Exeter, to the west by developed industrial lands (Industrial Drive and Commerce Way) as well as Norris Brook Condominiums and to the south by densely developed residential neighborhoods of single-family homes. A large gas main bisects the western tip of the property.

Historic land uses at this location included a brick yard and later, rose growing greenhouses and packing facilities as well as residential housing. Significant portions of the site, including wetlands, have been altered and some areas are contaminated with lead, coal ash and solid waste associated with the prior land uses. Numerous man-made wetlands and retention ponds exist as a result of excavation and other earth moving activities. The man-made retention pond located east of and adjacent to Oak Street Extension, between the spring house and the pump house described below, was created by excavation and impoundment. The impoundment consists of a poured

concrete weir structure installed across Norris Brook. The concrete structure has been partially breached due to erosion at the south end. The dredge spoils from pond excavation are stockpiled on the south side of the pond in what were likely wetlands before they were filled. The retention pond contains a large plume of sediment from upstream. It does not appear that this pond was used for irrigation. The man-made retention ponds located north of Oak Street Extension captured runoff from the greenhouses. The runoff collected in the largest retention pond was then reused for irrigation. The hydrant along Oak Street Extension indicates that this retention pond also serves as fire protection.

The property is partially developed with 9 existing residential dwellings (5 of which are currently occupied) and several garages / outbuildings that are accessed by Oak Street Extension, which is in significant disrepair. The concrete structure that formerly housed the rose packing operation and possibly the heating system also remains. Areas of the property that formerly housed the greenhouse operations are now generally vegetated with fields that have a shrub / sapling component dominated by black locust (*Robinia pseudoacacia*). When the greenhouses were dismantled the concrete slabs were bulldozed and partially buried / exposed remnants of the concrete slabs as well as piping and other materials can be seen throughout the area and remain a significant hazard to pedestrians, especially when occasional subsurface cavities are encountered. Remaining areas of the property are generally forested with a mix of softwood and hardwood tree species dominated by oak, pine and maple. Norris Brook, a perennial stream, runs along and through portions of the property. Another unnamed perennial stream (according to some sources) and two unnamed intermittent streams as well as numerous groundwater seeps (owing to surficial geology and site soils) also drain the property and all are tributary to Norris Brook within the confines of the site. Norris Brook eventually drains to the Squamscott River, which is tidally influenced at this juncture. The influence of the normal tidal cycle does not extend to the subject properties. Most streams within the property sustain associated wetlands. There are numerous mountain bicycle trails throughout the property. A gas line/easement, 35-feet in width, traverses the western tip of the property along Norris Brook. There is a spring house on the property, along Oak Street Extension, near Forest Street, which is visited frequently by residents of the town. Water is provided to the existing homes on the subject property from the spring via a pump house (which is located adjacent to Oak Street Extension, between Oak Street Extension and aforementioned impoundment / pond). The existing homes are served by individual sewage disposal systems of unknown origin and status.

There are no prime wetlands on or immediately adjacent to the subject property. Prime wetlands are those wetlands with higher functions and values and receive additional protection under state law. Exeter has municipally designated prime wetlands recognized by NHDES.

3.0 Proposed Conditions

The project proposes an open space development with construction of 2,917± linear feet (LF) of new roadway, servicing approximately thirty-seven (37) new single-family homes as well as seven (7) other dwelling units. (The project has received constructive input from the Planning Board since the April version of this document was released so this figure represents a decrease in impervious surface of 871 LF or approximately 30 percent from the previous plan submission.) The proposed project will be serviced by municipal water and sewer utilities. Portions of the site which are contaminated with lead, coal ash and solid waste are proposed to be remediated during development. The project proposes to relocate the existing trail that traverses the western end of

the property. The project is also proposing 26± acres of open space (approximately 52 percent of the total property area) not including neighborhood recreation areas. The project will be covered by a Home Owners Association (HOA), which will be responsible for management of the open space and spring in perpetuity.

4.0 Inventory

We provide the following inventory of natural resources as per Section 9.8.1.1

Air quality

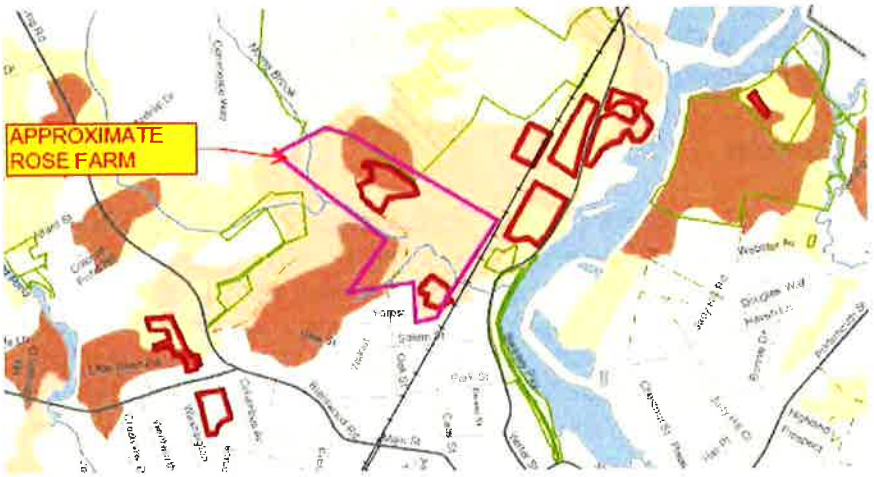
Air quality is generally good. There are no known air pollution sources on the site. Passing trains create significant diesel emissions which can adversely impact air quality. The industrial park is located just west of the site but we are not aware of any unique or unusual emissions that pose any problems for the subject property.

Soils

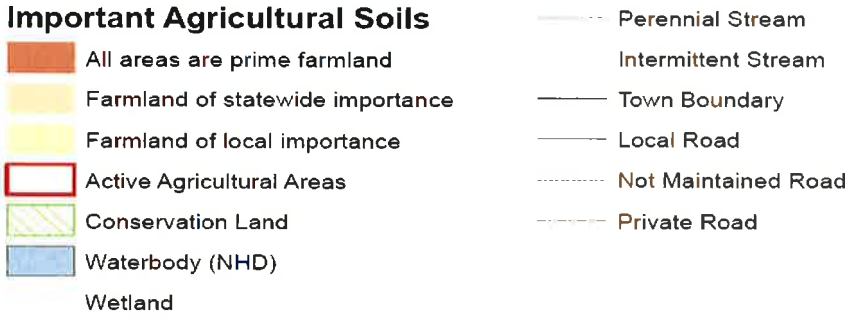
The soils have been surveyed using intensive on-the-ground investigations conducted by this office as per town regulations and a soil survey map has been prepared, a copy of which is attached as Exhibit 2. The highest elevations at the subject property generally involve a mantle of sandy soils which are underlain by dense marine sediments, dominated by silt and clay textures, which are slowly permeable. Intermediate elevations generally possess moderately well drained soils dominated by marine sediments. Low lying areas and wetlands generally possess poorly drained hydric mineral soils and correspond closely to jurisdictional wetland areas, which have been identified, delineated and surveyed previously according to town, state and federal regulations and are depicted on site plans prepared on behalf of the project by the surveyor of record.

According to the Natural Resource Inventory prepared on behalf of the town, the subject property contains prime agricultural farmland, farmland of statewide importance and active agricultural areas. See Figure 1 below as well as the associated legend on page 5.

Figure 1



MAP 3. AGRICULTURAL RESOURCES



North of Norris Brook those resources largely coincide with the portion of the site where the greenhouse operations formerly existed. This area is contaminated with lead and is the subject of a Remedial Action Plan which is currently under review by the state. The greenhouses were apparently bulldozed in the 1970's and the area is pervaded with the remains of concrete slabs and other debris which would make tillage of these soils for agricultural purposes impossible without prior removal of the slabs. South of Norris Brook, the active agricultural area depicted is a fallow field. Horses, sheep, goats and cows were grazed in this area but it has been approximately 30+ years since this activity ceased.

Vegetation

The following is a list of commonly observed vegetation. Some tree species can be found growing as shrubs or saplings as well.

Trees

White pine	*Pinus strobus*
Red Maple	*Acer rubrum*
American beech	*Fagus grandifolia*
Poplar	*Populus* sp.
American elm	*Ulmus americana*
White ash	*Fraxinus americana*
Gray birch	*Betula populifolia*
Black birch	*Betula lenta*
Yellow birch	*Betula alleghaniensis*
Black cherry	*Prunus serotina*
Eastern hemlock	*Tsuga canadensis*
Shagbark hickory	*Carya ovata*
Black locust	*Robinia pseudoacacia*
Box elder	*Acer negundo*
Northern Red oak	*Quercus rubra*
Black oak	*Quercus velutina*
White oak	*Quercus alba*
Hophornbeam	*Ostrya virginiana*

Shrubs / Saplings

Apple	*Malus* sp.
Red-osier dogwood	*Cornus sericea*
Red-panicled dogwood	*Cornus racemosa*
Silky dogwood	*Cornus amomum*
Bunchberry	*Cornus canadensis*
Elderberry	*Sambucus canadensis*
Honeysuckle	*Lonicera* sp.*
Ironwood	*Carpinus caroliniana*
Speckled alder	*Alnus rugosa*
Staghorn sumac	*Rhus typhina*
Wild raisin	*Viburnum cassanoides*
Arrowwood	*Viburnum dentatum*
Autumn olive	*Elaeagnus umbellata**
Glossy buckthorn	*Frangula alnus**
Common buckthorn	*Rhamnus cathartica**
Meadowsweet	*Spiraea latifolia*
Willow	*Salix* sp.
Burning bush	*Euonymus alatus**
Winterberry	*Ilex verticillata*
Japanese barberry	*Berberis thunbergii**
Highbush blueberry	*Vaccinium corymbosum*
Witch hazel	*Hamamelis virginiana*
Multi-flora rose	*Rosa multi-flora**
Maleberry	*Lyonia ligustrina*

Herbs

Burdock	*Arctium minus*
Wood fern	*Dryopteris cristata*
Curley dock	*Rumex crispus*
Soft rush	*Juncus effusus*
Orchardgrass	*Dactylis glomerata*
Reed canary grass	*Phalaris arundinacea*
Tall fescue	*Festuca arundinacea*
Fine fescue	*Festuca* spp.
Ryegrass	*Lolium perenne*
Garlic mustard	*Alliaria petiolata**
Goldenrods	*Solidago* spp.
Queen Anne's lace	*Daucus carota*
Broad-leaved cat-tail	*Typha latifolia*
Sensitive fern	*Onoclea sensibilis*
Cinnamon fern	*Osmunda cinnamomea*
Royal fern	*Osmunda regalis*
Purple loosestrife	*Lythrum salicaria**
Jewelweed	*Impatiens capensis*
Japanese knotweed	*Polygonum cuspidatum**

Vines

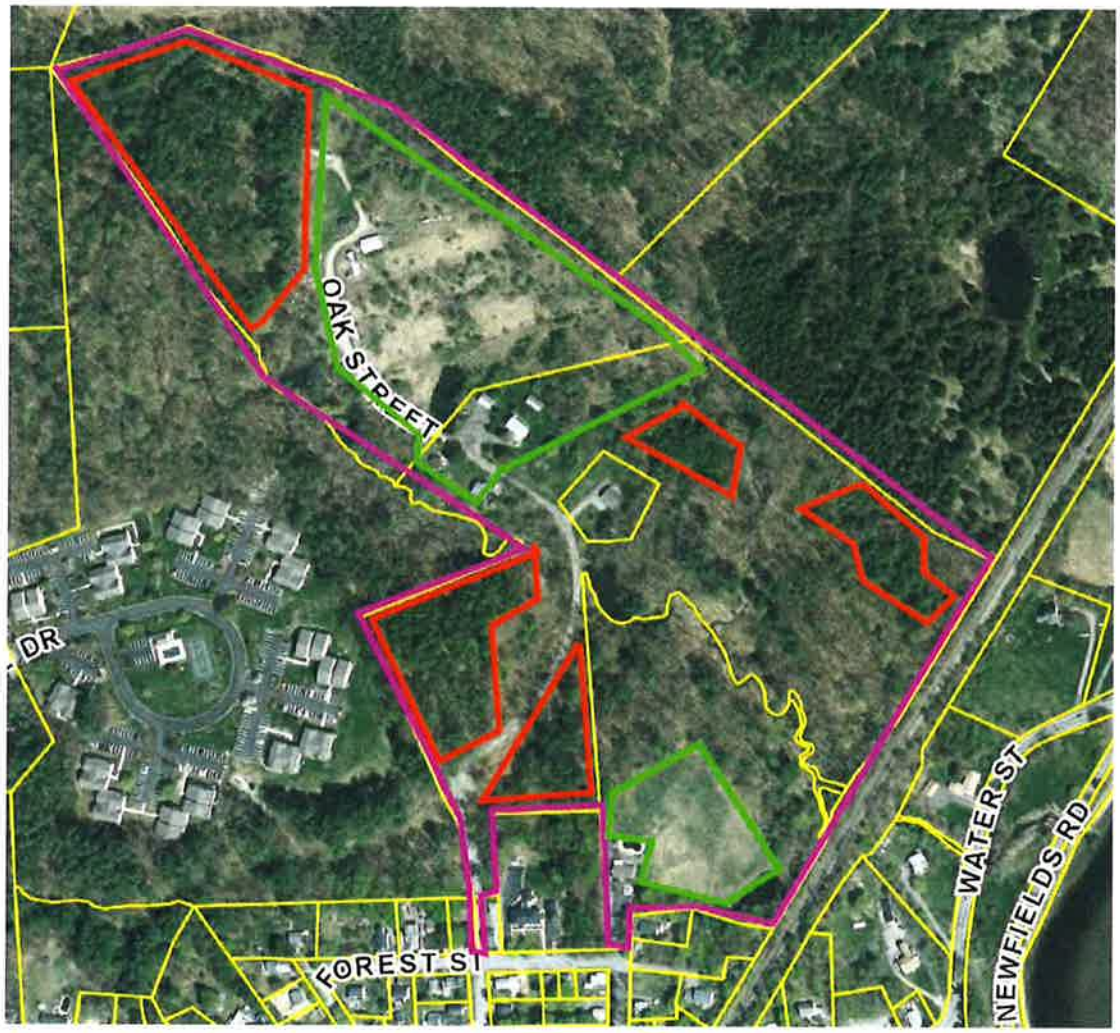
Grape	*Vitis* sp.
Poison ivy	*Toxicodendron radicans* (Also observed growing as a ground cover.)
Virginia creeper	*Parthenocissus quinquefolia*

Aquatic

Duckweed	*Lemna minor*

Additionally, we offer the 2015 aerial image from the town's GIS below. The approximate property line is identified in pink. In the image the former greenhouse locations are easily seen as are the areas of significant coniferous tree growth in dark green which we have outlined in orange. The approximate extent of areas that are open such as grassland and scrub-shrub growth are outlined in light green. The remainder is best characterized as forest dominated by hardwood or deciduous tree species. Refer to Figure 2 below as well as Exhibit 3 – Forested Areas Plan.

Figure 2



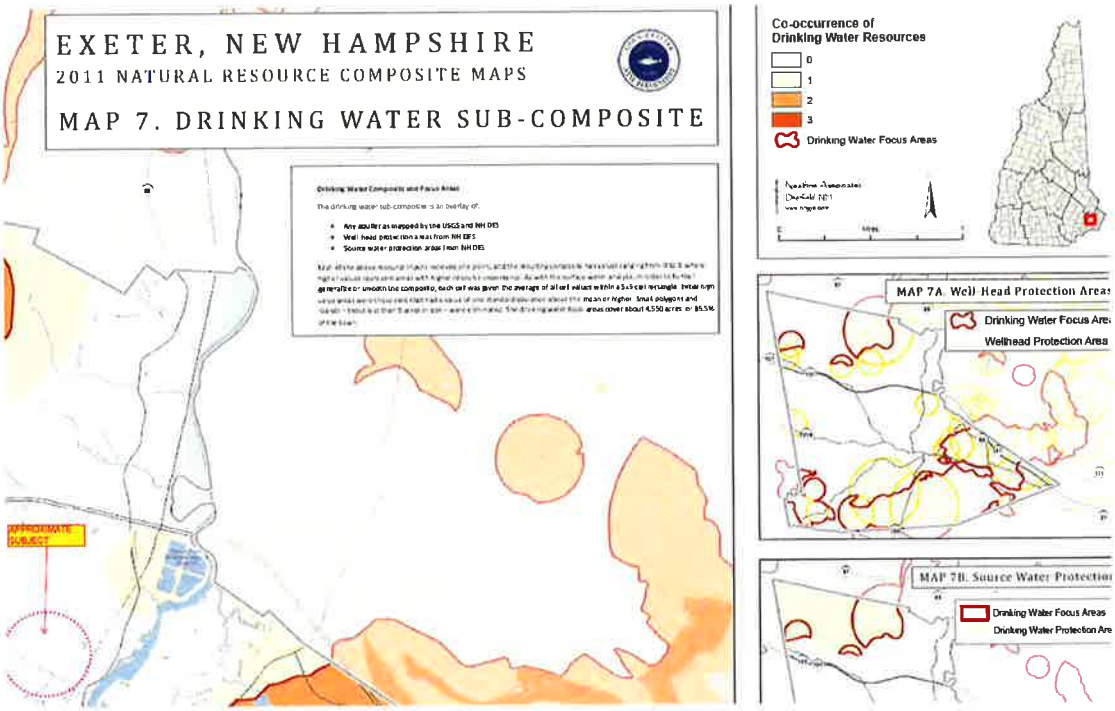
Mineral deposits

We interpret mineral deposit to be any deposits having significant economic value such as gem stones like tourmaline. We are unaware of any mineral deposits having significant economic value.

Water

We interpret water resources to refer to drinking water. Regarding surface water resources, the site is drained by Norris Brook, a perennial stream, and two intermittent streams. Regarding groundwater sources, the site is not underlain by any known stratified drift deposits and as such does not provide any groundwater aquifers. The site does not contain any drinking water focus areas according to the Natural Resources Inventory. Refer to Figure 3 below. The site soils result in the frequent occurrence of groundwater seeps and a widely known and frequently sourced spring exists adjacent to Oak Street Extension in the southern part of the site near Forest Street.

Figure 3



Wildlife

The following is a list of wildlife we have observed directly, or inferred from tracks, scat or other sign or whose images were captured using motion sensing wildlife cameras which were periodically monitored.

Birds

Pileated woodpecker	(*Dryocopus pileatus*) (audio confirmation)
Black-capped chickadee	(*Poecile atricapillus*)
American robin	(*Turdus migratorius*)

Blue jay	(*Cyanocitta cristata*)
Northern cardinal	(*Cardinalis cardinalis*) (audio confirmation)
American goldfinch	(*Carduelis tristis*)
Eastern blue bird	(*Sialia sialis*)
Dark-eyed junco	(*Junco hyemalis*)
Wild turkey	(*Melleagris gallopavo*) (tracks)
Red-tailed hawk (overhead)	(*Buteo jamaicensis*) (audio and visual confirmation)
Turkey vulture (overhead)	(*Cathartes aura*)
Mallard	(*Anas platyrhynchos*)
Owl (Barred most likely)	(*Strix varia*) (images)

Mammals

Gray squirrel	(*Sciurus carolinensis*)
Raccoon	(*Procyon lotor*) (tracks)
White-tail deer	(*Odocoileus virginianus*) (tracks, scat, images)
Eastern coyote	(*Canis latrans*)
Woodchuck	(*Marmota monax*)

Reptiles

Turtle	(No positive identification)

Wildlife Habitat

According to the Natural Resources Inventory – Map 2, the site contains several wildlife habitats including grassland, floodplain forest and Appalachian oak-pine forest. Refer to Figures 4 and 5 below. The grassland appears to be slightly under represented on Figure 4 while the oak-pine forest appears to be over represented. It is important to keep the small scale of the Natural Resources Inventory maps in mind when evaluating this information. The floodplain forest depicted in Figure 4 corresponds reasonably well with field conditions we have observed including the wetlands between the impoundment east of Oak Street Extension and the railroad tracks (Refer to the 'green' study area in the Functional Wetland Evaluation.)

Figure 4 Floodplain Forest (Exeter Natural Resource Inventory – Map 2)

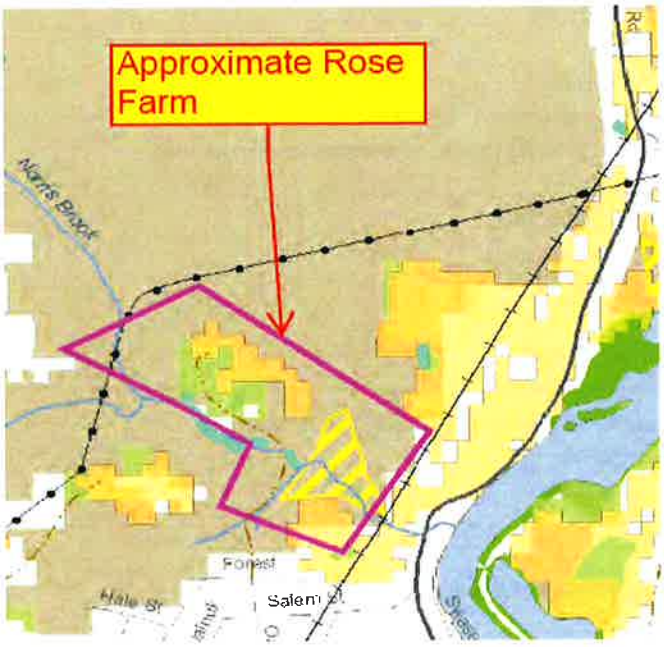
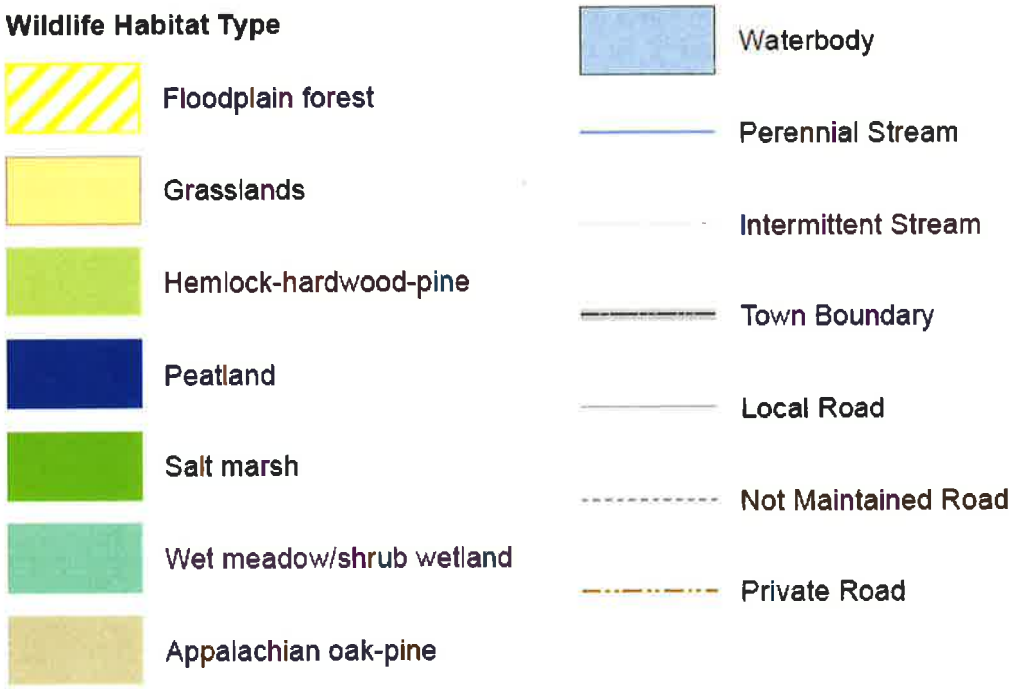


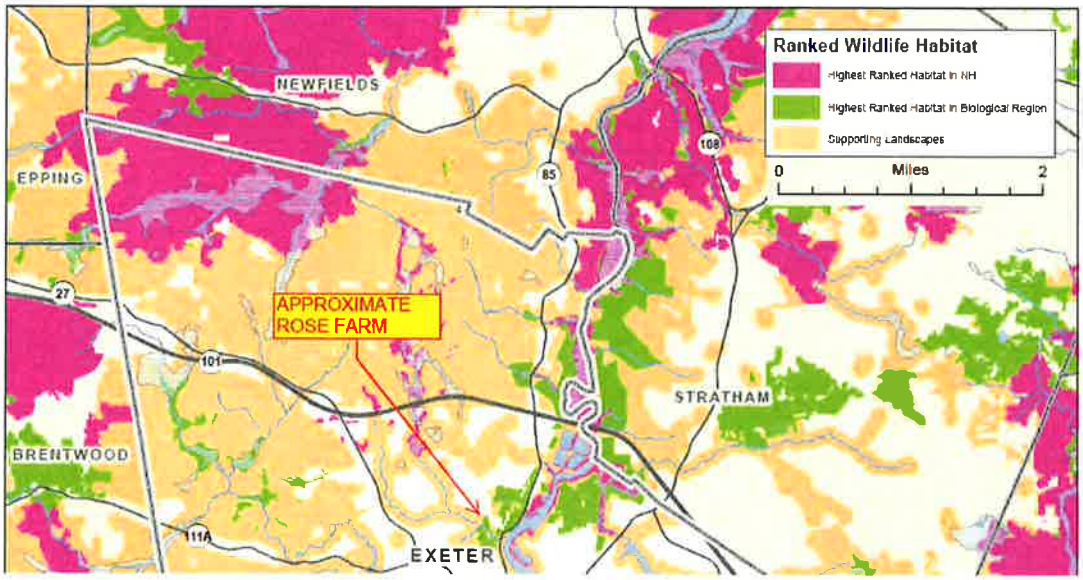
Figure 5



We note that the Ranked Wildlife Habitat map from the Natural Resources Inventory identifies Highest Ranked Habitat in the Biological Region that appears to correspond to the floodplain forest adjacent to Norris Brook between Oak Street Extension and the railroad tracks. Refer to Figure 6 below.

Figure 6

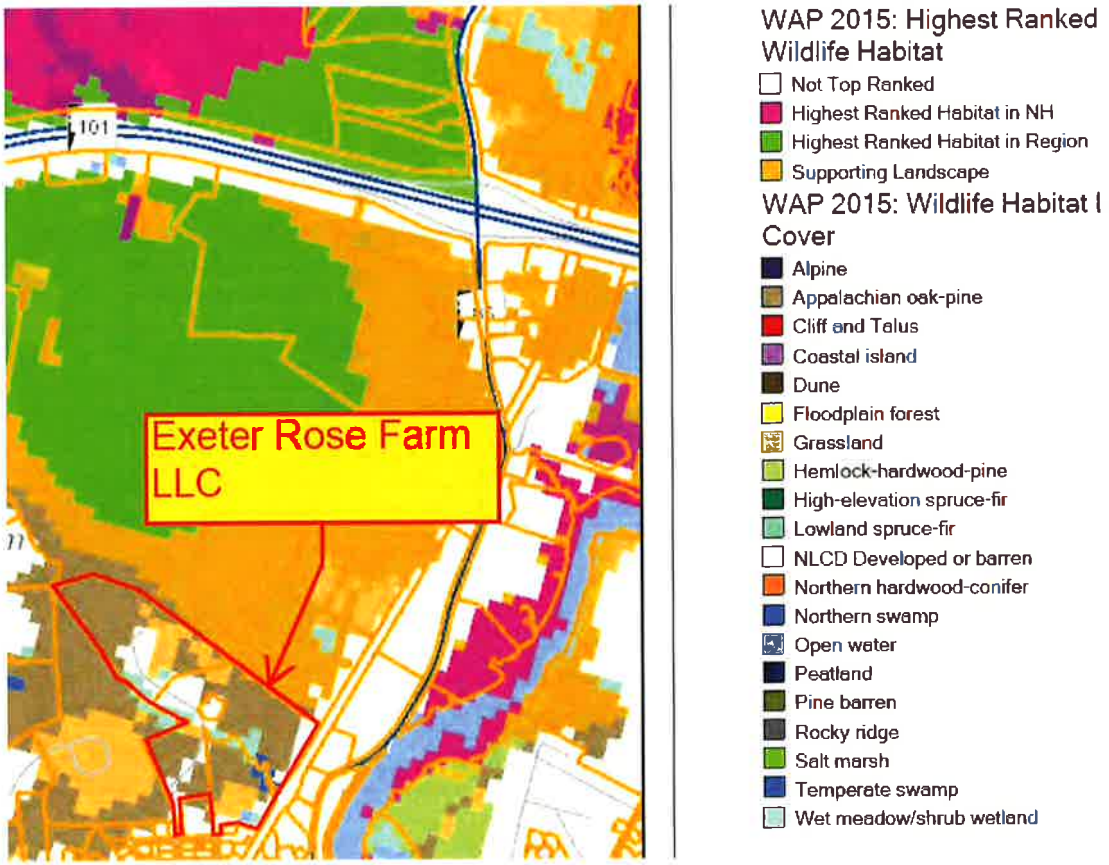
2A. RANKED WILDLIFE HABITAT



This conflicts with the ranked wildlife habitat depicted on the Wildlife Action Plan map as prepared using NH Granit, which does not identify any Highest Ranked Habitat in the Biological Region. See Figure 7 below.

Our observations confirm the presence of grassland at the site. As described earlier, the grassland generally coincides with areas of the site which are contaminated with lead and are pervaded by large slabs of concrete and other debris (such as piping) from the former greenhouse operations.

Figure 7



8.4. Character of Land

Land unsuitable for development due to the presence of poorly drained soils, flood hazard, steep slopes, or other conditions constituting a danger to health, safety, or the environment shall not be approved for development unless the applicant can present satisfactory evidence or data to the Board establishing the methods which will be used to overcome such conditions and the adequacy of the method. Land with inadequate capacity for sanitary sewage disposal shall not be developed unless connected to the municipal sewage system or a publicly approved private sewage disposal system.

We offer the following regarding the character of this land for development.

Poorly Drained Soils

Poorly drained soils coincide with jurisdictional wetlands which have been identified and delineated on-the-ground. The flags placed in the field to identify the wetland-upland boundary were surveyed and have been plotted on the site plans prepared to accompany the subdivision application.

Flood Hazard

The flood plain is generally confined to the wetland areas on this site due to the steep slopes that are adjacent to flood prone wetlands on this site. Where the flood plain is being crossed to provide access to the site the flood plain has been taken into account in the crossing design.

Steep Slopes

The regulations do not define what constitutes a steep slope. We have prepared maps that identify all slopes including in excess of 15%. Steep slopes have been accounted for and are being avoided except as necessary to provide access to the site. Future access to the site has been chosen to minimize impacts to steep slopes and wetlands. Fortunately, minimization of impacts to steep slopes also minimizes impacts to wetlands on this site. Refer to Exhibits 4 and 5 which are appended to the back of this document.

Sanitary Sewage Disposal

The site is proposing to connect to the municipal sewer system so the character of the land for sewage disposal is not germane.

8.6. Protection of Environmental Quality

All development plans shall be reviewed to ensure that:

8.6.1. All walls, fences, hedges, and plantings shall be located and designed to ensure harmony with adjacent developments, screen parking and loading areas, and conceal storage areas, utility installations and other such features.

The natural features of the land, especially the wetlands associated with Norris Brook, provide a natural screen between the largest part of the project and the existing neighborhoods to the south. The project proponents look forward to discussing fencing and screening needs for the portions of the project proposed for the parts of the site located between the established neighborhoods and Norris Brook with the Exeter Planning Board.

8.6.2. Dust and erosion shall be prevented through the planting of ground cover or installation of other surfaces.

All exposed soils will be stabilized with vegetation during (as appropriate) and after construction. A landscape plan will be developed for the project.

8.6.3. Natural attributes and major features of the site such as wetlands, highly erodible areas, historic structures, major trees, and scenic views (both from the site and onto or over the site) shall be retained to the extent feasible.

Wetlands

Wetlands have been identified and are being avoided to the extent feasible except as needed for access and as associated with site remediation activities.

Highly Erodible Soils

The site possesses some highly erodible soils such as Boxford silt loam series soils. (Symbol 32 on the soil survey map attached as Figure 2.) The project is aware of these soils and has proposed appropriate perimeter erosion and siltation controls. The project will be submitting an application for an Alteration of Terrain Permit from the State of New Hampshire. Additionally, the project will prepare a Storm Water Pollution Prevention Plan and submit a Notice of Intent to the United States Environmental Protection agency as required to obtain coverage under the National Pollution Discharge Elimination System – Construction General Permit. This permit requires routine inspections and preparation of status reports to document compliance.

Historic Structures

The project will notify the New Hampshire Division of Historic Resources as required during the wetland permitting process and will follow up regarding any historic resources as needed.

Major Trees

The largest tree on the property to our knowledge is a 32.5 inch diameter White oak (*Quercus alba*) which is located on the south facing slope behind the former rose packing house. (There is also an 18-inch diameter tree nearby that appears to be a black oak (*Quercus velutina*) although positive identification has not been made as yet.) These trees could be impacted during proposed hazardous waste remediation activities. There may be a way to avoid the trees but this needs to be discussed and coordinated with the environmental consultant. The coniferous forest at the west end of the property contains a significant number of white pine with an average diameter at breast height of approximately 15-18 inches.

Scenic views

We are not aware of any scenic views in the current condition. It is conceivable that construction of the project will create or "open up" some scenic views, especially on the access road's approach from Forest Street to Norris Brook.

8.6.4. Provisions shall be made for adequate storm and surface water drainage facilities in order to properly drain the site while minimizing downstream flooding. Site development shall also consider potential water quality impacts. A Stormwater Pollution Prevention Plan (SWPPP) shall be developed using a combination of structural, non-structural, and vegetative Best Management Practices (BMPs) as outlined in the Stormwater Management And Erosion And Sediment Control Handbook prepared by Rockingham County Conservation District.

The project will be applying for an Alteration of Terrain Permit from the State of New Hampshire. Additionally, the project will prepare a Storm Water Pollution Prevention Plan and submit a Notice of Intent to the United States Environmental Protection agency as required to obtain coverage under the National Pollution Discharge Elimination System – Construction General Permit. This permit requires routine inspections and preparation of status reports to document compliance.

8.6.5. All site development must comply with the performance standards outlined in Article 5.10 Performance Standards of the Zoning Ordinance. These standards addresses issues such as sound, vibration, radioactivity, odor, hazardous waste, glare, heat, dust & fly ash, and smoke.

Section 8.6.5 of the Site & Subdivision Regulations references Article 5.10 in the zoning. We are unable to find Article 5.10 in the zoning and instead reference Zoning Section 5.9 below.

5.9 PERFORMANCE STANDARDS

All uses shall comply with the following:

5.9.1 Sound: The volume of sound inherently and recurrently generated shall be controlled so as not to become a nuisance to adjacent uses.

Sound generated during construction will be confined to normal hours of operation. Sound generated post-construction by residents will be controlled by the Homeowners Association in conjunction with town authorities as necessary and consistent with other neighborhoods in town.

5.9.2 Vibration: An operation that creates intense earthshaking vibration, e.g., heavy drop forges, heavy hydraulic surges, shall not be discernible beyond the property lines of the industry.

The site currently experiences vibration associated with the railroad. Construction practices like vibratory rollers as may be needed during road construction will be controlled so as to minimize their ability to be discerned at the property line. Drop forges and similar activities are not proposed.

5.9.3 Radioactivity: No operation shall be permitted which causes radioactivity in violation of Title 10, Chapter 1, Part 20, Code of Federal Regulations, "Standards for Protection Against Radiation," dated June 16, 1957, or any subsequent revision or amendments.

With the exception of smoke detectors which will be installed in the proposed dwellings to comply with the required building codes and which contain trace amounts of radioactive materials, the project is not proposing any activity that causes radioactivity.

5.9.4 Odor: No emission of odorous gas or other odorous matter in such quantity as to be readily detectable at any point along lot lines without use of instruments shall be permitted.

The project will not produce odorous gas in such quantities as to be detectible over the lot line without the use of instruments.

5.9.5 Hazardous Waste:

A. Hazardous waste shall be those substances as defined by the Environmental Protection Agency in its proposed Regulations under Section 3001, 3002 of the Solid Waste Disposal Act of 1976, and as said proposed Regulations (including definitions) are more fully set forth in the Federal Register, Monday, December 18, 1978, Part IV, and as said proposed regulations (including definitions) may from time to time be amended and finally adopted. Hazardous Waste shall also be further defined as provided for in "An Act Establishing a Hazardous Waste Management Program," NH RSA §147-A:2, effective July 1, 1979, hereinafter referred to as the "Act", and as same may be amended or enlarged upon by the Rules and Regulations of the Bureau of Solid Waste Management, as is more specifically provided for in the Act.

Portions of the site are currently contaminated with Hazardous materials, which the project proposes to remediate as part of the site development. The project does not intend to generate any additional hazardous materials and the project will not include the disposal, treatment, bulking or handling of hazardous waste.

5.9.6 Glare: No direct or reflected glare shall be detectable from any R-District boundaries.

No direct or reflected glare will be detectable.

5.9.7 Heat: No direct or reflected heat shall be detectable from any R or C-District boundaries.

No direct or reflected heat will be detectable.

5.9.8 Dust and Fly Ash: No solid or liquid particles shall be emitted in such quantity as to be readily detectable at any point along lot lines or as to produce a public nuisance or hazard beyond lot lines.

It is conceivable that dust may be generated during construction. Dust which becomes a nuisance will be controlled using best management practices which include, sweeping, spraying water, landscaping where appropriate and other stabilization of exposed soils with vegetation.

5.9.9 Smoke: No smoke shall be emitted in such quantity as to become a nuisance.

Smoke will not be emitted in quantities sufficient to become a nuisance. Waste construction materials are sometimes burned. However, waste construction materials generated by this project will not be burned and instead will be disposed of in dumpsters and hauled to secure landfills.

8.8. Preservation of Natural Features

Insofar as possible, the development plan shall preserve such natural features as wetlands, watercourses, water bodies, floodplains, steep slopes, aquifer recharge areas, large or unique trees, wildlife habitats, and scenic views. The street and lot layout shall bear a logical relationship and be adapted to the topography of the site. Extensive grading and filling is discouraged and shall be avoided to the greatest extent possible.

9.6.2. Natural Features: The subdivision and development shall, whenever possible, preserve in their natural condition important natural features. The Board may request an advisory opinion from the Conservation Commission in the determination of the value of natural features and the boundaries of such natural systems. Such areas include watercourses, water bodies, floodplains, wetland areas, steep slopes, aquifer recharge areas, wildlife habitats, large or unique trees, and scenic views. Natural features that provide buffers between lots, or sections, of a subdivision should be preserved to enhance privacy and aesthetic value.

Wetlands / Watercourses / Water Bodies

Wetlands, water courses and waterbodies have been identified and are being avoided insofar as possible except as needed for access and as associated with site remediation activities. Unavoidable impacts as needed to access buildable areas are being minimized using retaining walls to avoid extensive grading and filling. The proposed street layout reflects avoidance and minimization of wetland impacts and is adapted to the topography of the site.

Flood Plains

The flood plain is generally confined to the wetland areas on this site due to the steep slopes that are adjacent to flood prone wetlands on this site. The floodplain is boing avoided insofar as possible. Unavoidable impacts to flood plain as needed to access buildable areas are being minimized using retaining walls. Where the flood plain is being crossed to provide access to the site the flood plain has been taken into account in the crossing design.

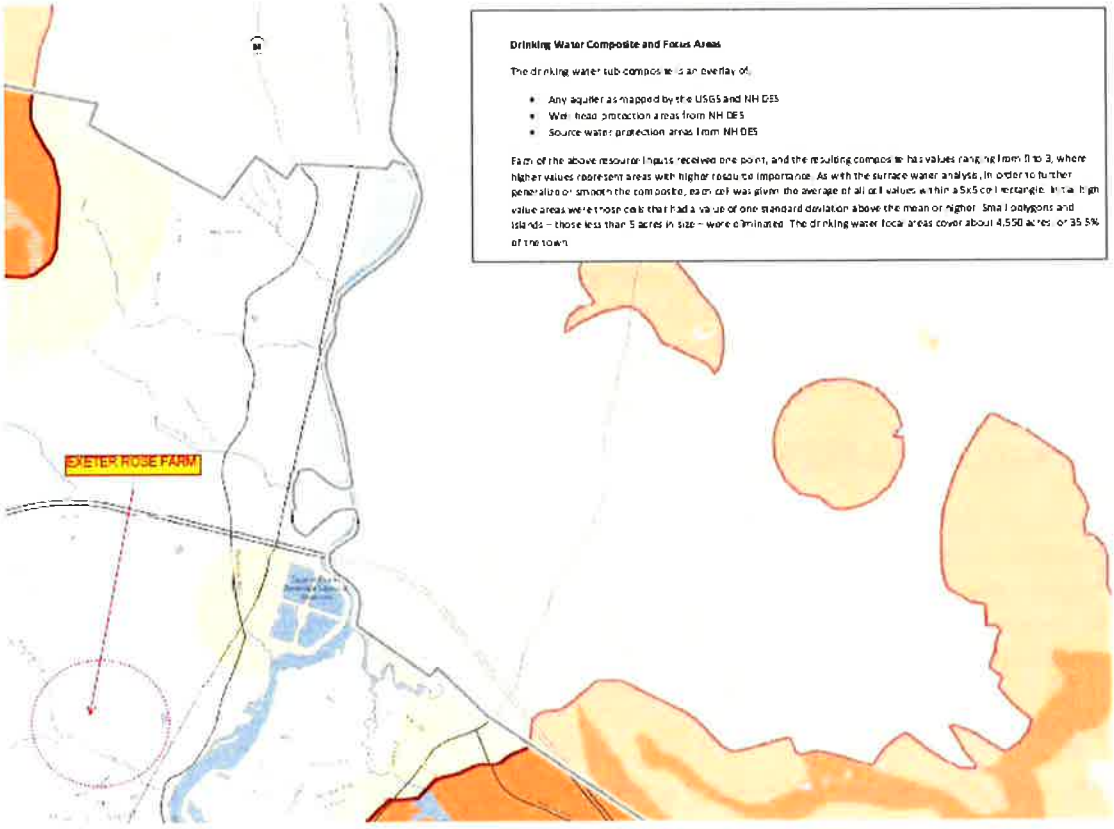
Steep Slopes

The regulations do not define what constitutes a steep slope. We have prepared a map that identifies all slopes including and in excess of 15%. Refer to Exhibits 4 and 5 which are appended to the back of this document.

Aquifer Recharge Areas

The site soils are dominated by dense marine sediments that possess a relatively thin mantle of sandy textured overburden that promotes groundwater discharge but are not conducive to groundwater recharge. There are no stratified draft deposits within the area. As a result the subject property is not considered a drinking water focus area according to the Natural Resource Inventory. Refer to Figure 8 below.

Figure 8 Drinking Water Focus Area (Exeter Natural Resource Inventory – Map 7)



Large or Unique Trees

The largest living trees on site are believed to be a 51 inch diameter oak and a 35 inch diameter white pine. The diameter of these trees was measured at breast height (dbh), which is 4.5 feet from the ground. The oak tree is alive but showing signs of decline. Both trees are located within the proposed road alignment that provides primary access to the portion of the property located north of Norris Brook.

Two other large trees on the property involve a 32.5 inch diameter White oak (*Quercus alba*), which is located on the south facing slope behind the former rose packing house and an 18-inch diameter tree that appears to be a black oak (*Quercus velutina*) although positive identification has not been made as yet.

Wildlife Habitats

According to Figure 4, the Natural Resources Inventory – Map 2 on page 10, the site contains several wildlife habitats including grassland, floodplain forest and Appalachian oak-pine forest. Refer to Figures 4 and 5 below. The grassland appears to be slightly under represented on Figure 4 while the oak-pine forest appears to be grossly over represented. It is important to keep the small scale of the Natural Resources Inventory maps in mind when evaluating this information. The floodplain forest depicted in Figure 4 corresponds reasonably well with field conditions we have observed including the wetlands between the impoundment east of Oak Street Extension and the railroad tracks (Refer to the 'green' study area in the Functional Wetland Evaluation.)

Whereas the delineation of jurisdictional wetlands and resource areas was conducted in December, several man-made isolated wetland areas that were thought to have the potential to provide habitat for species customarily associated with vernal pools have been monitored during the spring of 2018 and no primary vernal pool indicators species such as wood frogs or mole salamanders were observed during inspections conducted on April 17 and May 12, 2018.

Scenic Views

We are not aware of any scenic views in the current condition. It is conceivable that construction of the project will create or "open up" some scenic views, especially on the access road's approach from Forest Street to Norris Brook.

8.9. Landscaping and Tree Planting

Insofar as possible, the development plan shall preserve existing woodlands and suitable individual trees. If not possible to retain such, additional suitable plantings shall be included on the development plan. In accordance with the NH Department of Agriculture, Markets and Food regulation Agr-3800, plantings may not contain any prohibited species, including their cultivars and varieties. For redevelopment, salvage of existing landscaping and replanting prohibited species are also prohibited. In addition, the Board may require buffer strips between developments and adjacent land uses as deemed necessary.

The project takes advantage of a significant area of grassland, which includes the former greenhouse area, in order to minimize tree cutting. The project will be developing a landscaping plan that preserves existing trees insofar as possible and will not propose species prohibited by the NH Department of Agriculture, Markets and Foods as listed below. While this project could be considered redevelopment, salvage of existing landscaping plants or harvesting of native plants will not be proposed.

Scientific Name	Common Name	Growth Form
Acer platanoides	Norway maple	tree
Ailanthus altissima	tree of heaven	tree
Alliaria petiolata	garlic mustard	annual herb
Berberis thunbergii	Japanese barberry	shrub
Berberis vulgaris	European barberry	shrub
Celastrus orbiculatus	Oriental bittersweet	woody vine
Cynanchum nigrum	black swallow-wort	vine
Cynanchum rossicum	pale swallow-wort	vine
Elaeagnus umbellata	autumn olive	shrub
Euonymus alatus	burning bush	shrub
Heracleum mantegazzianum	giant hogweed	perennial herb
Iris pseudacorus	water-flag	aquatic emergent
Ligustrum obtusifolium	blunt-leaved privet	shrub
Lonicera bella	showy bush honeysuckle	shrub
Lonicera japonica	Japanese honeysuckle	woody vine
Lonicera morrowii	Morrow's honeysuckle	shrub
Lonicera tatarica	Tatarian honeysuckle	shrub
Polygonum cuspidatum	Japanese knotweed	perennial herb
Rhamnus cathartica	common buckthorn	shrub
Rhamnus frangula	glossy buckthorn	shrub
Rosa multiflora	multiflora rose	shrub
Centaurea biebersteinii	spotted knapweed	perennial herb
Hesperis matronalis	dame's rocket	perennial herb
Lepidium latifolium	perennial pepperweed	perennial herb
Microstegium vimineum	Japanese stilt grass	grass
Polygonum perfoliatum	mile-a-minute vine	vine
Reynoutria x *bohemica*	Bohemian knotweed	perennial herb

5.0 Impact Analysis

The analysis of direct impacts to site resources as per §9.8.1.2 of the Exeter Site and Subdivision Regulations has been partially addressed above but will be elaborated on in this section and will include wetland resources as assessed in the Wetland Functional Evaluation previously prepared for the project.

Numerous references are made in this Natural Resources Plan to "otherwise buildable land". Otherwise buildable land generally refers to land that has been evaluated through on-the-ground investigations for sensitive natural resources such as wetlands and soils and, after applying various zoning restrictions such as buffers, remains available and viable for construction and development. Map 13 – Development Potential – found in the Natural Resources Inventory (NRI), further identifies the Rose Farm parcel as available and suitable land for development.

The Exeter Zoning Ordinance defines the Shoreland Protection Overlay District as identified in Section 9.3.3.C. below.

9.3.3 District Boundaries: The Exeter Shoreland Protection District is defined to include the following:

C. Squamscott River (salt):

1. The area of land within 300 feet horizontal distance of the shoreline of the salt water Squamscott River, and the seasonal high water level of its fresh water major tributaries. Major tributaries of the Squamscott River within the Town of Exeter are defined to be the following: Norris Brook to its confluence with Watson Brook

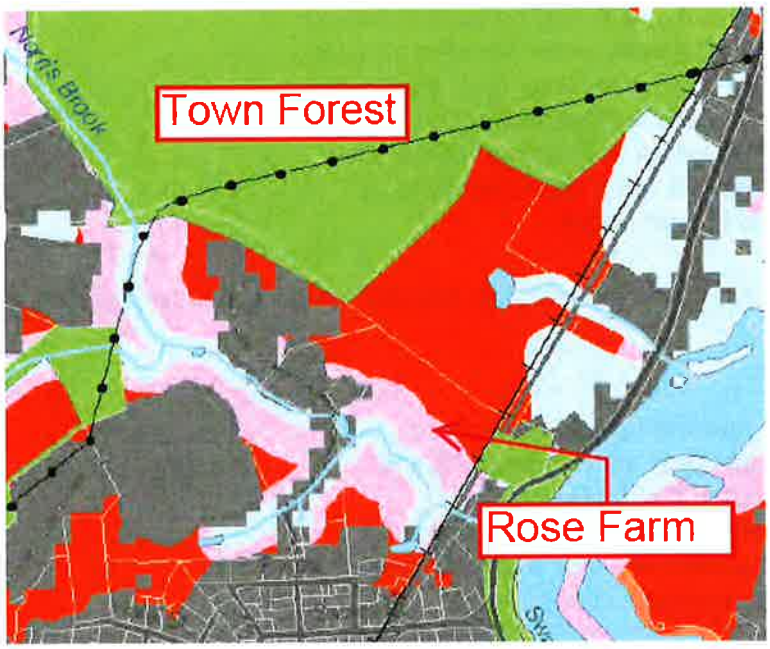
The Shoreland Protection Overlay District imposes the following restriction on the placement of structures.

9.3.4 Use Regulations:

C. Building Setbacks: No building (except a structure permitted as a Conditional Use, under Article 9.3.4.G. Exeter Shoreland Protection District Ordinance – Conditional Use or a permitted use under Article9.3.4.I Permitted Uses) septic system or septic system leaching field, (except a repair or reconstruction) shall be constructed on or moved to a site within 300 feet from the shoreline of the Squamscott River, Dearborn Brook, Waterworks Pond, and Fresh River; within 150 feet from the shoreline of the Exeter River or the major tributaries of the Squamscott River and Exeter River as herein defined,

The regulations create a 300 foot district and govern the usage of land within that district through use regulations. Use regulation 9.3.4.C. allows development and construction within the 300 foot district boundary. Map 13 depicts the Shoreland Protection Overlay District (in pink) as a three hundred (300) foot buffer. Map 13 also continues the 300 foot Shoreland Protection District designation beyond the confluence of Norris and Watson Brooks. Map 13 therefore significantly underrepresents the actual land area available and suitable for development at the Exeter Rose Farm. Refer to Figure 9 below.

Figure 9 – Map 13 – Developable Land



Available and Suitable Land
Conservation Land
Developed Land
Wetland Setbacks
Shoreland Protection Overlay District
FEMA 100-year Floodplain
Aquifer Protection Overlay District
Parcel Boundary

Prime Agricultural Soils

The Exeter NRI identifies two areas of important agricultural soils on the site, one on each side of Norris Brook. It is important to remember the scale of NRI maps and that maps prepared for NRI's are based upon analysis of aerial imagery and typically involve minimal ground truthing. This is not necessarily a flaw of this NRI, or NRI's in general, merely a limitation on the use, application and interpretation of NRI's.

North Side

The area of important agricultural soils identified on the north side of Norris Brook represents the area formerly occupied by several very large greenhouses which supported the commercial rose growing operations. This area is contaminated with lead as well as large slabs of partially buried / exposed concrete, pipes and other debris which render it unsuitable for tilling or agriculture and it is therefore misidentified as important agricultural farmland.

Furthermore, this area will be significantly altered to implement the Remedial Action Plan (RAP) which was developed to remediate the lead contaminants. The RAP will result in the remediation of lead to an acceptable level and will remove the concrete slabs and other debris; this area will not be ideally suited to agriculture after remediation.

The area is not being impacted solely for the construction of residential living space, which will help to satisfy a demand for such housing. Whereas the area will be graded during remediation activities, it makes sense to direct proposed development activities toward this location. The proposed residential subdivision project should therefore be considered redevelopment of previously developed lands or should be considered brownfields development.

South Side

The area of important agricultural soils identified by the NRI which is located on the south side of Norris Brook involves poorly drained Scitico series hydric soils, which are also jurisdictional wetlands, and moderately well drained Boxford series soils. Both soils are derived from dense, fine textured marine sediments (silts and clays) which are slowly permeable and subject to suspension and associated degradation of water quality in adjacent streams and water bodies. The potential for erosion and siltation are increased when the soils are exposed for agriculture or construction. Annual tilling associated with agriculture promotes greater exposure and increased erosion and siltation potential than either the undeveloped or post-construction conditions. This is especially true when the local topography, which focuses runoff directly toward Norris Brook, is considered.

Whereas Scitico and Boxford series soils are slowly permeable, conversion of these soils to impervious surfaces associated with construction is not a dramatic change from the preexisting condition and long-term adverse consequences to surface water resources can be minimized through proper design of a storm water management system.

Finally, Scitico series soils at this location are also considered jurisdictional wetlands. The Natural Resources Conservation Service has historically made no distinction between important agricultural soils that were jurisdictional wetlands and those that were not and has promoted farming (including ditching and draining) of wetlands. Farming of wetlands would be inconsistent with most of the purposes advocated by the Exeter zoning and subdivision regulations and would result in significant impacts to water quality in Norris Brook and the Squamscott River. The residential development being proposed is avoiding impact to the area of Scitico series soils.

Large Trees and Forest Lands

As identified earlier, two of the largest trees on the site are located within the proposed road alignment that provides primary access to the portion of the property located north of Norris Brook and will therefore be removed. Their removal is necessitated by the requirement to minimize unavoidable impacts to Norris Brook and adjacent wetlands. There is no alternative access to the northern buildable portion of the subject property that does not involve crossing Norris Brook. The primary road access location was chosen to minimize those unavoidable wetland impacts. The road crossing of Norris Brook could presumably be relocated to avoid the large trees but this would result in greater wetland and stream impacts which are not allowable under state regulations.

The large trees located near the former packing house could be impacted during proposed hazardous waste remediation activities. There may be a way to avoid impacting the trees but this remains to be determined based upon the exact extent of the area needing remediation which is subject to change predicated upon actual field observations once remediation work gets underway. The potential to save these trees will be assessed in the field in coordination with the environmental consultant.

The project is proposing to avoid the two largest areas of undisturbed forest on the property and protect these areas by designating them as open space and/or recreation area to be controlled by the town or HOA. The forest at the west end of the project is populated by large white pine. The forest at the east end of the property is populated by more hard wood species. Together these areas compensate for the loss of the two large trees to be removed during road during road construction.

Wildlife

The project will undoubtedly have some impact on wildlife habitat. Grasslands and forests cannot be replaced with homes for humans and other impervious infrastructure without some displacement of wildlife. Most of the species we have observed, identified from their sign or captured on motion sensing wildlife cameras, are very tolerant or reasonably tolerant of interaction with humans and will adapt to the development of the subject property. Eastern blue birds, which prefer larger areas of field, will undoubtedly suffer from the loss of the grassland associated with the development, especially since no new large grassy areas that are infrequently mowed will be created (which would require the conversion of additional forestland). (Note that the grassland on the north side of Norris Brook generally corresponds to the important agricultural soils identified by the NRI and which is contaminated with lead and concrete as discussed above.) Some species which are tolerant of human interaction such as deer, woodchuck and coyote may be able to leverage the development to a degree. For example, some of the future homeowners in the development will undoubtedly keep domestic cats for pets. Many of these cats will unquestionably be allowed to go out of doors. Coyote often predate outdoor house cats as a reliable source of food. (House cats that are allowed to go out of doors are significant predators of song birds and lead shorter lives than their indoor counterparts.) Refer to the two images appended to the back of this report.

The project is focusing the density on the previously developed portions of the site and as such should be considered a redevelopment of a previously developed area. The project is protecting the relatively natural forests to the east and west. These forests represent the most valuable and natural upland habitat on the property. The western forest is dominated by large white pine trees

and is likely providing habitat for roosting wild turkeys. The project is skirting the edge of the floodplain forest along Norris Brook identified in the NRI, although there may be some proximity effects associated with vehicular traffic and the ongoing use of the road. However, many wildlife species are reasonably tolerant of traffic and since many species of wildlife are nocturnal, and will therefore be active at night when traffic is minimal, the effects should not be pronounced.

The road crossing is being designed to provide an open bottom culvert with stream simulation and a migration corridor along the stream banks to encourage and permit migration by wildlife along the Norris Brook corridor. The Wildlife Connectivity map (Number 9) from the NRI identifies a separate potential wildlife corridor that runs through the Henderson-Swasey town forest along the northern boundary with the project site. The 100 foot vegetative buffer along the common property line with the Henderson-Swasey town forest will ensure that the project does not interfere with this potential wildlife corridor and the western forest that will remain as dedicated open space after the project is constructed will allow these migration corridors to merge. Refer to Figure 10 below.

Figure 10 Wildlife Connectivity

Wetlands

It should be noted that the primary access to the proposed project is unavoidable as there is no access to the buildable land located north of Norris Brook without crossing the brook. The applicant has implemented measures to minimize the unavoidable impact. Those measures include selecting the road alignment that crosses the brook and associated wetlands in the narrowest location. Additionally, block retaining walls are being proposed to minimize side slope grading at the crossing location. Finally, a box culvert is proposed at Norris Brook. The box culvert will be large enough to accommodate existing drainage without resulting in upstream flooding. The stream crossing will also utilize stream simulation and is sized to permit wildlife and aquatic organism passage.

The primary wetland crossing at Norris Brook is proposed to impact wetlands providing the following functions as determined by the Wetland Functional Evaluation:

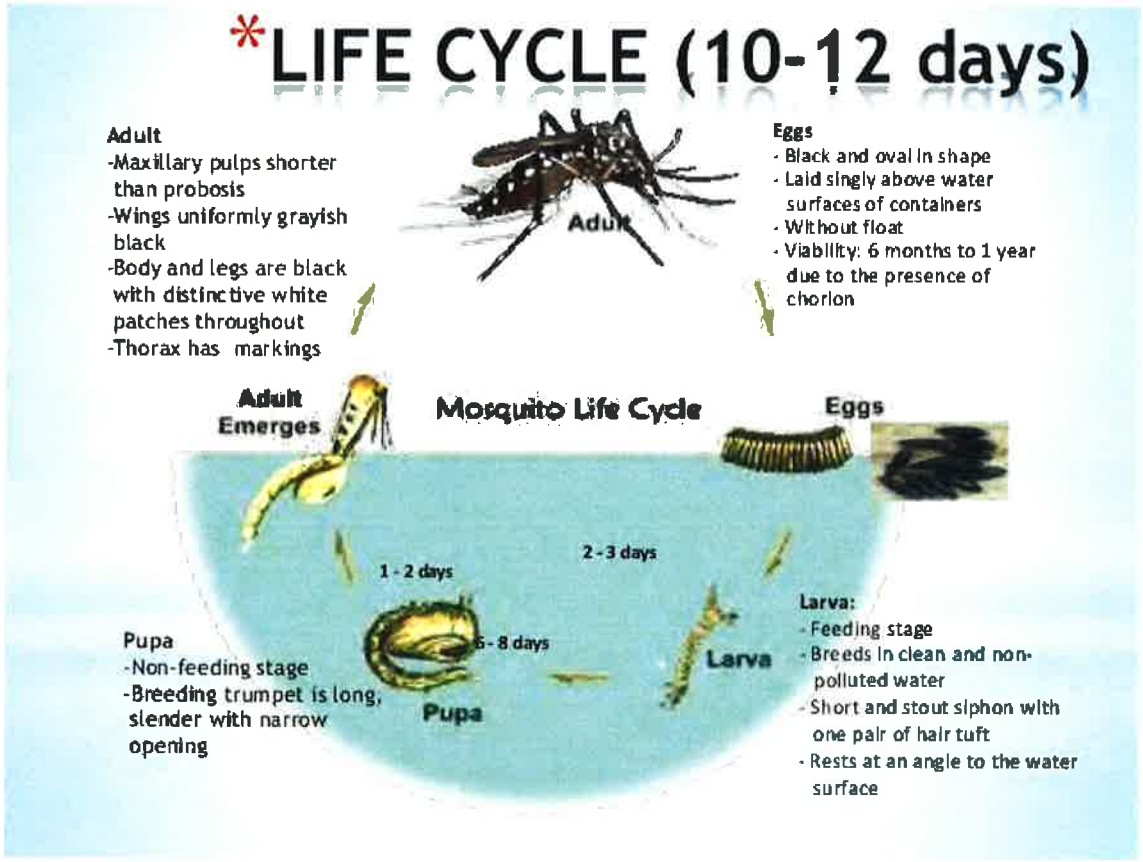
- Groundwater Discharge
- Floodflow Alteration
- Sediment / Toxicant Removal
- Nutrient Retention
- Wildlife Habitat

While groundwater discharge is a principal function of the overall wetland, it is performed minimally at the actual crossing location and will not be impacted by the wetland crossing. With the exception of the wetlands within the direct footprint of the crossing, the proposed crossing, and more specifically the proposed box culvert, will not change the ability of the wetland to provide Floodflow Alteration, Sediment / Toxicant Removal and Nutrient Retention functions. The proposed road will have proximity effects on adjacent wetland wildlife habitat as described above although the proposed box culvert will encourage wildlife passage along the Norris Brook corridor.

Other isolated man-made wetlands are proposed for impact during remediation activities intended to remove lead contaminated soils and coal ash as well as solid waste from the site. It is proposed that these areas will be eliminated during remediation and will not be restored. None of these areas is functioning at a moderate or high level based upon our observations made during numerous trips to the site to conduct various investigations of natural resources.

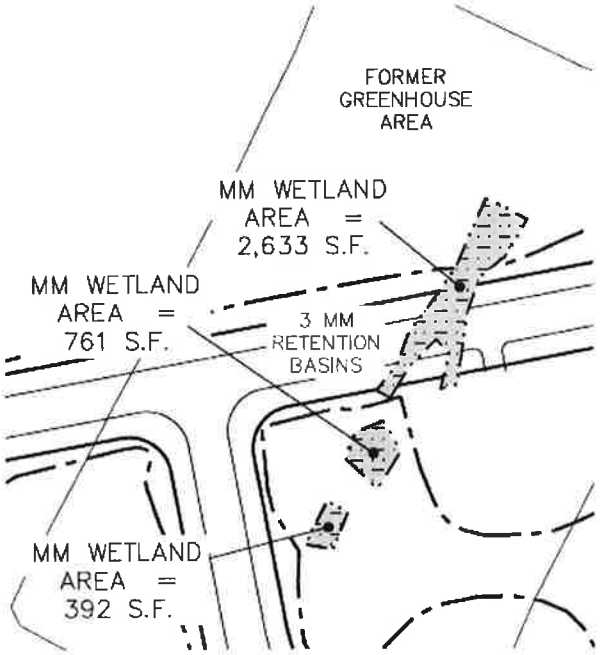
These isolated wetland areas have been inspected on numerous occasions since the original delineation of wetlands (which took place in the month of December) for activity by species customarily associated with vernal pool habitat but no species have been observed. (These inspections took place on March 17, April 17 and May 12, 2018.) This is likely due to the short hydroperiod. However, this hydroperiod may be sufficient to promote mosquito breeding as most species of mosquitos only require 7-14 days to complete their life cycle so these areas can conceivably pond water after larger storms during warmer weather and promote mosquito proliferation. Refer to Figure 11.

Figure 11 Mosquito Life Cycle



Alteration of these areas during site remediation has the unintended consequence of freeing up buildable land, thus allowing concentration of proposed dwelling units in the previously developed portion of the site. This, along with other relief, will allow the project to eliminate two cul-de-sacs and associated stream crossings with wetland impacts. Refer to Figure 12 below.

Figure 12 Man-made Isolated Basins

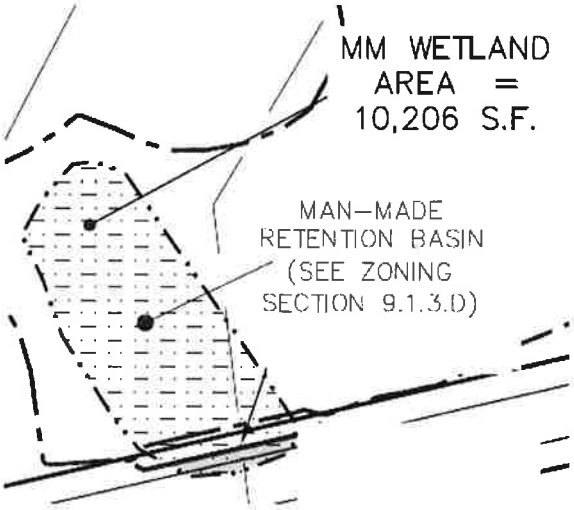


The man-made retention basin shown below in Figure 13 will also be altered during remediation activities. It will be dredged to remove lead but will otherwise remain upon completion of both site remediation and construction activities.

The basin is man-made by excavation and the land adjacent to the basin slopes precipitously into the basin. The area has been observed to be choked with aquatic vegetation during the warmer months. The steep sides pose a drowning hazard for anyone who may fall into the basin or who should enter voluntarily out of curiosity. As part of site remediation activities, it is proposed that the basin side slopes will be regraded to decrease the slopes and make egress easier for anyone who may venture into the pond.

We have observed use of the basin by a turtle during site investigations. (It is thought that this specimen was a painted turtle (*Chrysemys picta*) but we were unable to make a definitive positive identification. Painted turtles are common to the region.) Regrading the slopes will also make the basin more suitable for wildlife including turtles. The basin may also be fenced but this would adversely affect its potential use by wildlife. The development will likely result in decreased use of the basin by some forms of wildlife during and post-construction, with or without a fence.

Figure 13 Isolated Man-made Basin



5.0 Compensatory Mitigation

Wetland mitigation is intended to replace wetland and aquatic resource functions and values impacted by or lost to construction and development. Mitigation involves a sequence that includes avoidance of impacts, minimization of unavoidable impacts and finally compensation. Compensatory mitigation is sometimes supplied for impacts to important wetlands that provide a significant level of function and value. Broadly stated, compensatory mitigation can involve the creation of new wetlands, the rehabilitation of degraded wetlands or the preservation of land involving various proportions of wetlands and uplands.

State regulations require compensatory mitigation for wetland impacts exceeding 10,000 square feet, irrespective of functions and values. The 10,000 SF threshold is implicit acknowledgement that projects should generally not be required to provide mitigation for minor impacts and unavoidable impacts associated with access to otherwise buildable land where avoidance and minimization have been implemented.

While the grading associated with final project design is still underway, thus impacts cannot be definitively quantified, preliminary versions of the design have previously indicated that the project impacts will be below 10,000 SF of direct impact and will therefore not exceed the threshold that triggers the need for compensatory mitigation under the state regulations.

Section 9.8.1.3 of the Exeter Site and Subdivision Regulations speaks to mitigation as follows:

3. Mitigation: Where natural resources will be significantly affected or eliminated by the development, applicants may propose a mitigation plan to restore or replace the natural resource. If the Board feels a significant impact exists, the Board may require a mitigation plan.

Wetland Creation

Stated simply, wetland creation involves grading of uplands in a manner which results in the formation of wetlands. This method of mitigation is very energy and resource intensive. This method has a significant rate of failure in terms of replacing lost surface area and especially in terms of replacing lost functions and values. This method also results in the long-term temporary loss of wetland buffer, often involving the loss of existing productive forest lands. This method of compensatory mitigation is the least favorite option among regulatory officials for these reasons.

Wetland Rehabilitation

Wetland rehabilitation, broadly stated, involves the restoration and/or enhancement of existing degraded wetlands.

Preservation

Compensatory mitigation which takes the form of preservation involves the protection of wetlands and uplands in perpetuity using conservation easements or outright purchase. Preservation does not replace lost acreage of wetlands or aquatic resources but it may reduce the threat of future impacts or reduce future degradation of wetlands. Preservation is generally preferred by regulators.

With the exception of the unavoidable impact associated with crossing Norris Brook for access, the project has been designed to meet or exceed the various local buffers and setbacks to wetlands and water resources and as such could be considered a form of preservation. (Wetland and Shoreland buffers and setbacks are more restrictive in Exeter than many other communities in New Hampshire.) The preservation of 26± acres of open space also represents compensatory preservation. (Development projects in excess of 20 acres in Exeter are required to provide open space.) Preservation can also include elements of avoidance and minimization.

Avoidance

Those measures include selecting the road alignment that crosses Norris Brook and associated wetlands in the narrowest location while providing access to otherwise buildable land. Additionally, the project has incorporated input received from the public, town planning staff, planning board and conservation commission and has redesigned the project to eliminate two cul-de-sacs and associated stream crossings while concentrating development on previously developed portions of the site. Elimination of the two-cul-de-sacs permits the preservation of the two significant forested areas located in the east and

west ends of the site which remain after previous site development activities. These two forested areas total approximately 26 acres, which represents more than half of the total parcel proposed for development.

Minimization

Additionally, block retaining walls are being proposed to minimize side slope grading at the Norris Brook crossing location. Finally, a box culvert is proposed at Norris Brook. The box culvert will be large enough to accommodate existing drainage without resulting in upstream flooding. The stream crossing will also utilize stream simulation and is sized to encourage wildlife passage.

Other Mitigation Opportunities

In addition to the preservation of open space and other measures described above which are intended to minimize or mitigate the effects of the development, this section discusses several potential mitigation opportunities as well as preliminary considerations regarding advantages and disadvantages of each. Potential additional mitigation opportunities may include the following:

- Replacement of the existing culvert at Oak Street Extension
- Measures to mitigate erosion of the municipal storm drain near the railroad tracks
- Removal or repair of the concrete outlet/weir structure on the man-made retention basin adjacent to Oak Street Extension
- Wildlife Habitat Enhancements
  - Nest Boxes
  - Brush piles
  - Wildlife Enhancement Plantings
  - Aeration of man-made basins

Culvert Replacement

There are two existing culverts on Oak Street Extension. The culverts may by undersized, especially the culvert on Norris Brook, and are not conducive to wildlife passage. The culvert at Norris Brook could be replaced with one that provides a larger opening which may be more suitable for wildlife or aquatic organism passage. Alternatively, replacement of the culvert will likely diminish or eliminate flood attenuation and sediment / toxicant removal functions provided by wetlands upstream of the culvert (blue study area as identified in the wetland functional evaluation).

Municipal Storm Drain Repair

There is a municipal storm drain that discharges on the site along the railroad tracks. The discharge has scoured a channel into the slope that overlooks the wetlands adjacent to Norris Brook at the toe-of-slope. (It does not appear that this channel existed prior to the installation of the storm drain.) The flared-end-section at the discharge point is perched several feet as a result. The erosion continues to cause the sedimentation of wetlands and a diminution of water quality in Norris Brook with likely downstream effects on the Squamscott River.

Measures could be employed to stabilize the slope and minimize or eliminate the erosion. The measures will likely result in impacts to wetland and shoreland buffers associated with the temporary loss of tree canopy as needed to provide construction access and to implement any proposed stabilization measures.

Concrete Weir Repair or Removal

The man-made retention basin on Norris Brook immediately downstream of Oak Street Extension was created many years ago by excavation and impoundment. The dredge spoils are located adjacent and south of the basin. The impoundment is sustained by a weir consisting of concrete which was likely poured in place. The concrete structure has been partially breached by erosion at the south end but still impounds Norris Brook. The brook flows through the weir during high flows such as after major storms and during spring runoff and but flows through the breach during periods of low flow.

Removal of the concrete weir would restore the channel of Norris Brook in this area and may encourage aquatic organism and wildlife passage. Removal of the weir would also eliminate the minor ongoing erosion of the earthen berm at the south end of the basin. (Whereas Norris Brook is a perennial stream, removal of the weir may create other long-term stabilization challenges.) Alternatively, removal of the weir will eliminate an area of local open water habitat, thus eliminating or significantly altering the existing wildlife habitat. Removal of the weir may also result in a decrease in wetlands adjacent to the basin. Rose Farm Lane is proposed to provide access to the development will pass adjacent to (downstream and east of) the concrete weir and can provide access for removal. Finally, removal of the weir and subsequent draining of the pond will significantly lower the ability of the area to trap sediment and thus will transfer sediment removal functions currently being provided by the basin to downstream wetlands. Alternatively, the concrete weir could be repaired to increase or enhance the wildlife habitat and storage capacity during low flow conditions.

Wildlife Enhancement – Nest Boxes

Nest boxes are one of the easiest, most popular and successful ways to improve habitat for wildlife. Nest boxes, platforms or other types of nesting structures provide nest sites for birds and other wildlife in areas where natural nest sites, especially cavities, are absent or available in low numbers. They can also be used to attract wildlife to specific areas even when nest sites are not limited. There are generally no disadvantages to the installation of nest boxes. Nest boxes may be advisable for bluebirds but without significant expanses of open grassland their impact may be limited.

Wildlife Enhancement – Brush Piles

Brush piles are piles of brush that are assembled to provide resting or escape cover and den sites for wildlife. Brush piles can be used by rabbits and other small mammals. Songbirds may use brush piles for perch sites, especially if the piles are located near feeding or nesting sites. If brush piles are adjacent to a water source, amphibians and reptiles may use them for breeding, feeding or resting.

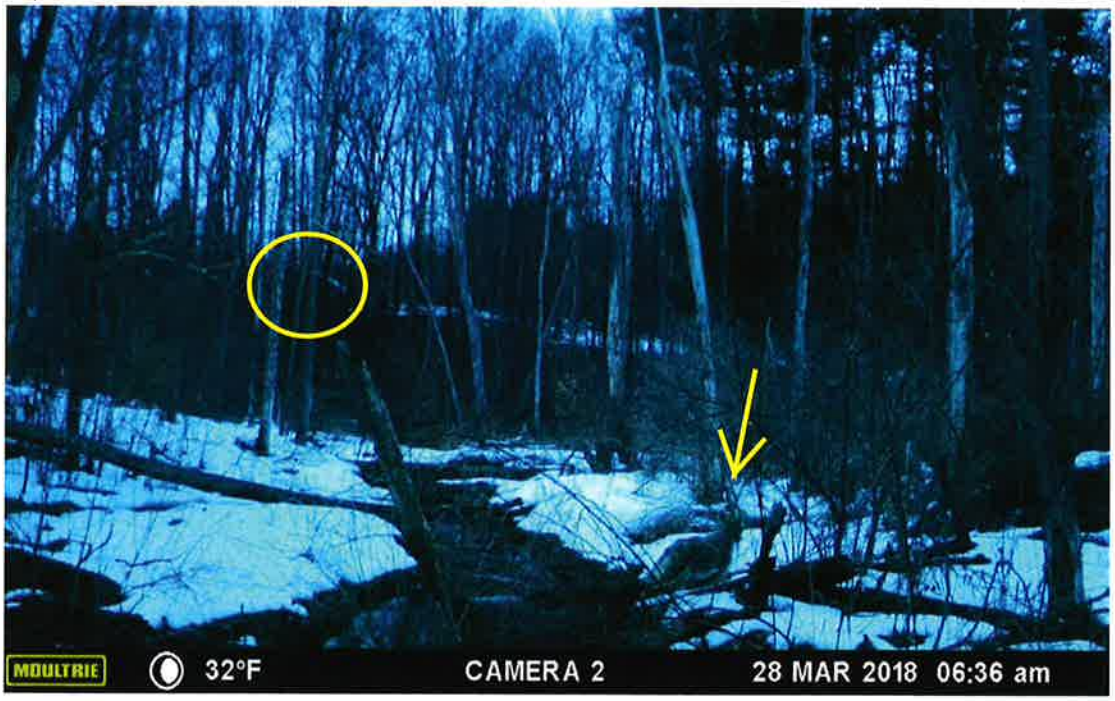
The best brush piles for wildlife start with the largest materials, typically pole-sized logs, at the bottom and end with the smallest materials (limbs or shrubs) at the top of the pile. The materials are arranged so that the brush pile is raised slightly above the ground surface. This makes it easier for animals to get under the brush pile and into cover. Placing the largest materials on the bottom of the pile also slows the brush pile's rate of decay.

Wildlife Enhancement – Forest Edge Improvement

Many species of wildlife use edge habitat for nesting, feeding or traveling. The main goal of forest edge improvement is to increase available food and cover along the forest edge by providing a variety of vegetation types and layers. Forest edges are used by both forest and field species. Black-capped chickadee, a forest species, may nest along forest edges with field sparrow (*Spizella pucilla*), a common species which is in decline and is more suited to open fields. Species like wild turkey, eastern cottontail (*Sylvilagus floridanus*) and deer typically feed along the forest edge because they are able to quickly retreat into the forest for safety. (Eastern cottontail competes for the same habitat with native New England cottontail (*Sylvilagus transitionalis)*, which is in decline.) Predators like red fox (*Vulpes vulpes*) are attracted to forest edges because an abundance of prey can often be found there. Forest edge improvement at this location could entail the installation of fruit-bearing and flowering shrubs intended to provide food and cover for wildlife, including birds and butterflies depending upon the species chosen. Edge improvement could be coordinated with other landscaping for the project.

Wildlife Enhancement – Aeration

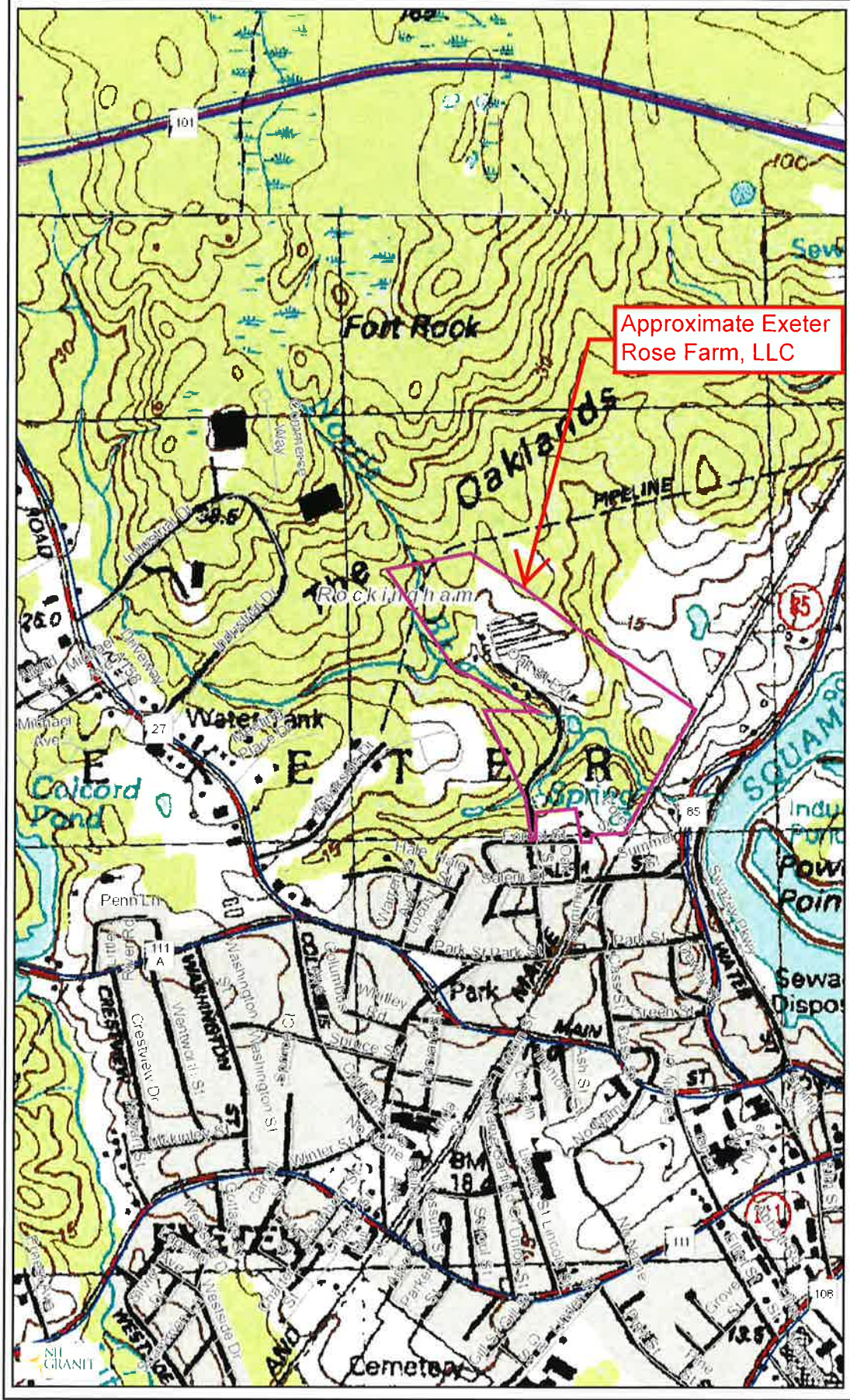
Introducing an artificial system of aeration or circulation to the basin which is proposed to remain after remediation will reduce the excessive growth of aquatic vegetation. Introduction of aeration as well as the loss of some low-functioning man-made isolated wetland basins during remediation will eliminate mosquito breeding areas. This could have positive ramifications for the proliferation of mosquito borne diseases such as West Nile Virus but may have adverse consequences for species such as bats, many species of which are in decline due to white-nose syndrome and habitat loss.



Note the coyote on the right in the foreground adjacent to Norris Brook and the existing home along Oak Street Extension in the background.

Note the owl on the stump left of center and the exterior light from the existing home on Oak Street Extension.

Map by NH GRANIT



Legend

- State
- County
- City/Town
- Interstates
- Turnpikes
- US Routes
- State Routes
- Local Roads

EXHIBIT 1
Natural Resources Plan
May 31, 2018

mcj

Map Scale
1: 12,988

Map Generated: 8/18/2016

Notes

Rose Farm
Oak Street Extension
Exeter, NH

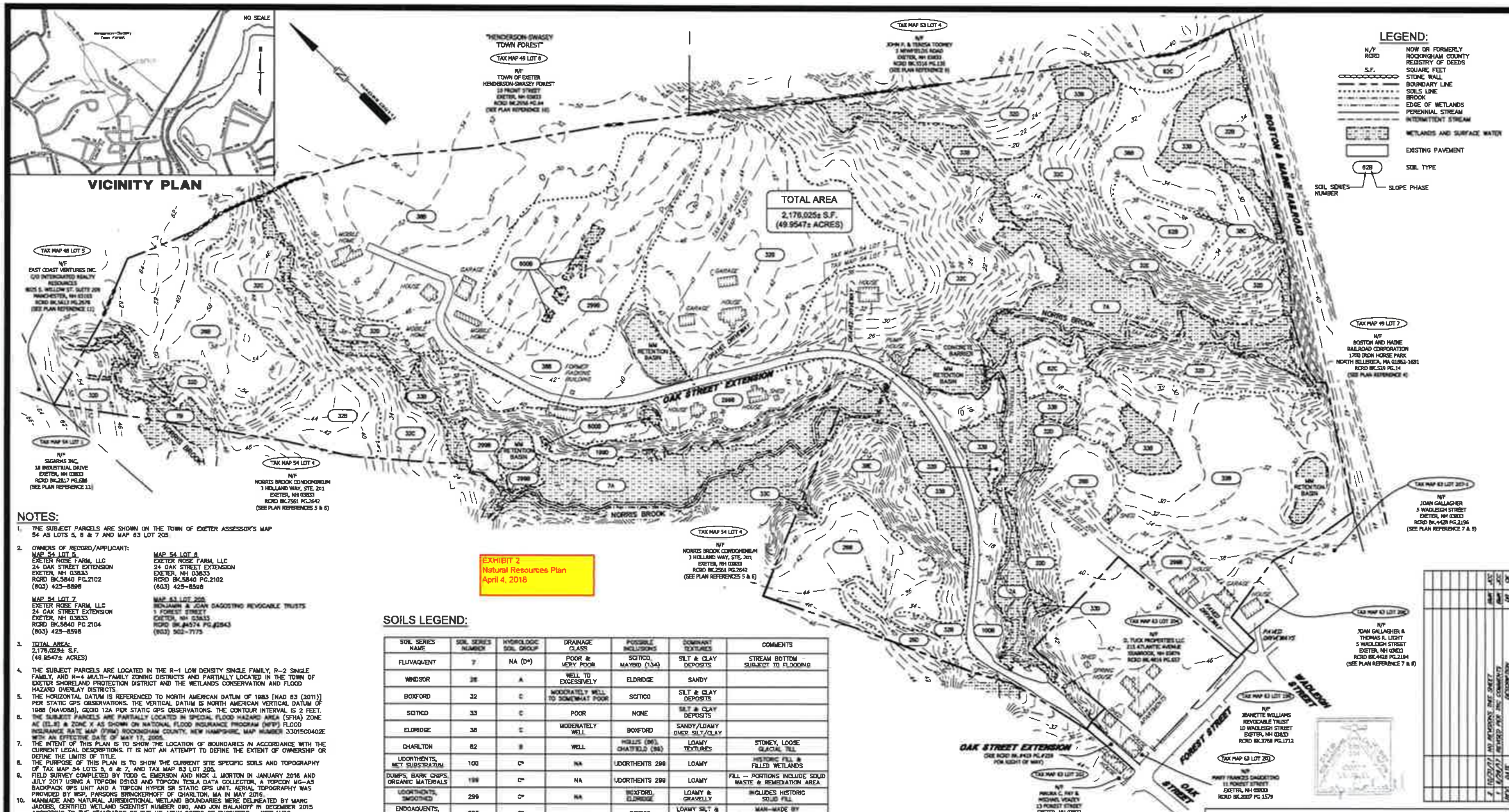


EXHIBIT 2
Natural Resources Plan
April 4, 2018

NOTES:

1. THE SUBJECT PARCELS ARE SHOWN ON THE TOWN OF EXETER ASSESSOR'S MAP 54 AS LOTS 5, 6 & 7 AND MAP 63 LOT 205
2. OWNERS OF RECORD/APPLICANT:

   MAP 54 LOT 5
   EXETER ROSE FARM, LLC
   24 OAK STREET EXTENSION
   EXETER, NH 03833
   RCRD BK.5840 PG.2102
   (603) 425-8598

   MAP 54 LOT 6
   EXETER ROSE FARM, LLC
   24 OAK STREET EXTENSION
   EXETER, NH 03833
   RCRD BK.5840 PG.2102
   (603) 425-8598

   MAP 54 LOT 7
   EXETER ROSE FARM, LLC
   24 OAK STREET EXTENSION
   EXETER, NH 03833
   RCRD BK.5840 PG 2104
   (603) 425-8598

   MAP 63 LOT 205
   BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS
   1 FOREST STREET
   EXETER, NH 03833
   RCRD BK.4574 PG.2843
   (603) 502-7175
3. TOTAL AREA:
   2,176,025± S.F.
   (49.9547± ACRES)
4. THE SUBJECT PARCELS ARE LOCATED IN THE R-1 LOW DENSITY SINGLE FAMILY, R-2 SINGLE FAMILY, AND R-4 MULTI-FAMILY ZONING DISTRICTS AND PARTIALLY LOCATED IN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT AND THE WETLANDS CONSERVATION AND FLOOD HAZARD OVERLAY DISTRICTS
5. THE HORIZONTAL DATUM IS REFERENCED TO NORTH AMERICAN DATUM OF 1983 [NAD 83 (2011)] PER STATIC GPS OBSERVATIONS. THE VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), GEOID 12A PER STATIC GPS OBSERVATIONS. THE CONTOUR INTERVAL IS 2 FEET.
6. THE SUBJECT PARCELS ARE PARTIALLY LOCATED IN SPECIAL FLOOD HAZARD AREA (SFHA) ZONE AE (EL.8) & ZONE X AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP NUMBER 33015C0402E WITH AN EFFECTIVE DATE OF MAY 17, 2005.
7. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
8. THE PURPOSE OF THIS PLAN IS TO SHOW THE CURRENT SITE SPECIFIC SOILS AND TOPOGRAPHY OF TAX MAP 54 LOTS 5, 6 & 7, AND TAX MAP 63 LOT 205.
9. FIELD SURVEY COMPLETED BY TODD C. EMERSON AND NICK J. MORTON IN JANUARY 2016 AND JULY 2017 USING A TOPCON DS103 AND TOPCON TESLA DATA COLLECTOR, A TOPCON MC-A5 BACKPACK GPS UNIT AND A TOPCON HYPER SR STATIC GPS UNIT. AERIAL TOPOGRAPHY WAS PROVIDED BY WSP, PARSONS BRINCKERHOFF OF CHARLTON, MA IN MAY 2016.
10. MANMADE AND NATURAL JURISDICTIONAL WETLAND BOUNDARIES WERE DELINEATED BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, AND JON BALANOFF IN DECEMBER 2015 ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS - WETLANDS DELINEATION MANUAL; THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES - WETLANDS BUREAU - ENV WT 100-800 AND THE TOWN OF EXETER ZONING. PREDOMINANT HYDRIC SOILS WERE IDENTIFIED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 3, APRIL 2004 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 7, 2010. THE INDICATOR STATUS OF HYDROPHYTIC VEGETATION WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS - NORTHCENTRAL AND NORTHEAST 2014 REGIONAL WETLAND PLANT LIST. COPIES OF SITE PLANS DEPICTING THE WETLAND DELINEATION WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS LOCATION.
11. THIS SOIL MAP IS WITHIN THE TECHNICAL STANDARDS OF THE NATIONAL COOPERATIVE SOIL SURVEY. IT IS A SPECIAL PURPOSE PRODUCT INTENDED FOR USE IN COMPLYING WITH THE NH ALTERATION OF TERRAIN (AoT) REGULATIONS (ENV-WQ 1500). IT WAS PRODUCED BY JON BALANOFF AND MARC JACOBS, CERTIFIED SOIL SCIENTIST #038, BASED UPON FIELD INVESTIGATIONS CONDUCTED IN JULY 2017 AND IS NOT A PRODUCT OF THE USDA NATURAL RESOURCES CONSERVATION SERVICE. THE SITE-SPECIFIC SOIL SURVEY WAS CONDUCTED ACCORDING TO SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT, VERSION 3.0, DATED FEBRUARY 2011 (SPECIAL PUBLICATION NO. 3) AS PUBLISHED, MAINTAINED AND AMENDED BY THE SOCIETY OF SOIL SCIENTISTS OF NORTHERN NEW ENGLAND (SSSNNE). COPIES OF THE SOIL SURVEY MAP THAT HAVE BEEN REVIEWED BY THE SCIENTIST(S) ARE INDIVIDUALLY STAMPED, SIGNED AND DATED.
12. SEE SHEET C-01 FOR EXISTING SITE CONDITIONS PLAN. SEE SHEET C-02 FOR PLAN REFERENCES.

SOILS LEGEND:

SOIL SERIES NAME	SOIL SERIES NUMBER	HYDROLOGIC SOIL GROUP	DRAINAGE CLASS	POSSIBLE INCLUSIONS	DOMINANT TEXTURES	COMMENTS
FLUVAQUENT	7	NA (D*)	POOR & VERY POOR	SCITICO, MAYBID (134)	SILT & CLAY DEPOSITS	STREAM BOTTOM - SUBJECT TO FLOODING
WINDSOR	26	A	WELL TO EXCESSIVELY	ELDRIDGE	SANDY	
BOXFORD	32	C	MODERATELY WELL TO SOMEWHAT POOR	SCITICO	SILT & CLAY DEPOSITS	
SCITICO	33	C	POOR	NONE	SILT & CLAY DEPOSITS	
ELDRIDGE	38	C	MODERATELY WELL	BOXFORD	SANDY/LOAMY OVER SILT/CLAY	
CHARLTON	62	B	WELL	HOLLIS (66), CHATFIELD (66)	LOAMY TEXTURES	STONEY, LOOSE GLACIAL TILL
UDORTHENTS, WET SUBSTRATUM	100	C*	NA	UDORTHENTS 299	LOAMY	HISTORIC FILL & FILLED WETLANDS
DUMPS, BARK CHIPS, ORGANIC MATERIALS	199	C*	NA	UDORTHENTS 299	LOAMY	FILL - PORTIONS INCLUDE SOLID WASTE & REMEDIATION AREA
UDORTHENTS, SMOOTHED	299	C*	NA	BOXFORD, ELDRIDGE	LOAMY & GRAVELLY	INCLUDES HISTORIC SOLID FILL
ENDOAQUENTS, LOAMY	800	C*	POOR*	SCITICO	LOAMY SILT & CLAY DEPOSITS	MAN-MADE BY EXCAVATION - WETLANDS

*ESTIMATED BASED UPON SOIL PROPERTIES OBSERVED IN THE FIELD

SLOPE PHASE LEGEND (PERCENT)

A	B	C	D	E	F
0-3	3-8	8-15	15-25	25-50	50+

Graphic Scale
100 50 25 0 100

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Fax (603) 431-0910
www.mscengineers.com

47175.00 | DR NJM | FB 531 & 539 | CK BMK | CADFILE 47175.00-SOILS | C-03

TAX MAP 54 LOTS 5, 6 & 7 AND MAP 63 LOT 205
SITE-SPECIFIC SOILS MAP & TOPOGRAPHIC PLAN

OAK STREET EXTENSION & FOREST STREET
EXETER, NEW HAMPSHIRE, COUNTY OF ROCKINGHAM

OWNED BY

EXETER ROSE FARM, LLC & THE
BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS

PREPARED FOR

EXETER ROSE FARM, LLC

SCALE: 1"=100' **AUGUST 15, 2017**

Oct 30, 2017 - 6:01pm
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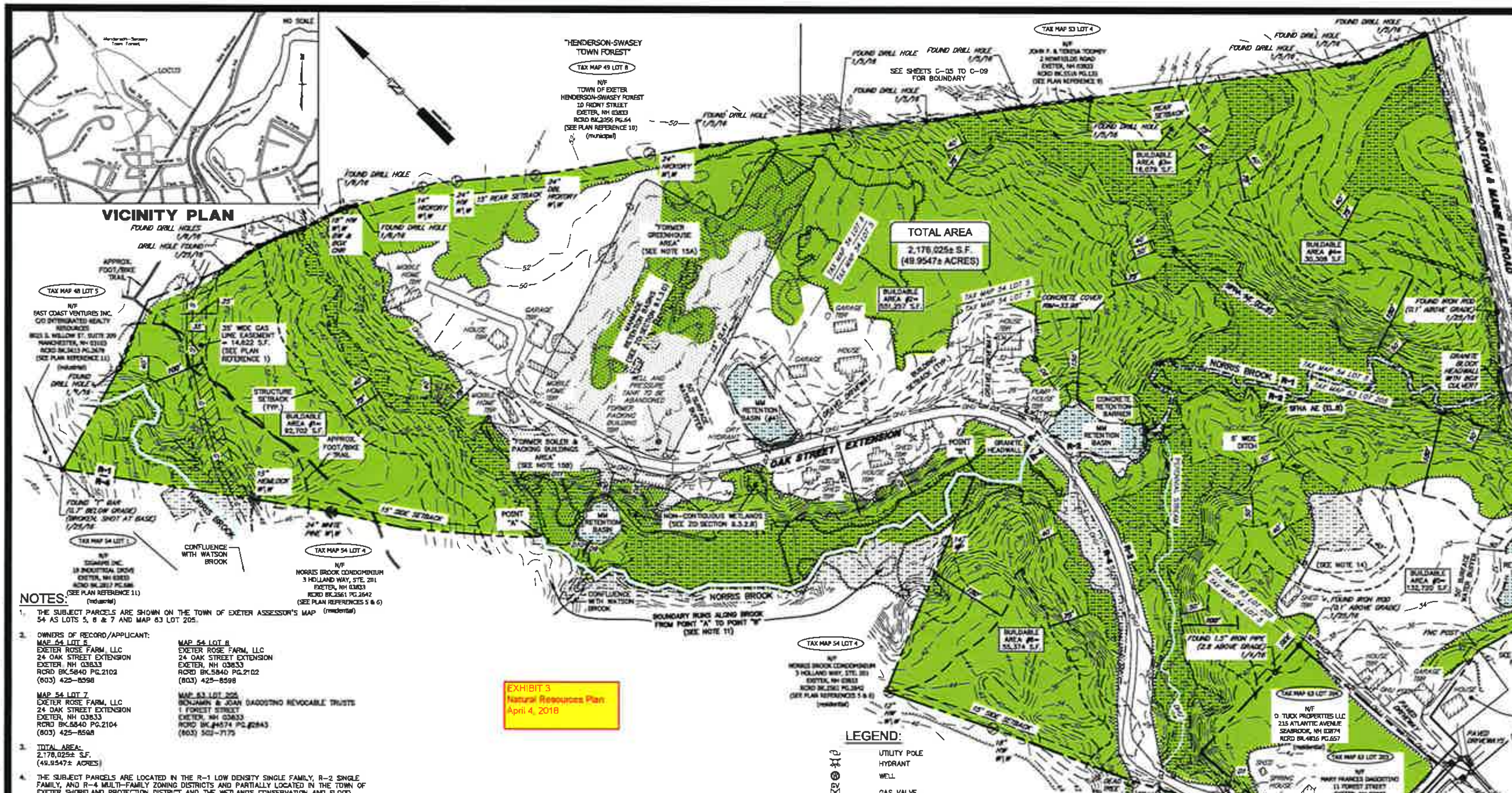

NOTES:

1. THE SUBJECT PARCELS ARE SHOWN ON THE TOWN OF EXETER ASSESSOR'S MAP 54 AS LOTS 5, 6 & 7 AND MAP 63 LOT 205.

2. OWNERS OF RECORD/APPLICANT:

MAP 54 LOT 5 EXETER ROSE FARM, LLC 24 OAK STREET EXTENSION EXETER, NH 03833 RCRD BK.5840 PG.2102 (603) 425-8598	MAP 54 LOT 6 EXETER ROSE FARM, LLC 24 OAK STREET EXTENSION EXETER, NH 03833 RCRD BK.5840 PG.2102 (603) 425-8598
MAP 54 LOT 7 EXETER ROSE FARM, LLC 24 OAK STREET EXTENSION EXETER, NH 03833 RCRD BK.5840 PG.2104 (603) 425-8598	MAP 63 LOT 205 BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS 1 FOREST STREET EXETER, NH 03833 RCRD BK.4574 PG.2843 (603) 502-7175

3. TOTAL AREA:
2,176,025± S.F.
(49.9547± ACRES)

4. THE SUBJECT PARCELS ARE LOCATED IN THE R-1 LOW DENSITY SINGLE FAMILY, R-2 SINGLE FAMILY, AND R-4 MULTI-FAMILY ZONING DISTRICTS AND PARTIALLY LOCATED IN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT AND THE WETLANDS CONSERVATION AND FLOOD HAZARD OVERLAY DISTRICTS.

5. DENSITY AND DIMENSIONAL REGULATIONS:

	R-1	R-2	R-4 (DETACHED SINGLE FAMILY)
MINIMUM LOT AREA:			
(NO MUNICIPAL WATER & SEWER)	2 ACRES	1 ACRES	NA
(MUNICIPAL WATER & SEWER)	40,000 S.F.	15,000 S.F.	12,000 S.F.
(DWELLING UNIT)	40,000 S.F.	15,000 S.F.	12,000 S.F.
MINIMUM LOT WIDTH:	150'	100'	100'
MINIMUM LOT DEPTH:	150'	100'	100'
MAXIMUM HEIGHT:	35'/3 STORIES	35'/3 STORIES	35'/3 STORIES
MINIMUM YARD SETBACKS:			
FRONT YARD:	25'	25'	25'
SIDE YARD:	15'/30'	15'/30'	15'/30'
REAR YARD:	25'	25'	25'
MAXIMUM BUILDING COVERAGE:	15%*	25%*	25%*
MINIMUM OPEN SPACE:	80%**/70%	80%**/40%	30%

*FOR AREAS WITHIN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT THE MAXIMUM LOT COVERAGE IS 10% (SEE SECTION 9.3.4.B)
**FOR LOTS USING SEPTIC SYSTEMS
PER THE TOWN OF EXETER, N.H. ZONING ORDINANCE, SECTION 4.3.

6. THE HORIZONTAL DATUM IS REFERENCED TO NORTH AMERICAN DATUM OF 1983 [NAD 83 (2011)] PER STATIC GPS OBSERVATIONS. THE VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), GEOID 12A PER STATIC GPS OBSERVATIONS. THE CONTOUR INTERVAL IS 2 FEET.

7. THE SUBJECT PARCELS ARE PARTIALLY LOCATED IN SPECIAL FLOOD HAZARD AREA (SFHA) ZONE AE (EL.8) & ZONE X AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP NUMBER 33015C0402E WITH AN EFFECTIVE DATE OF MAY 17, 2005.

8. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.

9. THE PURPOSE OF THIS PLAN IS TO SHOW THE CURRENT EXISTING FEATURES AND TOPOGRAPHY OF TAX MAP 54 LOTS 5, 6 & 7, AND TAX MAP 63 LOT 205. SEE SHEET C-02 FOR CULVERT TABLE AND PLAN REFERENCES, SHEETS C-05 TO C-09 FOR BOUNDARY BEARINGS AND DISTANCES, SHEET C-03 FOR SITE-SPECIFIC SOILS MAP, SHEET C-10A FOR WETLAND AREAS AND SHEET C-11 FOR OFFSITE UTILITY INFORMATION.

10. FIELD SURVEY COMPLETED BY TODD C. EMERSON AND NICK J. MORTON IN JANUARY 2016 AND JULY 2017 USING A TOPCON DS103 AND TOPCON TESLA DATA COLLECTOR, A TOPCON MG-A5 BACKPACK GPS UNIT AND A TOPCON HYPER SR STATIC GPS UNIT. AERIAL TOPOGRAPHY WAS PROVIDED BY WSP, PARSONS BRINKERHOFF OF CHARLTON, MA IN MAY 2016.

11. THE BOUNDARY RUNS ALONG THE BROOK FROM POINT "A" TO POINT "B". THE TOTAL AREA WAS DETERMINED USING THE CENTERLINE OF THE BROOK AS LOCATED BY MSC IN JANUARY 2016.

12. UTILITY LINES SHOWN HEREON ARE A COMPILATION OF FIELD LOCATIONS, RECORD PLANS AND DIGITIZED PER THE TOWN OF EXETER GIS WEB SITE AND ARE APPROXIMATE ONLY. CONTACT DIGSAFE @ 1-888-DIG-SAFE AND THE TOWN OF EXETER DEPARTMENT OF PUBLIC WORKS TO VERIFY UTILITIES.

13. MANMADE AND NATURAL JURISDICTIONAL WETLAND BOUNDARIES WERE DELINEATED BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, AND JON BALANOFF IN DECEMBER 2015 ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS – WETLANDS DELINEATION MANUAL; THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES – WETLANDS BUREAU – ENV WT 100-900 AND THE TOWN OF EXETER ZONING. PREDOMINANT HYDRIC SOILS WERE IDENTIFIED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 3, APRIL 2004 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 7, 2010. THE INDICATOR STATUS OF HYDROPHYTIC VEGETATION WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS – NORTHCENTRAL AND NORTHEAST 2014 REGIONAL WETLAND PLANT LIST. COPIES OF SITE PLANS DEPICTING THE WETLAND DELINEATION WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS LOCATION.

14. WETLANDS CONTAINING POORLY DRAINED SOILS ARE SUBJECT TO A 40' NO CUT/NO DISTURBANCE SETBACK. WETLANDS CONTAINING VERY POORLY DRAINED (VPD) SOILS ARE SUBJECT TO A 50' NO CUT/NO DISTURBANCE SETBACK.

LEGEND:

UTILITY POLE
HYDRANT
WELL
GAS VALVE
WATER VALVE
WATER SHUT OFF
CATCH BASIN
SEWER MANHOLE
DRAIN MANHOLE
DECIDUOUS TREE
CONIFEROUS TREE
STONE WALL
DRAIN LINE
SEWER LINE
WATER LINE
GAS LINE
OVERHEAD UTILITIES
BOUNDARY LINE
BROOK
EDGE OF WETLANDS
PERENNIAL STREAM
INTERMITTENT STREAM
40'/50' NO CUT/NO DISTURBANCE SETBACK (S&SR SECTION 9.9.2)
75' STRUCTURE SETBACK (S&SR SECTION 9.9.2)
100'/150' BUILDING SETBACK (ZO SECTION 6.3.4.C)
YARD SETBACK (ZO SECTION 4.3)
50' SURFACE WATER BUFFER (S&SR SECTION 9.8.1.1)
SPECIAL FLOOD HAZARD AREA BOUNDARY ZONE AE
BOX WIRE FENCE
TREE LINE
WETLANDS AND SURFACE WATER
EASEMENT
EXISTING PAVEMENT
FORMER GREENHOUSE, BOILER & PACKING BUILDINGS AREA

FORESTED AREA
SURFACE WATER

LEGEND:

APPROX	APPROXIMATE
I	INDUSTRIAL
TBR	TO BE REMOVED
AC	ASBESTOS CONCRETE
PP	PLASTIC PIPE
EM	ELECTRIC METER
ELEV.	ELEVATION
HW	HARD WOOD
D1	DRAINAGE LABEL
MM	MANMADE
N/F	NOW OR FORMERLY
R-1	LOW DENSITY RESIDENTIAL ZONING DISTRICT
R-2	SINGLE FAMILY RESIDENTIAL ZONING DISTRICT
R-4	MULTI-FAMILY RESIDENTIAL ZONING DISTRICT
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
R.O.W.	RIGHT OF WAY
S.F.	SQUARE FEET
S&SR	SITE PLAN REVIEW AND SUBDIVISION REGULATIONS
SFHA	SPECIAL FLOOD HAZARD AREA
SW	SURFACE WATER
TYP.	TYPICAL
UP	UTILITY POLE
W/W	WITH WIRE
ZO	ZONING ORDINANCE

100 50 25 0 100
Graphic Scale

TFM MSC
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.mscengineers.com

47175.00 DR BMK CK JCC

TAX MAP 54 LOTS 5, 6 & 7 AND MAP 63 LOT 205
FORESTED AREAS PLAN
OAK STREET EXTENSION & FOREST STREET
EXETER, NEW HAMPSHIRE, COUNTY OF ROCKINGHAM
OWNED BY
EXETER ROSE FARM, LLC & THE BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS
PREPARED FOR
EXETER ROSE FARM, LLC

SCALE: 1"=100' **MARCH 29, 2018**

Mar 29, 2018 - 4:01pm
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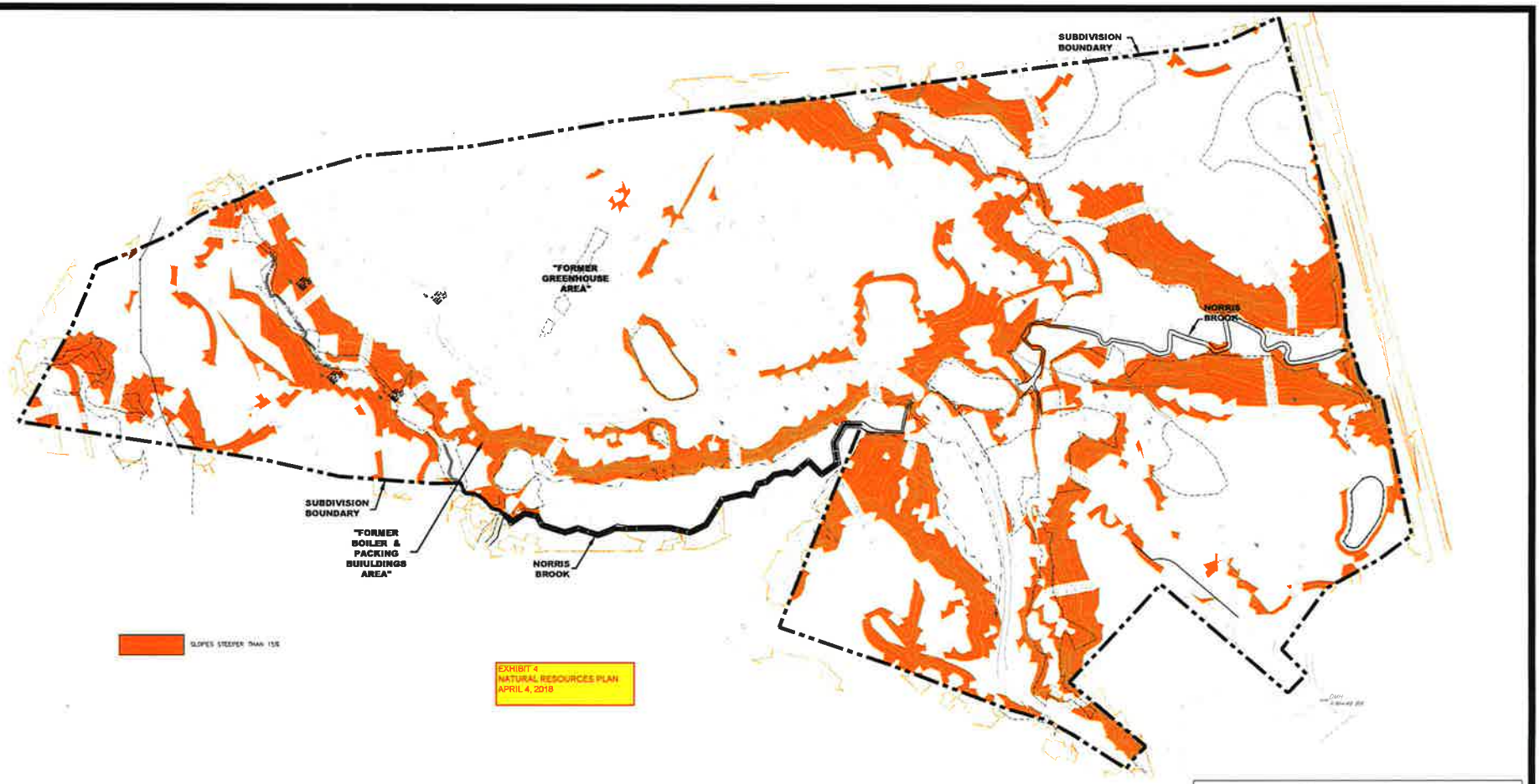

EXHIBIT 4
NATURAL RESOURCES PLAN
APRIL 4, 2018

TAX MAP 54 LOTS 5, 6 & 7 TAX MAP 63 LOT 205

STEEP SLOPES

EXETER ROSE FARM

FOREST STREET & OAK STREET EXTENSION

EXETER, NEW HAMPSHIRE, COUNTY OF ROCKINGHAM

BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUST

OWNED BY

EXETER ROSE FARM, LLC &

BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS

SCALE: 1"=100' (22X34)
1"=200' (11X17)

MARCH 27, 2018

PLANNING BOARD FILE #

APPROVED BY THE EXETER PLANNING BOARD

ON _____

CHAIRMAN: _____ *AND*

SECRETARY: _____

DIG SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

NOTES:

1. FORMER GREENHOUSE AREA – SHALLOW SOIL CONTAINING LEAD CONCENTRATIONS EXCEEDING THE NHDES STANDARD APPLICABLE TO RESIDENTIAL PROPERTIES WILL BE REMOVED AND PROPERLY DISPOSED AT AN OFF-SITE DISPOSAL FACILITY.
2. FORMER BOILER & PACKING BUILDINGS AREA – SOLID WASTES WILL BE IDENTIFIED, REMOVED AND PROPERTY DISPOSED OF AT AN OFF-SITE FACILITY. COAL ASH/CLINKER WILL BE CONSOLIDATED IN THE FORMER PACKING BUILDING AREA, CAPPED AND COVERED OR USED AS ROAD BASE.

100 50 0 100
Graphic Scale in Feet

REV.	DATE	DESCRIPTION	DR	CK

TFM MSC

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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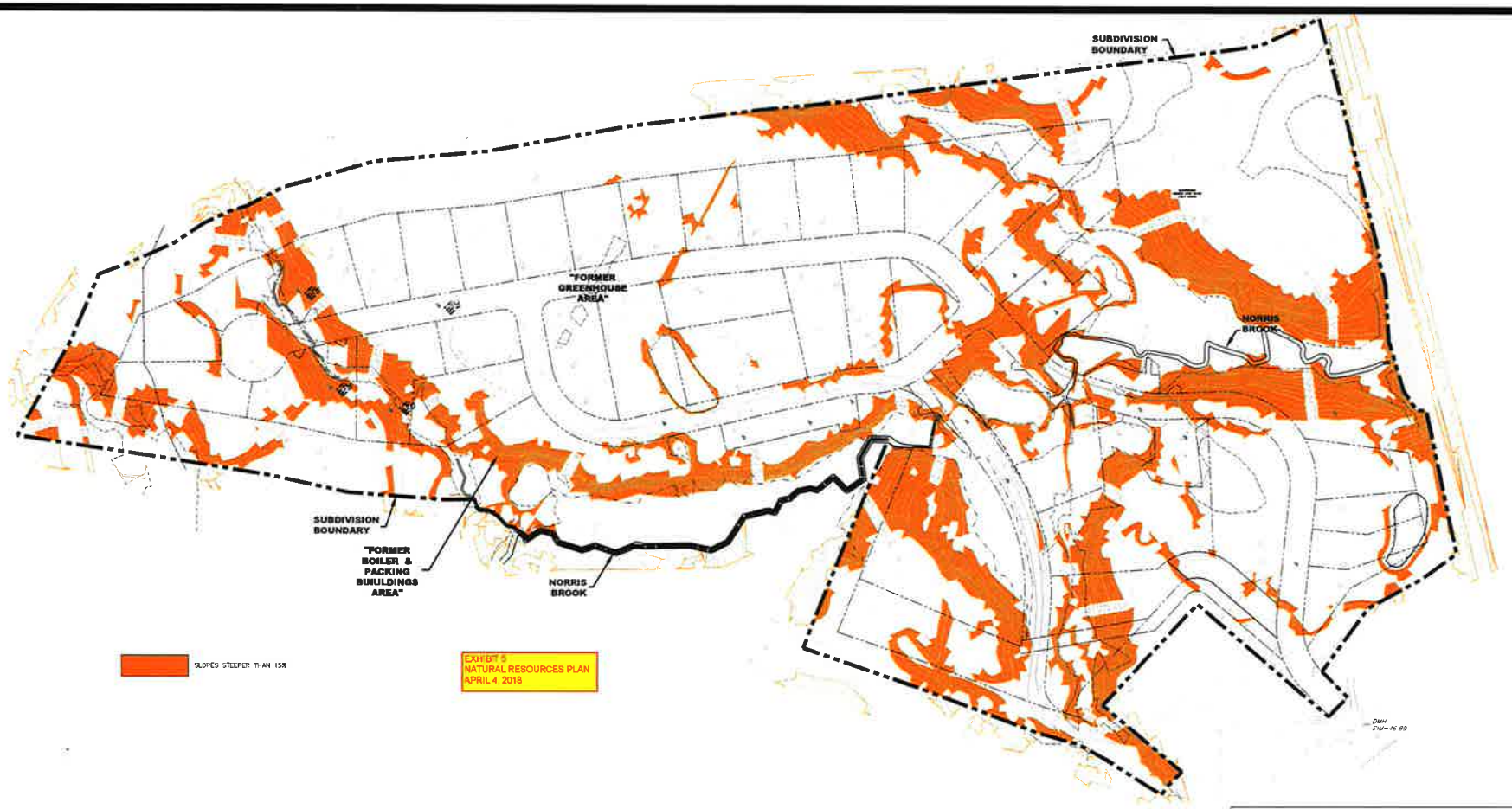

EXHIBIT 5
NATURAL RESOURCES PLAN
APRIL 4, 2018

TAX MAP 54 LOTS 5, 6 & 7 TAX MAP 63 LOT 205

STEEP SLOPES

EXETER ROSE FARM

FOREST STREET & OAK STREET EXTENSION

EXETER, NEW HAMPSHIRE, COUNTY OF ROCKINGHAM

BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUST

OWNED BY

EXETER ROSE FARM, LLC &

BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS

SCALE: 1"=100'(22X34)
1"=200'(11X17)

MARCH 27, 2018

PLANNING BOARD FILE #

APPROVED BY THE EXETER PLANNING BOARD

ON _____

CHAIRMAN: _____ *AND*

SECRETARY: _____

DIG SAFE
811 OR 1-888-DIG-SAFE
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

NOTES:

1. FORMER GREENHOUSE AREA – SHALLOW SOIL CONTAINING LEAD CONCENTRATIONS EXCEEDING THE NHDES STANDARD APPLICABLE TO RESIDENTIAL PROPERTIES WILL BE REMOVED AND PROPERLY DISPOSED AT AN OFF-SITE DISPOSAL FACILITY
2. FORMER BOILER & PACKING BUILDINGS AREA – SOLID WASTES WILL BE IDENTIFIED, REMOVED AND PROPERTY DISPOSED OF AT AN OFF-SITE FACILITY. COAL ASH/CLINKER WILL BE CONSOLIDATED IN THE FORMER PACKING BUILDING AREA, CAPPED AND COVERED OR USED AS ROAD BASE

100 50 0 100
Graphic Scale in Feet

REV	DATE	DESCRIPTION	DR	CK

TFM

MSC

Civil Engineers
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Wetland Functional Evaluation

Of

Exeter Rose Farm, LLC
Assessors Tax Map 54 / Lots 5-7 and Tax Map 63 / Lot 205
Oak Street Extension
Exeter, NH

Prepared for

Exeter Rose Farm, LLC
953 Islington Street, Suite 23D
Portsmouth, NH 03801

By

Marc E. Jacobs
Certified Wetland & Soil Scientist
P.O. Box 417
Greenland, NH 03840-0417

April 3, 2018

Exeter Rose Farm, LLC
Exeter, NH
April 3, 2018

EXETER ROSE FARM, LLC

Wetland Functional Evaluation

TABLE OF CONTENTS

Wetland Functional Evaluation
Exeter Rose Farm, LLC
Oak Street Extension
Exeter, NH

1.0 Introduction

Pursuant to the request by the Exeter Rose Farm, LLC to the Town of Exeter, New Hampshire for subdivision approval involving work within wetlands and, more specifically, the Wetland Conservation District (Zoning Article 9 - §9.1.6.C) at the above-referenced location off of Oak Street Extension in Exeter, NH, specifically Assessors Map 54 – Lots 5-7 and Map 63 – Lot 205, we herewith submit this Wetland Functional Evaluation to supplement the application as required under Town of Exeter, New Hampshire – Site & Subdivision Regulations – Section 9.9.3.2.

This report provides an assessment of the existing wetland functions and values at this location according to the United States Army Corps of Engineers - New England District, Highway Methodology Workbook *Supplement* – September 1999 Edition (updated in 2015). This study does not attempt to evaluate the potential effects of global climate change and associated sea level rise or tidal surge on the functions and values of wetlands at the subject properties. This evaluation may use the terms subject properties and subject property interchangeably.

This evaluation assesses the functions and values listed below for primary wetland areas based upon the current condition, noting that the site is partially developed. The functions and values of a wetland or adjacent wetlands may be altered, or more specifically, the effectiveness of a wetland or adjacent wetlands to provide a particular function may be altered (increased or decreased) as a result of modifications to adjacent uplands, impacts to wetlands elsewhere on site or other development in the watershed.

Attached is a copy of a composite 7.5 X 15 Minute United States Geological Survey Quadrangle(s) on which is depicted the approximate location of the subject property. Digital images and associated descriptions are also attached to this report. Refer to Exhibit 1.

2.0 Existing Conditions

2.1 General Property Description

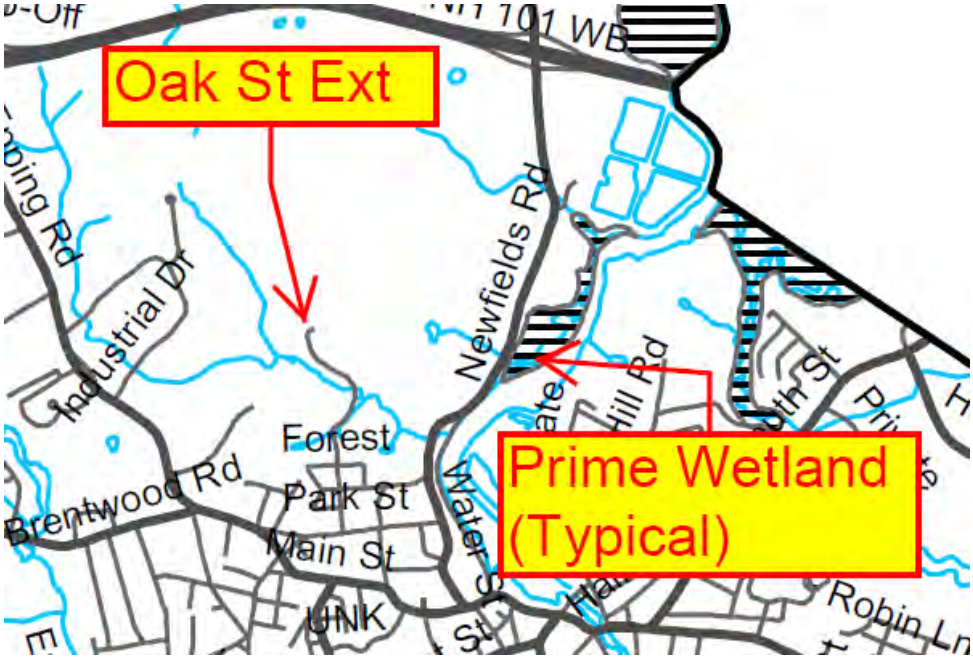
The site is bounded to the east by active railroad tracks, to the north by the Henderson-Swasey Town Forest belonging to the Town of Exeter, to the west by developed industrial lands (Industrial Drive and Commerce Way) as well as Norris Brook Condominiums and to the south by densely developed residential neighborhoods of single-family homes. A large gas main bisects the western tip of the property.

Historic land uses at this location included a brick yard and later, rose growing greenhouses and packing facilities as well as residential housing. Significant portions of the site, including wetlands, have been altered and some areas are contaminated with lead, coal ash and solid waste associated with the prior land uses. Numerous man-made wetlands and retention ponds exist as a result of excavation and other earth moving activities. The man-made retention pond located east of and adjacent to Oak Street Extension, between the spring house and the pump house described below, was created by excavation and impoundment. The impoundment consists of a poured concrete structure installed across Norris Brook. The concrete structure has been partially breached due to erosion at the south end. The dredge spoils from pond excavation are stockpiled on the south side of the pond in what were likely wetlands before they were filled. The retention pond contains a large plume of sediment from upstream. It does not appear that this pond was used for irrigation. The man-made retention ponds located north of Oak Street Extension captured runoff from the greenhouses. The runoff collected in the largest retention pond was then reused for irrigation. The hydrant along Oak Street Extension indicates that this retention pond also serves as fire protection.

The property is partially developed with 9 existing residential dwellings (5 of which are currently occupied) and several garages / outbuildings that are accessed by Oak Street Extension, which is in significant disrepair. The concrete structure that formerly housed the rose packing operation and possibly the heating system also remains. Areas of the property that formerly housed the greenhouse operations are now generally vegetated with fields that have a shrub / sapling component dominated by black locust (*Robinia pseudoacacia*). When the greenhouses were dismantled the concrete slabs were bulldozed and partially buried / exposed remnants of the concrete slabs as well as piping and other materials can be seen throughout the area and remain a significant hazard to pedestrians, especially when occasional subsurface cavities are encountered. Remaining areas of the property are generally forested with a mix of softwood and hardwood tree species dominated by oak, pine and maple. Norris Brook, a perennial stream, runs along and through portions of the property. Another unnamed perennial stream (according to some sources) and two unnamed intermittent streams as well as numerous groundwater seeps (owing to surficial geology and site soils) also drain the property and all are tributary to Norris Brook within the confines of the site. Norris Brook eventually drains to the Squamscott River, which is tidally influenced at this juncture. The influence of the normal tidal cycle does not extend to the subject properties. Most streams within the property sustain associated wetlands. There are numerous mountain bicycle trails throughout the property. A gas line/easement, 35-feet in width, traverses the western tip of the property along Norris Brook. There is a spring house on the property, along Oak Street Extension, near Forest Street, which is visited frequently by residents of the town. Water is provided to the existing homes on the subject property from the spring via a pump house (which is located adjacent to Oak Street Extension, between Oak Street Extension and aforementioned impoundment / pond). The existing homes are served by individual sewage disposal systems of unknown origin and status.

There are no prime wetlands on or immediately adjacent to the subject property. Prime wetlands are those wetlands with higher functions and values and receive additional protection under state law. Exeter has municipally designated prime wetlands recognized by NHDES. Refer to Figure 1 below.

Figure 1. Prime Wetlands (NHDES Web Site)



2.2 General Project Description

The project proposes an open space development with construction of 3,788± linear feet of new roadway, servicing approximately 37 new single-family homes. The proposed project will be serviced by municipal water and sewer utilities. Portions of the site which are contaminated with lead, coal ash and solid waste are proposed to be remediated during development. The project proposes to relocate the existing trail that traverses the western end of the property. The project is also proposing 23± acres of open space (approximately 46 percent of the property) as well as a neighborhood recreation area. The project will be covered by a Home Owners Association (HOA), which will be responsible for management of the open space and spring in perpetuity.

2.3 Study Area Determination

Determination of suitable study areas can be somewhat subjective depending upon what criteria are used to define the study area, especially since wetlands are natural systems and do not recognize political boundaries such as property lines and because all wetland systems have variations in physical attributes within a seemingly discreet wetland area.

For this study we distinguished four study areas with an emphasis on hydrology and, to a lesser degree, flooding. Highway Methodology Wetland Function-Value Forms were completed for each of the four study areas and copies of the completed forms are attached. Refer to the attached map (Exhibit 2) for a graphic representation of the lateral extent of the four study areas.

Wetlands associated with Norris Brook upstream and downstream of Oak Street Extension were separated. They were apparently part of the same wetland system prior to the construction of Oak Street Extension. The fill placed to construct Oak Street Extension, especially when considered

with the culvert at Oak Street Extension, create a logical break. Norris Brook is a perennial stream which flows west to east. Wetlands associated with Norris Brook located upstream (west) of Oak Street Extension are shaded in blue while wetlands adjacent to Norris Brook located downstream (east) of Oak Street Extension are shaded in green on Exhibit 2. Wetlands associated with the unnamed perennial stream were combined with the downstream section of wetlands associated with Norris Brook and are also shaded in green. The two primary intermittent streams that drain to Norris Brook were also evaluated separately. Wetlands associated with the western intermittent stream, which is proposed to be crossed by a cul-de-sac, are shaded in yellow while wetlands associated with the eastern intermittent stream are shaded in red on Exhibit 1.

Wetlands adjacent to Norris Brook are sustained by periodic overbank flooding supplemented by significant groundwater inputs, with lesser inputs from sheet / overland flow and finally direct precipitation. Numerous groundwater seeps can be observed around the Norris Brook drainage area and we have noted two of the more significant seeps on Exhibit 2.

The subject property includes numerous isolated wetlands that were not included in the evaluation. These isolated wetlands are man-made, both intentionally for purposes such as irrigation and incidentally during removal of the greenhouse facilities. Several of the isolated wetlands are contaminated with hazardous materials, as are adjacent uplands, and as such are proposed to be altered or eliminated during remediation of these contaminated areas.

2.4 Wetland Study Area Descriptions

Western Intermittent Stream (Yellow) Study Area

Wetlands associated with the western intermittent stream are depicted in yellow shading on Exhibit 2. The stream has origins in largely forested areas located north of the subject property and the gas pipeline. The gas pipeline includes a gravel access road which concentrates and conveys the stream through a high-density polyethylene (HDPE) corrugated plastic culvert at the property line with the subject. The culvert is perched at this location. The stream flows through a forested area with a dense canopy dominated by coniferous trees (White pine) and poorly drained hydric soils which are dominated by marine sediments having silt and clay textures. The stream and wetlands are the same in many locations although there are patches of adjacent wetlands, especially where supplemental hydrology provided by groundwater exists. The groundwater inputs are not as strong as those along Norris Brook due to the adjacent upland soil types which are dominated by loamy glacial till parent materials. There are patches of scrub-shrub wetlands associated with the groundwater influenced areas, otherwise the dominant wetland classification according to the National Wetland Inventory (NWI) and Cowardin system is Riverine, Intermittent, Unconsolidated Bottom, Intermittently Flooded (R4UBJ). The NWI has identified this stream as perennial however we have observed the stream in a no-flow condition during non-drought conditions. The relatively small watershed for this stream also contradicts a conclusion that the flow is perennial.

Norris Brook – Upstream (Blue) Study Area

Wetlands associated with Norris Brook located upstream (west) of Oak Street Extension are depicted in blue shading on Exhibit 2 and generally involve palustrine forested and scrub-shrub vegetation cover types. Watson Brook is tributary to Norris Brook at the west end of this study area as is the western intermittent stream described above.

The wetlands and Norris Brook are confined by steep slopes in this area. The steep slopes on the north (south facing) side are adjacent to Oak Street Extension and the former greenhouse packing and heating facilities. Much of the length of the north slope starting near the man-made retention basin at the base of the slope behind the former packing house and Oak Street Extension has been filled and the fill often includes solid waste such as white goods and automobile tires as well as coal ash. Groundwater seeps can be observed emanating from these waste materials in some locations. The fill appears to have been pushed over an existing bank in many places and is nestled amongst large trees in numerous locations. Indeed, the largest tree observed on site is a 32.5-inch diameter White oak located on the north slope below the former packing house. The north slope is currently forested however as numerous trees have grown back since this fill was placed.

The south slope is forested with a mix of soft and hardwood species that include a significant number of conifers such as hemlock. One groundwater seep on the south slope may be receiving stormwater from adjacent development and appears to be experiencing minor erosion with subsequent sedimentation of the wetland at the toe-of-slope and Norris Brook.

Norris Brook is moderately sinuous in this study area and drains to a 36-inch diameter reinforced concrete pipe (RCP) at Oak Street Extension. The culvert is partially plugged by debris and acts as a constriction to flow. The remains of an earthen berm were observed adjacent to the culvert. The berm resembles an old beaver dam but no associated remains of a beaver lodge have been observed. The berm has been breached. The dominant substrate in the study area involves poorly drained soils derived from marine sediments having silt and clay textures. There are pockets of very poorly drained soils confined within the poorly drained soils and we speculate that their existence and development may be associated with the flooding or impoundment caused by the aforementioned berm or beavers but this is not clear. (Some of the various resource maps we have examined over the last 2 years indicate flooding or ponding in this area.) Braided channels can be observed and indicate occasional overbank flooding.

Water quality of Norris Brook appears to be good. Turbidity is low overall but the intermittent stream and Watson Brook contribute sediment and the stream bottom is unconsolidated and also likely contributes sediment during larger storms. It is not known if the pollutants associated with the portion of the site which is contaminated exist in the stream. Lead is relatively immobile and the solid waste is not likely an issue.

The relatively large lobe of the wetland area shaded in blue that extends north-south and parallel to Oak Street Extension is sustained largely by groundwater with occasional intermittent flow from impervious and slowly pervious surfaces associated with Oak Street Extension and is eventually tributary to Norris Brook. The area is predominantly vegetated with shrubs and saplings and was likely contiguous with wetlands adjacent to the unnamed perennial brook before the construction of Oak Street Extension. The dominant substrate in this area involves poorly drained soils derived from marine sediment parent materials dominated by silt and clay textures. This area does not generally support standing water although it is conceivable that standing water backed up into this area if the berm identified above was ever functional.

Norris Brook – Downstream (Green) Study Area

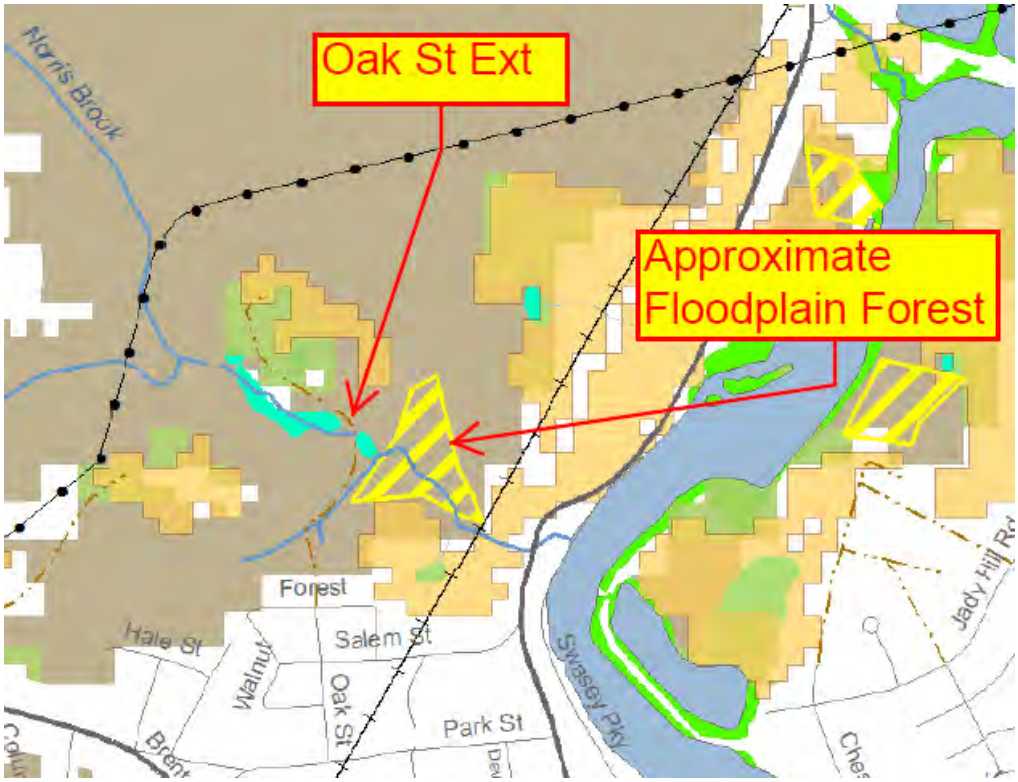
Wetlands located downstream (east) of Oak Street Extension are depicted in green shading on Exhibit 2 and generally involve palustrine forested and scrub-shrub vegetation cover types that are moderately dense to dense in most locations. There is a pond immediately downstream (east) of Oak Street Extension. The pond was created via a combination of excavation and impoundment. The excavation / dredge spoils were stockpiled to the south of the pond in what were likely wetlands. The impoundment is created by a concrete structure which has been partially breached by erosion at the south end. There is a large plume of sediment in the pond, attesting to the significant erosion and sediment transport taking place from Norris Brook, Watson Brook and the intermittent stream located upstream (west) of Oak Street Extension.

The wetlands associated with Norris Brook are confined by steep slopes in this study area, especially toward the east and railroad tracks. The slopes are generally forested with mature mixed hardwood trees with lesser amounts of coniferous softwoods.

Groundwater seeps are apparent and the most significant is located on the slope near the old jailhouse on Forest Street which drains to the unnamed perennial stream that is also tributary to Norris Brook. The slope along the east side of Oak Street Extension, between Oak Street Extension and the unnamed perennial stream, is generally comprised of fill materials and supports a large colony of Japanese knotweed, an invasive species. The channel which confines the unnamed perennial stream, or significant portions thereof, continues to develop in response to the filling of Oak Street Extension and excavation of the pond and deposition of the dredge spoils. The unnamed perennial stream is experiencing erosion in various locations with subsequent turbidity into Norris Brook just below the dam where the unnamed stream enters. Numerous bricks and brick pieces can be observed in the unnamed perennial stream channel near the juncture with Norris Brook. Refer to Images 1 and 2.

Norris Brook is moderately sinuous in this study area and drains to a 56-inch wide by 66-inch tall box culvert comprised by granite blocks/slabs at the downstream (east) property line and railroad tracks. The culvert is partially plugged by debris and may act as a minor constriction to flow based upon observations of obscure staining or siltation on the granite blocks. The dominant substrate in the study area involves poorly drained soils derived from marine sediments having silt and clay textures although significant sandy areas can be found. Braided channels can be observed and indicate occasional overbank flooding. Refer to Figure 2 below from the Natural Resources Inventory prepared for the town in 2011/2012 which indicates the approximate floodplain forest. Keeping the scale of Figure 2 in mind, the floodplain forest coincides reasonably well with the Norris Brook study area shaded in green on Exhibit 1.

FIGURE 2 Floodplain Forest (Exeter Natural Resource Inventory – Map 2)



Water quality of Norris Brook appears to be good. Turbidity is low overall but the unnamed perennial stream contributes sediment and the bottom of Norris Brook is unconsolidated and also likely contributes sediment to the stream flow during larger storms.

Eastern Intermittent Stream (Red) Study Area

The wetlands associated with the eastern intermittent stream are shaded in red on Exhibit 2. The stream has origins in largely forested areas located on private property north of the subject property as well as the Henderson-Swasey Town Forest. The watershed (19 Ac) that contributes to this wetland is insufficient to support perennial flow. The wetland has two distinct lobes. The western lobe extends off site and conveys intermittent stream flow. The eastern lobe stays on site and provides sheet flow and groundwater discharge that, due to the small subwatershed, never quite develops channel flow.

The dominant vegetation cover types include forest and scrub-shrub. The dominant substrate involves poorly drained hydric soils derived from marine sediment parent materials having silt and clay textures. Adjacent uplands are generally forested but the forest was previously altered and is regenerating however the area is generally well shaded from thermal impacts, with the possible exception of the shrubby area near the outlet which lacks a dense tree canopy. This study area is generally free from obvious dumping and other similar activities that are common to the upper reaches of the Norris Brook watershed on this property.

The intermittent stream passes through a constriction at its outlet from this study area, where it meets the green study area, owing to a combination of natural and man-made influences. The constriction coincides with an old access road which took advantage of a narrow reach on the wetland created by natural topography. The access road wetland crossing does not appear to have altered the topography substantially although there are a significant number of bricks in the area which would suggest a structure of some sort was installed here previously. Regardless, the stream flow is restricted here, resulting in a small area of shallow ponding immediately upstream and minor moderation of stream flows. However, just below the outlet the constriction results in an increase in flow velocity and turbulence downstream. The increased turbulence has resulted in some scouring and erosion as well as corresponding sedimentation of downstream wetlands in the green study area.

3.0 Wetland Functions and Values

Wetland functions are self-sustaining properties and physical attributes of wetlands that exist without regard to subjective human values. Wetland values are benefits derived from these functions and physical attributes. The functions assessed by the US Army Corps of Engineers Highway Methodology are identified below with a brief explanation of what each function and value considers.

3.1 Functions

Groundwater Recharge/Discharge – The potential for a wetland to recharge water to an aquifer or discharge groundwater to the surface.

Floodflow Alteration (Storage & Desynchronization) – The potential for a wetland to reduce flood damage by attenuating floodwaters through storage and desynchronization.

Fish/Shellfish Habitat – The potential for waterbodies associated with wetlands to provide suitable habitat for fish or shellfish.

Sediment/Toxicant/Pathogen Retention – The potential for the wetland to protect water quality by trapping sediments, toxicants and pathogens.

Nutrient Removal/Retention/Transformation – The effectiveness of wetlands to protect water quality and prevent adverse effects associated with excess nutrients in a watershed.

Production Export – The ability of the wetland to produce food for humans or other organisms.

Sediment/Shoreline Stabilization – The ability of a wetland to stabilize stream banks or shorelines against erosion.

Wildlife Habitat – The effectiveness of the wetland to provide suitable habitat for wildlife.

3.2 Values

Recreation – The ability of the wetland and any associated waterbodies to provide consumptive (e.g. hunting) and non-consumptive (e.g. hiking) recreational opportunities.

Educational/Scientific Value – The value of the wetland as an outdoor classroom.

Uniqueness/Heritage – The value relating to the effectiveness of the wetland to provide special values such as unique geologic features.

Visual/Aesthetics – The visual or aesthetic qualities of a wetland.

Threatened/Endangered Species Habitat – The effectiveness of the wetland to support threatened or endangered species.

4.0 Assumptions

The assessment of wetland functions and values can be an inherently subjective process. The Highway Methodology strives to eliminate potential bias through implementation of a qualitative and descriptive approach to functional assessment by requiring the evaluator to review a list of considerations and qualifiers for each function or value. The list of considerations/qualifiers is attached to this report as Appendix A.

The Highway Methodology lacks definitions or guidelines for certain abstruse terms associated with the considerations and qualifiers discussed, therefore, unless stated otherwise in this document, the evaluation has made the following assumptions and/or interpretations as identified below by function/value and consideration/qualifier. The considerations/qualifiers and associated assumptions are numbered to correspond to numbering identified in the Appendix A of the Highway Methodology Workbook Supplement.

<u>Groundwater Recharge Function</u>

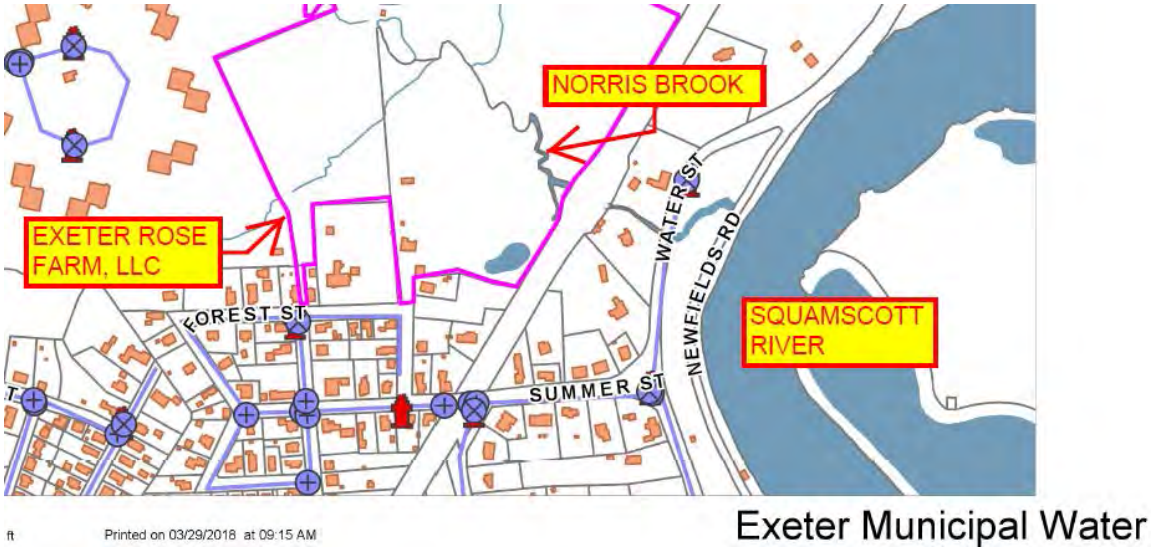
Consideration/Qualifiers 1 and 2

Public or private wells occur downstream of wetland. Potential exists for public or private wells downstream of the wetland.

Assumption

Downstream is interpreted to involve the entire watershed, even where it extends off-site, ending at the juncture with the Squamscott River for our purposes. The Highway Method does not distinguish between dug and drilled wells although their source water is frequently different. Predominant soils conditions in the area do not lend themselves to productive dug wells. The above notwithstanding, the area downstream of the subject site is served by municipal water. Refer to Figure 3 below from Exeter GIS depicting the extent of municipal water service. The bounds of Exeter Rose Farm are indicated in pink. This assumption also applies to Consideration/Qualifier 6 – Sediment/Toxicant/Pathogen Retention Function.

Figure 3 Exeter Municipal Water (Exeter GIS)



Consideration/Qualifiers 3 and 11

Wetland is underlain by stratified drift. Groundwater quality of the stratified drift aquifer within or downstream of the wetland meets drinking water standards.

Assumption

Water quality is based on visual observation only. No samples were collected or tested. This assumption notwithstanding, there are no stratified draft deposits within the area. The area is also not considered a drinking water focus area according to the Natural Resource Inventory. Refer to Figure 4 below.

Consideration/Qualifier 12

Quality of water associated with the wetland is high.

Assumption

Water quality is based on visual observation only. No samples were collected or tested. (Applies to Number 18 under Uniqueness/Heritage also.)

<u>Floodflow Alteration Function</u>

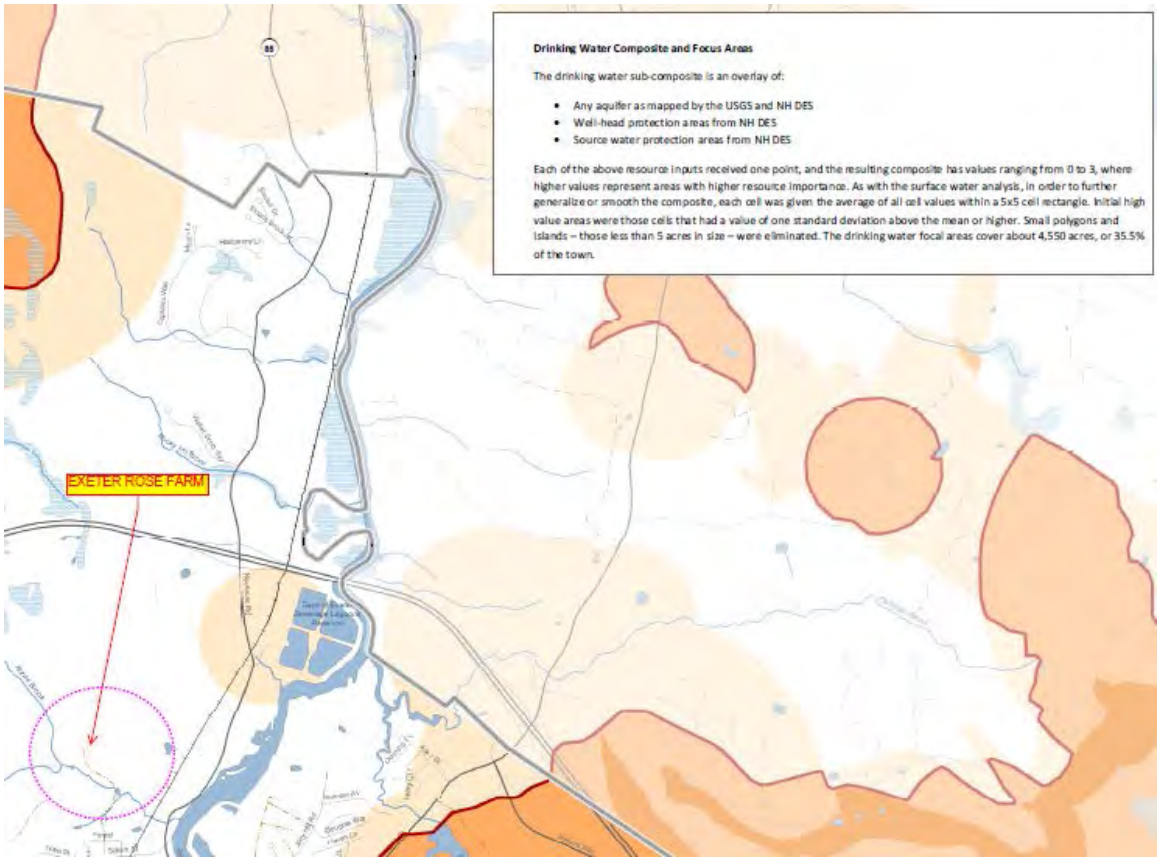
Consideration/Qualifier 1

Area of this wetland is large relative to its watershed.

Assumption

For the purposes of this evaluation, a wetland is considered to be large relative to its contributing watershed if it represents approximately 25 percent or more of the watershed area.

Figure 4 Drinking Water Focus Area (Exeter Natural Resource Inventory – Map 7)



Consideration/Qualifier 11

Valuable properties, structures or resources are located in or near the floodplain downstream from this wetland.

Assumption

Downstream is interpreted to involve the entire watershed, even where it extends off-site. Therefore, it is assumed that valuable properties generally lie in or near the floodplain downstream from the wetland at some point in the watershed. It is noteworthy that Norris Brook, which drains the subject property, travels a short distance before discharging to the Squamscott River, at which point any flood affects are neutralized.

<u>Fish/Shellfish Habitat Function</u>

Consideration/Qualifier 3

Size of this wetland is able to support large fish/shellfish populations.

Assumption

Evidence of any fish/shellfish population was interpreted to constitute a large population.

Sediment/Toxicant/Pathogen Retention Function

Consideration/Qualifier 5

Long duration water retention time is present in this wetland.

Assumption

Long duration water retention time is interpreted as any time period of sufficient duration that will result in settling of suspended solids constituted by sand and silt size soil particles; excluding clay size soil particles (for which settling times are often calculated in days or even weeks, not hours).

Consideration/Qualifier 8

The wetland is known to have existed for more than 50 years.

Assumption

Best professional judgment was used to estimate the relative age of wetlands. Multiple versions of county soil surveys, aerial photographs and/or topographic quadrangles were not consulted. Natural wetlands are generally assumed to be more than 50 years old.

Sediment/Shoreline Stabilization Function

Consideration/Qualifier 4

Potential sediment sources are present upstream.

Assumption

Upstream is interpreted to terminate at the property line.

Wildlife Habitat Function

Consideration/Qualifier 2

Water quality of the watercourse, pond, or lake associated with this wetland meets or exceeds Class A or B standards.

Assumption

Water quality is based on visual observation only and is assumed to meet Class A or B standards where no obvious signs of excessive turbidity or other pollution were observed.

Consideration/Qualifier 14

Wetland exhibits a high degree of plant species diversity.

Assumption

A high degree of plant species diversity was generally assumed to be present where a preliminary inventory of plants at a representative observation location within the subject area revealed a significant number of species relative to other sites in the subject area.

Consideration/Qualifier 15

Wetland exhibits a high degree of diversity in plant community structure (e.g., tree/shrub/vine/grasses/mosses)

Assumption

The presence of representatives of the tree, sapling, shrub, vine, herb/grass, & moss strata was interpreted to represent a high degree of diversity in plant community structure.

Recreation Value

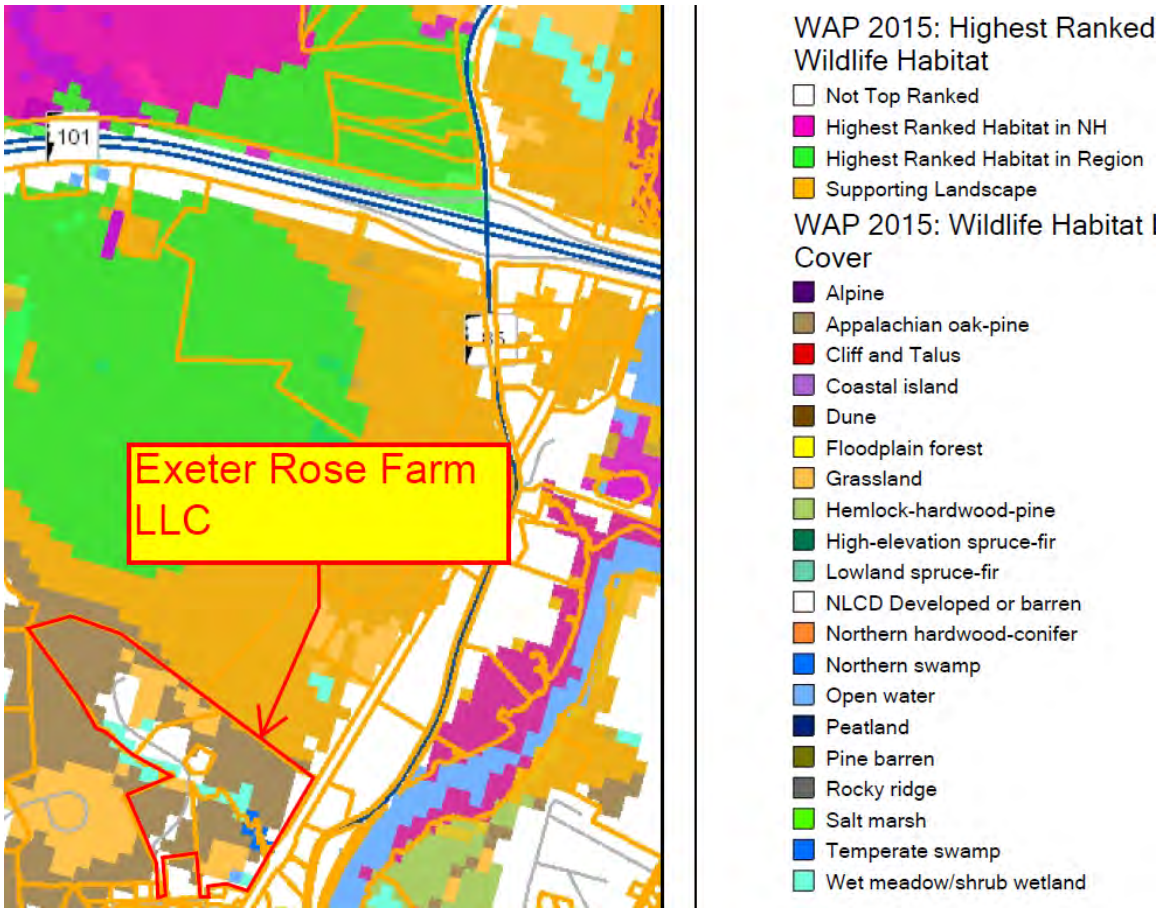
Consideration/Qualifier 5

Wetland is a valuable wildlife habitat.

Assumption

All wetlands provide habitat of one degree or another. It is our interpretation that valuable wildlife habitat refers to wetland wildlife habitat and furthermore that valuable wetland wildlife habitat possesses the physical attributes such that it can reasonably be anticipated to provide habitat for important wildlife species; those species which owe all or a significant part of their life cycle to wetlands. We note that the subject property is not identified on NH Fish and Game Wildlife Action Plan maps as providing Highest Ranked Habitat in NH or Highest Ranked Habitat in the Region. These habitat areas are shown in Figure 5 below in magenta and green respectively.

Figure 5 Wildlife Action Plan (NH Granit)



In addition to notations of physical attributes made during our numerous site visits dating back to 2015, more recently we placed game trail cameras in two strategic locations within wetlands adjacent to Norris Brook, one upstream of Oak Street Extension and one downstream, to inform our evaluation of wildlife utilization in these areas. These cameras possess a detection range of 60-feet and 70-foot nighttime infrared illumination range. We have monitored the devices periodically and attached images (numbers 3 and 4) of wildlife captured by these cameras to this document.

Consideration/Qualifier 7

High visual/aesthetic quality of this potential recreation site.

Assumption

The presence of three or more wetland classes was interpreted to represent high visual and aesthetic quality. (This is consistent with Educational/Scientific Value consideration/qualifier #3, Uniqueness/Heritage Value consideration/qualifier #4 and Visual/Aesthetics Value consideration/qualifier #1.)

Educational/Scientific Value

Consideration/Qualifier 9

Potential educational site is within safe walking distance or short drive to schools.

Assumption

"Safe walking distance" is interpreted to be less than ¼ mile from an educational facility. (Distance is not the sole measure of a safe walk however. "Short drive" is interpreted to be less than 3 miles form an educational facility. Note that Main Street School (grades K-2) is the closest school to the site at roughly 3,500 feet.) (This interpretation also applies to Recreation above and Uniqueness/Heritage.)

Consideration/Qualifier 13

No known safety hazards exist within the potential educational site.

Assumption

"Safety hazards" exist everywhere and no activity is without risk. Safety hazards in the outdoors generally involve physical trip and fall hazards like roots, rocks and holes as well as environmental hazards such as poison ivy and bee stings; and both types are known to occur commonly on virtually every natural site. However, for the purpose of this evaluation, known safety hazard is interpreted to involve unusual hazards that a reasonable person would not expect to commonly find in the forest such as explosives, shooting ranges or hazardous waste. (This assumption/interpretation also applies to #10 Uniqueness/Heritage.)

Uniqueness/Heritage Value

Consideration/Qualifier 19

Opportunities for wildlife observation are available.

Assumption

Most wildlife observations are chance encounters but it is assumed that "opportunities for wildlife observations" are available in one form or another at virtually any wetland or location if the observer is quiet and spends enough time. (Most wildlife studies and their conclusions about anticipated use by wildlife are based upon an evaluation of a particular locations physical attributes and any signs of wildlife and generally not on observations of actual wildlife.)

Endangered Species Habitat

Consideration/Qualifier 1/2

Wetland contains or is known to contain threatened or endangered species.

Assumption

The project has contacted the Natural Heritage Bureau (NHB) for information on rare, threatened or endangered species and a copy of NHB report is attached to this document. The project continues to work with the NHB and New Hampshire Fish and Game Department to respond to their concerns so we have not addressed this value individually for each study area.

5.0 List of Plants and Animals

5.1 List of Wildlife Observed

Birds

Pileated woodpecker	(*Dryocopus pileatus*) (audio confirmation)
Black-capped chickadee	(*Poecile atricapillus*)
American robin	(*Turdus migratorius*)
Blue jay	(*Cyanocitta cristata*)
Northern cardinal	(*Cardinalis cardinalis*) (audio confirmation)
American goldfinch	(*Carduelis tristis*)
Eastern blue bird	(*Sialia sialis*)
Dark-eyed junco	(*Junco hyemalis*)
Wild turkey	(*Melleagris gallopavo*) (tracks)
Red-tailed hawk (overhead)	(*Buteo jamaicensis*) (audio and visual confirmation)
Turkey vulture (overhead)	(*Cathartes aura*)
Mallard	(*Anas platyrhynchos*)

Mammals

Gray squirrel	(*Sciurus carolinensis*)
Raccoon	(*Procyon lotor*) (tracks)
White-tail deer	(*Odocoileus virginianus*) (tracks, scat, images)

Reptiles

Turtle	(No positive identification)

5.2 List of Common Vegetation (without regard to location)

The following is a list of vegetation which was commonly observed during numerous trips to the site to identify and delineate wetlands and during other site investigations, including the site visit to make observations for the wetland functional evaluation. This is not intended to represent an exhaustive list of vegetation which can be found at the site. The site is not known to possess habitat for threatened or endangered plant (or animal) species although no exhaustive surveys for sensitive species have been undertaken. Some plant species were identified by persistent remains.

Trees

White pine	*Pinus strobus*
Red Maple	*Acer rubrum*
American beech	*Fagus grandifolia*
Poplar	*Populus* sp.
American elm	*Ulmus americana*
White ash	*Fraxinus americana*
Gray birch	*Betula populifolia*
Black birch	*Betula lenta*
Yellow birch	*Betula alleghaniensis*
Black cherry	*Prunus serotina*
Eastern hemlock	*Tsuga canadensis*
Shagbark hickory	*Carya ovata*
Black locust	*Robinia pseudoacacia*
Box elder	*Acer negundo*
Northern Red oak	*Quercus rubra*
Black oak	*Quercus velutina*
White oak	*Quercus alba*
Hophornbeam	*Ostrya virginiana*

Some tree species can be found growing as shrubs or saplings as well.

Shrubs / Saplings

Apple	*Malus* sp.
Red-osier dogwood	*Cornus sericea*
Red-panicled dogwood	*Cornus racemosa*
Silky dogwood	*Cornus amomum*
Bunchberry	*Cornus canadensis*
Elderberry	*Sambucus canadensis*
Honeysuckle	*Lonicera* sp.*
Ironwood	*Carpinus caroliniana*
Speckled alder	*Alnus rugosa*
Staghorn sumac	*Rhus typhina*
Wild raisin	*Viburnum cassanoides*
Arrowwood	*Viburnum dentatum*
Autumn olive	*Elaeagnus umbellata**
Glossy buckthorn	*Frangula alnus**

Common buckthorn	*Rhamnus cathartica**
Meadowsweet	*Spiraea latifolia*
Willow	*Salix* sp.
Burning bush	*Euonymus alatus**
Winterberry	*Ilex verticillata*
Japanese barberry	*Berberis thunbergii**
Highbush blueberry	*Vaccinium corymbosum*
Witch hazel	*Hamamelis virginiana*
Multi-flora rose	*Rosa multi-flora**
Maleberry	*Lyonia ligustrina*

Herbaceous

Burdock	*Arctium minus*
Wood fern	*Dryopteris cristata*
Curley dock	*Rumex crispus*
Soft rush	*Juncus effusus*
Orchardgrass	*Dactylis glomerata*
Reed canary grass	*Phalaris arundinacea*
Tall fescue	*Festuca arundinacea*
Fine fescue	*Festuca* spp.
Ryegrass	*Lolium perenne*
Garlic mustard	*Alliaria petiolata**
Goldenrods	*Solidago* spp.
Queen Anne's lace	*Daucus carota*
Broad-leaved cat-tail	*Typha latifolia*
Sensitive fern	*Onoclea sensibilis*
Cinnamon fern	*Osmunda cinnamomea*
Royal fern	*Osmunda regalis*
Purple loosestrife	*Lythrum salicaria**
Jewelweed	*Impatiens capensis*
Japanese knotweed	*Polygonum cuspidatum**

Vines

Grape	*Vitis* sp.
Poison ivy	*Toxicodendron radicans* (Also observed growing as a ground cover.)
Virginia creeper	*Parthenocissus quinquefolia*

Aquatic

Duckweed	*Lemna minor*

*These species are thought to be invasive.

6.0 FUNCTIONS & VALUES BY STUDY AREA

The following section discusses and describes the functions and values of each wetland study area. The physical attributes and characteristics of each wetland study area are generally listed on the attached Wetland Function-Value Evaluation Forms or earlier in this report; therefore we have

limited the discussions below. An individual form has been completed for each wetland study area in order to appropriately manage data collection efforts and provide consistency. Similarly, it is difficult to precisely implement many of the considerations/qualifiers since most wetlands are part of larger contiguous wetland systems, only a portion of which may fall within the wetland study area. It is accepted however that conclusions about the effectiveness of a wetland study area to provide a particular function can change depending upon a host of factors which include the assessment area involved and the relative juxtaposition with other wetland resources. Conclusions regarding the functions and values associated with these wetland study areas are summarized below by area.

6.1 Western Intermittent Stream (Yellow) Study Area

Groundwater Recharge/Discharge

Due to the surrounding surficial geology and soils this area does provide limited recharge to groundwater but groundwater discharge is apparent although limited as compared to other areas on site. Groundwater Recharge/Discharge is a principal function of this wetland area.

Floodflow Alteration

At 18,554± square feet (SF) or 0.42 acres, the portion of this wetland that falls on the subject property represents 2% of its watershed. The watershed was calculated at approximately 19± acres as measured starting at the juncture of the intermittent stream and Norris Brook. Our investigations suggest that the inclusion of offsite wetlands will not substantially change this percentage. The stream also has significant topographic relief. Therefore, this wetland has little opportunity to alter flood flows due to landscape position. Floodflow alteration is not a principal function of this wetland area.

Fish and Shellfish Habitat (Freshwater)

Forest land is dominant in the watershed that feeds to wetland. There is a dearth of cover objects present and the stream is intermittent. The wetland is of insufficient size and depth so as not to freeze in the winter. Fish and Shellfish Habitat is not a principal function of this wetland study area.

Sediment/Toxicant/Pathogen Retention

The wetland study area is likely a net supplier of sediment. There are no known toxicant sources in the watershed above the wetland and the wetland lies upstream of known contaminants at this site. Fine grained soils are present but retention times are very short due to topographic relief. Sediment/Toxicant/Pathogen Retention is not a principal function of this wetland area.

Nutrient Removal

This wetland is small compared to its watershed. Deep water and seasonal open water habitat are absent but slowly draining fine textured soils are present. The dense vegetation community needed to utilize any nutrients is generally lacking and potential sources of excess nutrients are generally

absent in the small watershed therefore the opportunity for nutrient attenuation does not exist. Nutrient Removal is not a principal function of this wetland area.

Production (Nutrient) Export

The wetland area is sparsely vegetated and wildlife food sources are generally limited. Nutrient export is not a principal function of this wetland area.

Sediment/Shoreline Stabilization

Minor indications of erosion and siltation can be observed in this wetland. The small size, landscape position, physical attributes and lack of a permanent watercourse deny this area an opportunity to perform this function. Sediment/Shoreline Stabilization is not a principal function of this wetland area.

Wildlife Habitat

By our estimation, less than 40% of this wetland edge is bordered by upland wildlife habitat (brushland, woodland, active farmland, or idle land) at least 500 feet in width. Abandoned residences at the end of Oak Street Extension to the north and development / activity in the industrial park to the south are located within 500 feet. The gas main right-of-way (ROW) represents idle land and creates edge which invites both desirable and less-desirable edge species. Overland access for wildlife to other wetlands is present and the stream and adjacent upland could provide a corridor for more tolerant wildlife species. Wildlife food sources are limited. The wetland does not exhibit a high degree of interspersion of wetland classes and/or open water nor are inclusions of upland present within the wetland. The density of wetland vegetation and degree of diversity is low as is diversity of plant community structure. The wetland study area may provide some suitability for wildlife that is not utterly dependent upon wetlands or for species that can readily adapt to life in other wetlands however, it is not thought that wildlife habitat is a principal function of this wetland area.

Recreation

The wetland is not part of an official recreation area, park, or refuge although it extends into land that comprises the Henderson-Swasey Town Forest which is approximately 250 acres in size and prohibits hunting. Hunting opportunities are very limited, due to proximity to residential dwellings and other development, as are fishing opportunities, due to the intermittent flow. The potential for hiking in the classic sense is low but adjacent uplands provide a suitable connection to the town forest and an existing trail crosses the wetland study area. The wetland does not possess a high visual or aesthetic quality nor is it suitable for boating or canoeing. Most wetlands have some suitability for recreation and this wetland is no exception, but recreation is not a principal value of this wetland area.

Educational/Scientific Value

The potential educational site is relatively undisturbed (the culvert in the gas ROW near the property line notwithstanding) and does not contain a diversity of wetland classes. The wetland is

not considered important wildlife habitat and is not located in or adjacent to a nature preserve or wildlife management area. No signs of wildlife enhancement, such as bird houses and nesting boxes, exist on site. The wetland is not permanently flooded and the stream is intermittent. Potential off-road parking is currently available for a small bus and the wetland is a short drive but not a safe walk to or from local schools. All wetlands have some suitability for educational purposes and this wetland is no exception, however educational/scientific values are not principal values of this wetland area.

Uniqueness/Heritage

Urbanization to the south increases the importance of this wetland. The wetland lacks permanent open water, a high degree of interspersion of wetland classes and open water, three or more wetland classes and a suitable viewing area. The wetland is not known to be a site for research and is not a natural landmark or an exemplary natural community. The wetland is not an important archaeological site nor does it possess natural geologic or biological features which are locally rare. The wetland is not connected to a state or federally designated scenic river. Potential off-road parking is available for a smaller bus, accessibility is reasonably good and the wetland is a short drive (but not a safe walk) to or from schools. Uniqueness / Heritage is not a principal value of this wetland area.

Visual Quality/Aesthetics

The wetland is not dominated by flowering plants or plants that turn vibrant colors in the fall or other seasons. Wetland views are generally absent of trash, debris and other signs of disturbance although adjacent uplands are not. Residential development can be seen from the wetland, especially outside the growing season. The wetland is not considered to be important wildlife habitat. Activity associated with the industrial park can be heard from this wetland. Unpleasant odors were not detected at this wetland. Visual Quality/Aesthetics is not a principal value of this wetland area.

6.2 Norris Brook – Upstream (Blue) Study Area

Groundwater Recharge/Discharge

Due to the surficial geology and soils of surrounding upland areas this wetland provides significant groundwater discharge, which helps to provide base flow and sustain perennial flow for Norris Brook during periods of low precipitation. Groundwater Discharge is a principal function of this wetland area.

Floodflow Alteration

At approximately 82,830 SF or 1.9± acres in size, the portion of this wetland that falls within the confines of the site represents 0.42% of its watershed, which is almost 0.7± square miles (as measured starting where Norris Brook intersects Oak Street Extension. One square mile is roughly 640 acres.).

It should be noted that the figure above includes 668 SF of wetlands (associated with a groundwater seep) which are contiguous to other wetlands associated with Norris Brook but are separated by the property line. Inclusion of the off-site wetlands located between the seep and Norris Brook does not change our conclusions regarding floodflow alteration as this land is steep and does not play a significant role in this function.

The man-made retention pond at the west end of this study area is hydrologically connected to the wetland but it is our observation that the area primarily contains groundwater. Also, its location in the wetland system appears to provide very little additional floodflow alteration benefit.

Norris Brook is moderately sinuous in this area and the vegetation is relatively dense. The 36-inch diameter culvert at Oak Street Extension may be undersized and is also significantly plugged with debris, which acts as a constriction to flow. The Squamscott River is located downstream approximately 1,375 feet distant and there are a limited number of valuable properties downstream which argues against this wetland study area being considered important to flood alteration. It is our feeling however that meaningful alteration of floodflows is being provided (albeit artificially due to the plugged culvert) and thus represents a principal function of this wetland area.

Fish and Shellfish Habitat (Freshwater)

Forest is the dominant cover type in the watershed above this wetland and an abundance of cover objects are present. The culvert discussed above provides a significant impediment to aquatic organism passage due to the fact that the culvert is significantly plugged with debris. Also, the slope of the pipe presents an impediment to aquatic organism passage, especially at low flow. Fish and Shellfish Habitat is therefore not a principal function of this wetland area.

Sediment/Toxicant/Pathogen Retention

Norris brook is a potential source of sediment as is the aforementioned western intermittent stream as well as Watson Brook which is experiencing apparent channel and bank erosion. The wetland has demonstrable floodflow desynchronization characteristics and there are known toxicants in the watershed. We believe that Sediment/Toxicant/Pathogen Retention is a principal function of this wetland study area.

Nutrient Removal

The wetland is small relative to its contributory watershed and open water and deep water habitat are absent most of the time (with the possible exception of during large storm events due to the culvert being plugged). The wetland is saturated for most of the season and deep fine grained sediments are present. Dense woody vegetation is generally present and the opportunity, albeit limited, for nutrient attenuation exists. Nutrient Removal is a principal function of this wetland area.

Production (Nutrient) Export

The wetland area is densely vegetated but wildlife food sources are limited and commercial sources are absent. The fertile frond of sensitive fern can provide food for birds such as American woodcock (*Philohela minor*) and wild turkey (*Meleagris gallopavo*). Flowering plants exist,

including purple loosestrife, and can be used by nectar-gathering insects. Fish and shellfish are not found in this wetland. Most wetlands provide some suitability for nutrient production and export but Nutrient Export is not a principal function of this wetland area.

Sediment/Shoreline Stabilization

Minor indications of erosion and siltation can be observed in this wetland and the Norris Brook channel is a net sediment producer but the stream channel is largely at equilibrium with the exception of the juncture with Watson Brook which is actively eroding. However, landscape position, the lack of open water and lack of suitability for boating generally deny this area an opportunity to perform this function. Sediment/Shoreline Stabilization is not a principal function of this wetland area.

Wildlife Habitat

The wetland area has been altered by human/development activity and is fragmented by development (Oak Street Extension – however, since Oak Street Extension was used as the basis to define this study area fragmentation may not apply). The upland surrounding this wetland is partially developed therefore less than 40 percent of the wetland edge is bordered by upland wildlife habitat at least 500-feet in width. The north slope overlooking this wetland was filled with solid waste and other debris and much of the vegetation in the adjacent upland habitat closest to the wetland involves what has grown since the area was last altered. The wetland is directly contiguous with other wetland ecosystems via an intermittent watercourse. Overland access to other wetlands is present. The presence of speckled alder in certain locations is conducive to woodcock populations. Significant avian activity has been observed during site visits. The wetland does not exhibit a high degree of interspersion of wetland classes and/or open water nor are inclusions of upland within the wetland present. The density of wetland vegetation and degree of diversity is moderate to high. In our opinion the wetland study area is providing significant local habitat therefore Wildlife habitat is a principal function of this wetland area. It is worth noting that the New Hampshire Fish and Game – Wildlife Action Plan did not indicate this area as Highest Ranked Habitat in NH (depicted in magenta on Figure 5) or Highest Ranked Habitat in the Region (depicted in green on Figure 5). The area depicted in green in Figure 5 on page 15 appears to coincide with the Henderson-Swasey Town Forest.

Recreation

The wetland is not part of an official recreation area, park, or refuge. The wetland could be considered valuable wildlife habitat but hunting opportunities are very limited, if not prohibited, due to proximity to residential dwellings and other development, as are fishing opportunities due to the culvert discussed previously. The potential for hiking is unlikely but adjacent uplands (at the top-of-slope) may provide a more suitable potential connection to the town forest upon further investigation. The wetland does not possess a high visual or aesthetic quality nor is it suitable for kayaking, boating or canoeing. Norris Brook is perennial but the stream is less than 10–feet wide on average and the navigable distance is too short to be attractive. Most wetlands have some suitability for recreation and this wetland is no exception, but recreation is not a principal value of this wetland area.

Educational/Scientific Value

The wetland could be considered valuable wildlife habitat but is not located in a nature preserve or wildlife management area. Signs of wildlife habitat enhancement are absent. The potential educational site is disturbed by filling and solid waste disposal and does not contain a diversity of wetland classes. No signs of wildlife enhancement, such as bird houses and nest boxes, exist on site. The wetland is not permanently flooded but Norris Brook is perennial. Potential off-road parking is currently available for a small bus and the wetland is a short drive but not a safe walk to or from local schools. All wetlands have some suitability for educational purposes and this wetland is no exception, however educational/scientific values are not principal values of this wetland area.

Uniqueness/Heritage

The wetland lacks permanent open water, a high degree of interspersion of wetland classes and open water and three or more wetland classes. There is no apparent location within the wetland that represents a primary viewing location. The best overall view is from Oak Street Extension or the top-of-slope from adjacent uplands due to the steep slopes but these views are generally only available during the winter when the leaves are off the trees. These primary viewing locations will also include views of adjacent single-family or multifamily residential development. The wetland is not known to be a site for research and is not a natural landmark or an exemplary natural community. The wetland is not an important archaeological site nor does it possess natural geologic or biological features which are locally rare. The wetland is not connected to a state or federally designated scenic river. Potential off-road parking is available for a small bus. The wetland is a short drive (but not a safe walk) to or from schools but accessibility can be challenging due to steep slopes. Solid waste may pose a safety hazard. Urbanization to the south increases the importance of this wetland but Uniqueness/Heritage is not a principal value of this wetland area.

Visual Quality/Aesthetics

The wetland is not dominated by flowering plants but has a significant population of red maple trees and saplings that turn vibrant colors in the fall or other seasons. Residential or other development cannot be seen from the wetland due to adjacent steep slopes but can be viewed while gaining access. The wetland could be considered valuable wildlife habitat. The wetland lacks a good primary viewing location and multiple wetland classes are absent. While, unpleasant odors were not detected at this wetland, Visual Quality/Aesthetics is not a principal value of this wetland area.

6.3 Norris Brook – Downstream (Green) Study Area

Groundwater Recharge/Discharge

Due to the surficial geology and soils of surrounding upland areas, which sometimes involve a sandy cap over silt and clay sediments, this wetland provides significant groundwater discharge, which helps to provide base flow and sustain perennial flow for Norris Brook and the unnamed perennial stream during periods of low precipitation. Groundwater Discharge is a principal function of this wetland area.

Floodflow Alteration

At approximately 145,448 SF or 3.34± acres in size, (including the pond – which is approximately 0.2± acres) this wetland represents 0.5% of its watershed, which is 1.06 square miles (as measured starting at the intersection of Norris Brook and the railroad tracks and includes the watershed for the unnamed intermittent stream which was measured at 0.16 square miles). Norris Brook is moderately sinuous in this area and vegetation is relatively dense. The granite block box culvert at the railroad tracks may be slightly undersized for larger storms, which acts as a minor constriction to flow. The Squamscott River is located downstream approximately 600 feet distant (from where this study area meets the railroad tracks and property line) and there are a limited number of valuable properties downstream, which argues against this wetland study area being considered important to flood alteration. It is our feeling however that, when considered with the pond and concrete structure, and due to other the characteristics of the larger drainage basin, meaningful alteration of floodflows is being provided. The floodflow alteration may not be as significant as the desynchronization provided by the segment of Norris Brook upstream (west) of Oak Street Extension but still represents a principal function of this wetland area.

Fish and Shellfish Habitat (Freshwater)

Forest is the dominant cover type in the watershed above this wetland and an abundance of cover objects are present. The granite block box culvert beneath the railroad provides better than average aquatic organism passage during higher flows but the bottom of the culvert is plugged with debris, up against which sediment has accumulated to a depth of approximately 18 inches. We can confirm that we have never observed Norris Brook not to be flowing but we have also never observed fish in Norris Brook during numerous visits to the site. Fish and Shellfish Habitat is therefore not a principal function of this wetland area.

Sediment/Toxicant/Pathogen Retention

Norris brook is a potential source of sediment as is the unnamed perennial stream described earlier which is experiencing apparent channel and bank erosion. The wetland appears to have demonstrable floodflow desynchronization characteristics and there are known toxicants in the watershed. We therefore believe that Sediment/Toxicant/Pathogen Retention is a principal function of this wetland study area.

Nutrient Removal

The wetland is small relative to its contributory watershed and open water and/or deep water habitat are absent most of the time (with the possible exception of during large storm events). The wetland is saturated for most of the season and deep fine grained sediments are present. Dense woody vegetation is generally present and limited opportunity for nutrient attenuation exists. Nutrient Removal is a principal function of this wetland area.

Production Export

The wetland area is densely vegetated but wildlife food sources are limited and commercial sources are absent. Flowering plants exist, including purple loosestrife, and can be used by nectar-gathering insects. Fish and shellfish are not found in this wetland. Most wetlands provide some

suitability for nutrient production and export but Nutrient Export is not a principal function of this wetland area.

Sediment/Shoreline Stabilization

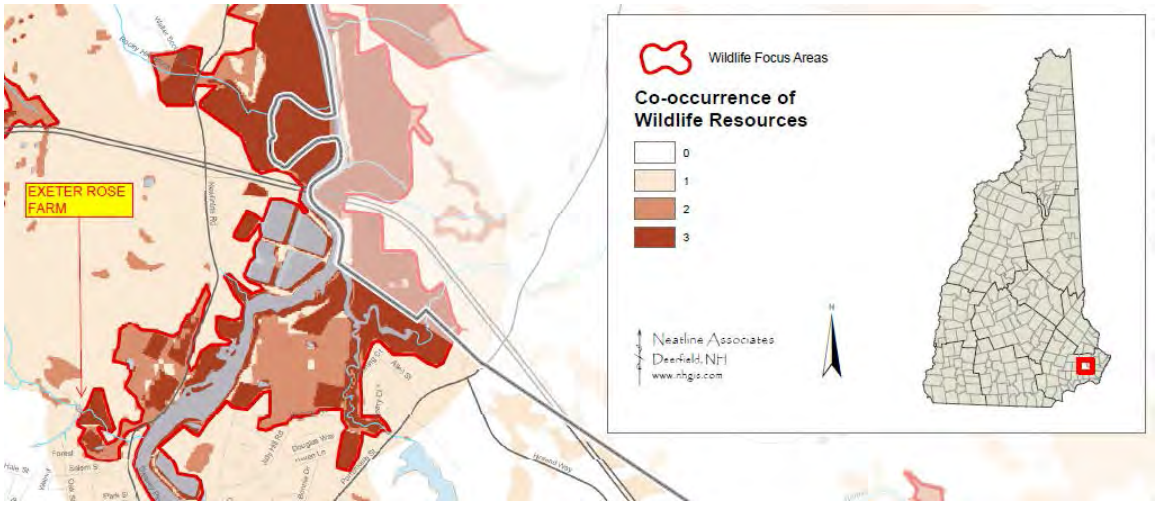
Indications of erosion and siltation can be observed in this wetland and the Norris Brook channel is a net sediment producer but the stream channel is largely at equilibrium. The unnamed perennial stream is actually less stable than Norris Brook and is also a net supplier of sediment. However, landscape position, the lack of open water and fetch as well as lack of suitability for boating generally signify that this wetland area has no opportunity to provide this function. Sediment / Shoreline Stabilization is therefore not a principal function of this wetland area.

Wildlife Habitat

The wetland area has been altered by human/development activity and the larger wetland system has been fragmented by development (the railroad and Oak Street Extension – Oak Street Extension was used as the basis to define this study area so fragmentation may not apply). The upland surrounding this wetland is partially developed but more than 40 percent of the wetland edge is bordered by upland wildlife habitat at least 500-feet in width by our estimation. The 500-foot buffer is largely forested on the north side and is comprised of forest and grassland on the south side. The wetland is directly contiguous with other wetland ecosystems via an intermittent watercourse (the eastern intermittent stream study area). Overland access to other wetlands is present. Significant avian activity has been observed during site visits. The wetland exhibits a higher degree of interspersion of wetland classes than the Norris Brook – Upstream (Blue) Study Area.

With the exception of the pond impounded by the concrete structure, open water is generally absent and there are no inclusions of upland present within the wetland study area. The pond provides habitat for wading and aquatic birds species. The density of wetland vegetation and degree of diversity is moderate to high. Wildlife signs such as tracks and scat as well as cameras that were installed indicate species such as deer and turkey are utilizing the area. Wildlife and turkey are species that have a higher than average tolerance for human disturbance and activity. The physical attributes of the wetland and wildlife sign observed generally indicate that Wildlife Habitat is a principal function of this wetland area and provides valuable local habitat. It is noteworthy that the New Hampshire Fish and Game – Wildlife Action Plan (WAP) did not indicate this area or any part of the subject property as Highest Ranked Habitat in NH (depicted in magenta on Figure 5) or Highest Ranked Habitat in the Region (depicted in green on Figure 5). Conversely, the Wildlife Composite Map found in the Natural Resource Inventory identifies this wetland study area as a wildlife focus area having a co-occurrence of three major characteristics that include highest ranked habitat in NH from the WAP and rare species/communities from the Natural Heritage Bureau among numerous other criteria. Refer to Figure 5 on page 15 and Figure 6 below.

Figure 6 Wildlife Composite Map (Exeter Natural Resource Inventory – Map 8)



Recreation

The wetland is not part of an official recreation area, park, or refuge. The wetland appears to have significant avian activity and therefore presents some birdwatching opportunities, especially for those willing to venture off the beaten path. The wetland could be considered valuable wildlife habitat but hunting opportunities are very limited, if not prohibited, due to proximity to residential dwellings and other development, as are fishing opportunities. The potential for hiking is unlikely but adjacent uplands (at the top-of-slope) may provide a suitable connection to the town forest. The wetland does not possess a high visual or aesthetic quality nor is it suitable for kayaking, boating or canoeing. Norris Brook is perennial but the stream is less than 10–feet wide and the navigable distance is too short to be attractive to canoers or kayakers. Most wetlands have some suitability for recreation and this wetland is no exception, but overall recreation is not a principal value of this wetland area.

Educational/Scientific Value

The wetland could be considered valuable wildlife habitat but is not located in a nature preserve or wildlife management area. Signs of wildlife habitat enhancement are absent. The potential educational site is relatively undisturbed but does contain some diversity of wetland classes. No signs of wildlife enhancement, such as bird houses and nest boxes, exist on site. The wetland is not permanently flooded (with the exception of the pond) but Norris Brook is perennial. Potential off-road parking is currently available for a small bus and the wetland is a short drive but not a safe walk to or from local schools. Access could be challenging due to the steep slopes adjacent to the wetland study area. All wetlands have some suitability for educational purposes and this wetland is no exception, however Educational / Scientific values are not principal values of this wetland area.

Uniqueness/Heritage

The wetland lacks permanent open water, a high degree of interspersion of wetland classes or open water and three or more wetland classes. The wetland is not known to be a site for research and is not a natural landmark or an exemplary natural community. The wetland is not known to be an important archaeological site nor does it possess biological features which are locally rare. The wetland includes a productive spring referred to by some as the Jailhouse Spring which is visited frequently. Urbanization to the south increases the importance of this wetland. The site also has history as a brickyard. The wetland is not connected to a state or federally designated scenic river. Potential off-road parking is available, but not for a full size bus. Accessibility can be challenging due to the steep slopes and the wetland is a short drive to or from schools but walking to the site for school aged children is not realistic. Uniqueness/Heritage could be considered a principal value of this wetland study area.

Visual Quality/Aesthetics

The wetland is not dominated by flowering plants but has a meaningful population of red maple trees and saplings that likely turn vibrant colors in the fall. Residential or other development cannot be seen from the wetland (except when the leaves are off) due to adjacent steep slopes but can be viewed while gaining access. The wetland could be considered valuable wildlife habitat. With the possible exception of the granite block box culvert at the railroad, the wetland lacks a good primary viewing location and multiple wetland classes are absent. The noise level at this wetland study area can be intermittently high or distracting due to passing trains. Unpleasant odors were not detected at this wetland, but Visual Quality/Aesthetics is not a principal value of this wetland area.

6.4 Eastern Intermittent Stream (Red) Study Area

Groundwater Recharge/Discharge

The drainage basin that contributes to this wetland has similar surficial geology and soils as other areas in this evaluation and provides limited groundwater discharge as compared to wetlands associated with Norris Brook and the unnamed perennial stream. Groundwater Recharge / Discharge is a principal function of this wetland area however.

Floodflow Alteration

At 38,448± SF or 0.88 acres, the portion of this wetland that falls on the subject property represents <1% of its watershed. The watershed was calculated at approximately 122± acres as measured beginning at the juncture of the intermittent stream and Norris Brook. Our investigations suggest that the inclusion of offsite wetlands will not result in the wetland constituting a large percentage of the watershed. The stream associated with these wetlands is intermittent and also has significant topographic relief. However, the topography of the basin and other attributes suggest that this wetland can play a minor role in floodflow alteration in this subwatershed. Floodflow Alteration is a principal function of this wetland area.

Fish and Shellfish Habitat (Freshwater)

Forest land is dominant in the contributory watershed. The stream channel is poorly defined in most locations. Cover objects are generally absent and the stream is intermittent. The wetland is of insufficient size and depth and does not possess the physical attributes to prevent it from freezing or icing over in the winter. Fish and Shellfish Habitat is not a principal function of this wetland study area.

Sediment/Toxicant/Pathogen Retention

The wetland study area is likely a net supplier of sediment. There are no known toxicant sources in the watershed above the wetland. Fine grained soils are present but retention times are very short due to topographic relief and basin topography. Sediment/Toxicant/Pathogen Retention is not a principal function of this wetland area.

Nutrient Removal

This wetland is small compared to its watershed. Deep water and seasonal open water habitat are absent but slowly draining fine textured soils are present. A locally dense vegetation community exists and potential sources of excess nutrients are generally absent in the watershed therefore the opportunity for nutrient attenuation does not exist. Nutrient Removal is not a principal function of this wetland area.

Production (Nutrient) Export

The wetland area is sporadically vegetated and wildlife food sources are generally limited. Nutrient Export is not a principal function of this wetland area.

Sediment/Shoreline Stabilization

Minor indications of erosion and siltation can be observed in this wetland. The small size, landscape position, physical attributes and lack of open water or a permanent watercourse deny this area an opportunity to perform this function. Sediment/Shoreline Stabilization is not a principal function of this wetland area.

Wildlife Habitat

By our estimation, less than 40% of this wetland edge is bordered by upland wildlife habitat (brushland, woodland, active farmland, or idle land) at least 500 feet in width although 300 feet is plausible on site. Residences along Oak Street Extension and the railroad are located within 500 feet. Overland access for wildlife to other wetlands is present and the stream and adjacent upland could provide a corridor for wildlife. Wildlife food sources are limited. The wetland does not exhibit a high degree of interspersion of wetland classes and/or open water nor are inclusions of upland present within the wetland. The density of wetland vegetation is high in places and degree of diversity is low as is diversity of plant community structure. The wetland study area may provide some suitability for common wildlife and those species which are not critically dependent upon wetlands however it is our opinion that Wildlife Habitat is not a principal function of this wetland area.

Recreation

The wetland is not part of an official recreation area, park, or refuge. Hunting opportunities are very limited, due to proximity to residential dwellings and other development, as well as the railroad. Fishing opportunities are absent due to the intermittent flow. The potential for hiking in the adjacent uplands exists and one walking/biking trail that crosses the wetland was observed. The wetland does not possess a high visual or aesthetic quality nor is it suitable for boating, canoeing or kayaking. Most wetlands have some suitability for recreation and this wetland is no exception, but Recreation is not a principal value of this wetland area.

Educational/Scientific Value

The potential educational site is relatively undisturbed (the nearby railroad, bike path and old access road notwithstanding) but does not contain a diversity of wetland classes. The wetland is not considered important wildlife habitat and is not located in or adjacent to a nature preserve or wildlife management area, although the town forest is not far away. No signs of wildlife enhancement, such as bird houses and nesting boxes, exist on site. The wetland is not permanently flooded and the stream is intermittent. Potential off-road parking is currently available for a small bus approximately 1,000 feet away on Oak Street Extension but there is no path between the apparent parking location and the wetland. A foot path along the railroad tracks exists but is not considered safe and may not be legal. The wetland is a short drive but not a safe walk to or from local schools. Educational/Scientific Values are not principal values of this wetland area.

Uniqueness/Heritage

Urbanization to the south increases the importance of this wetland. The wetland lacks permanent open water, a high degree of interspersion of wetland classes and open water, three or more wetland classes and a suitable viewing area. The wetland is not known to be a site for research and is not a natural landmark or an exemplary natural community. The wetland is not an important archaeological site nor does it possess natural geologic or biological features which are locally rare. The wetland is not connected to a state or federally designated scenic river. Potential off-road parking is available for a smaller bus, accessibility is questionable and the wetland is a short drive (but not a safe walk) to or from schools. Uniqueness / Heritage is not a principal value of this wetland area.

Visual Quality/Aesthetics

The wetland is not dominated by flowering plants or plants that turn vibrant colors in the fall or other seasons. Wetland views are generally absent of trash, debris and other signs of disturbance. Limited residential development along Oak Street Extension can be seen from the wetland, especially outside the growing season. The wetland is not considered to be important wildlife habitat. The railroad can easily be heard from this wetland. Unpleasant odors were not detected at this wetland. Visual Quality/Aesthetics is not a principal value of this wetland area.

7.0 SUMMARY AND DISCUSSION

The Highway Methodology identifies 13 primary functions and values which can potentially be ascribed to wetlands. The presence of these functions and values provide benefits for society and the environment.

Our findings resulted in a conclusion that the **Western Intermittent Stream (Yellow) Study Area** possesses one (1) principal function – Groundwater Discharge. The observations made of wetland attributes resulted in a conclusion that the **Norris Brook – Upstream (Blue) Study Area** possesses or provides five (5) principal functions: Groundwater Discharge, Floodflow Alteration, Sediment / Toxicant Retention, Nutrient Removal and Wildlife Habitat. The findings resulted in a conclusion that **Norris Brook – Downstream (Green) Study Area** possesses or provides six (6) principal functions: Groundwater Discharge, Floodflow Alteration, Sediment / Toxicant Retention, Nutrient Removal, Wildlife Habitat and Uniqueness/Heritage. The **Eastern Intermittent Stream (Red) Study Area** findings indicate a total of two (2) principal functions: Groundwater Discharge and Floodflow Alteration. Refer to Table 1 below.

TABLE 1 TALLY OF PRINCIPAL FUNCTIONS / VALUES BY STUDY AREA

	STUDY AREA			
Function/Value	**Yellow**	**Red**	**Green**	**Blue**
Groundwater	**Y**	**Y**	**Y**	**Y**
Floodflow Alteration	N	**Y**	**Y**	**Y**
Fish / Shellfish	N	N	N	N
Sediment/Toxicant	N	N	**Y**	**Y**
Nutrient Removal	N	N	**Y**	**Y**
Production Export	N	N	N	N
Shoreline Stabilization	N	N	N	N
Wildlife Habitat	N	N	**Y**	**Y**
Recreation	N	N	N	N
Educational Value	N	N	N	N
Uniqueness / Heritage	N	N	**Y**	N
Visual Quality	N	N	N	N
TOTAL	**1**	**2**	**6**	**5**

The Norris Brook – Downstream (Green) Study Area has the largest number of principal functions and generally speaking represents the most valuable wetland on this site although the Norris Brook – Upstream (Blue) Study area is very similar in function and value. This is not surprising since they have many similar physical attributes and are essentially the same wetland which was bisected by the construction of Oak Street Extension. Assessing overall wetland value simply based upon the number of principal functions provided may not be appropriate however.

We note that all four wetland study areas support groundwater discharge as a principal function. Groundwater discharge is a function of the dominant upland soil conditions in the area which generally involve sandy textures of varying thickness over deep, slowly permeable silt and clay textures. This corroborates our investigations which confirm that there are no stratified drift deposits and thus no suitable aquifers in the area and therefore groundwater recharge is not a principal function of any of the wetlands on this site. These findings demonstrate however that meaningful infiltration of precipitation is taking place in uplands adjacent to site wetlands and this infiltration is contributing to base flow in Norris Brook and other streams.

We have indicated floodflow alteration as a principal function of the Norris Brook – Upstream (Blue) Study Area on the attached data form. The presence of floodflow alteration function within a wetland system and the indication that it is a principal function implies that the wetland system has the ability to prevent property damage by storing flood waters and desynchronizing peak flows associated with a storm or flood event. It should be noted that a significant part of the function in this case is a result of the construction of Oak Street Extension as well as the partially plugged culvert, both of which are providing a constriction of stream flow. If the culvert is cleaned or replaced and enlarged this floodflow alteration function will likely be reduced. This is unlikely to have a significant impact on downstream properties however, of which there are few.

Due to the topography in the general area of this wetland, the plugged culvert and any associated flooding has little effect on surrounding upstream properties. Oak Street itself actually represents the lowest elevation in the area at this point in the subwatershed and is at greatest risk for damage should the pipe become completely plugged or plugged sufficiently that a particular storm causes water to back up and overtop the road. If this were to happen the resulting erosion and sedimentation could have negative ramifications for downstream wetlands. Also, were Oak Street Extension to overtop and fail, downstream properties could be affected although the granite block box culvert at the railroad would significantly mitigate the effects. A cleaning of the pipe and installation of a trash rack of some sort may be warranted. Any trash rack should not be installed at the mouth of the pipe however. A trash rack is not a panacea however as it also requires maintenance.

The conclusions above are not to suggest that the various wetland study areas do not perform or provide any function or value or that they cannot provide or perform any function that is not identified as a principal function; however the data and our observations and subsequent conclusions confirm that the wetlands do not perform or provide those functions at an elevated or significant level. For those interpreting this report, caution needs to be applied when deriving conclusions about impact assessment when using the findings within. Additionally, do not be easily tempted to rank or compare the wetlands described within this report against one another and certainly against other off-site wetlands. Ranking wetlands numerically or rating wetlands low, medium or high is tempting but is inappropriate and implies a level of accuracy or understanding of the wetlands and functional evaluation methodologies which may not exist.

EXETER ROSE FARM, LLC

FUNCTIONAL WETLAND EVALUATION

PHOTOGRAPHS & DESCRIPTIONS

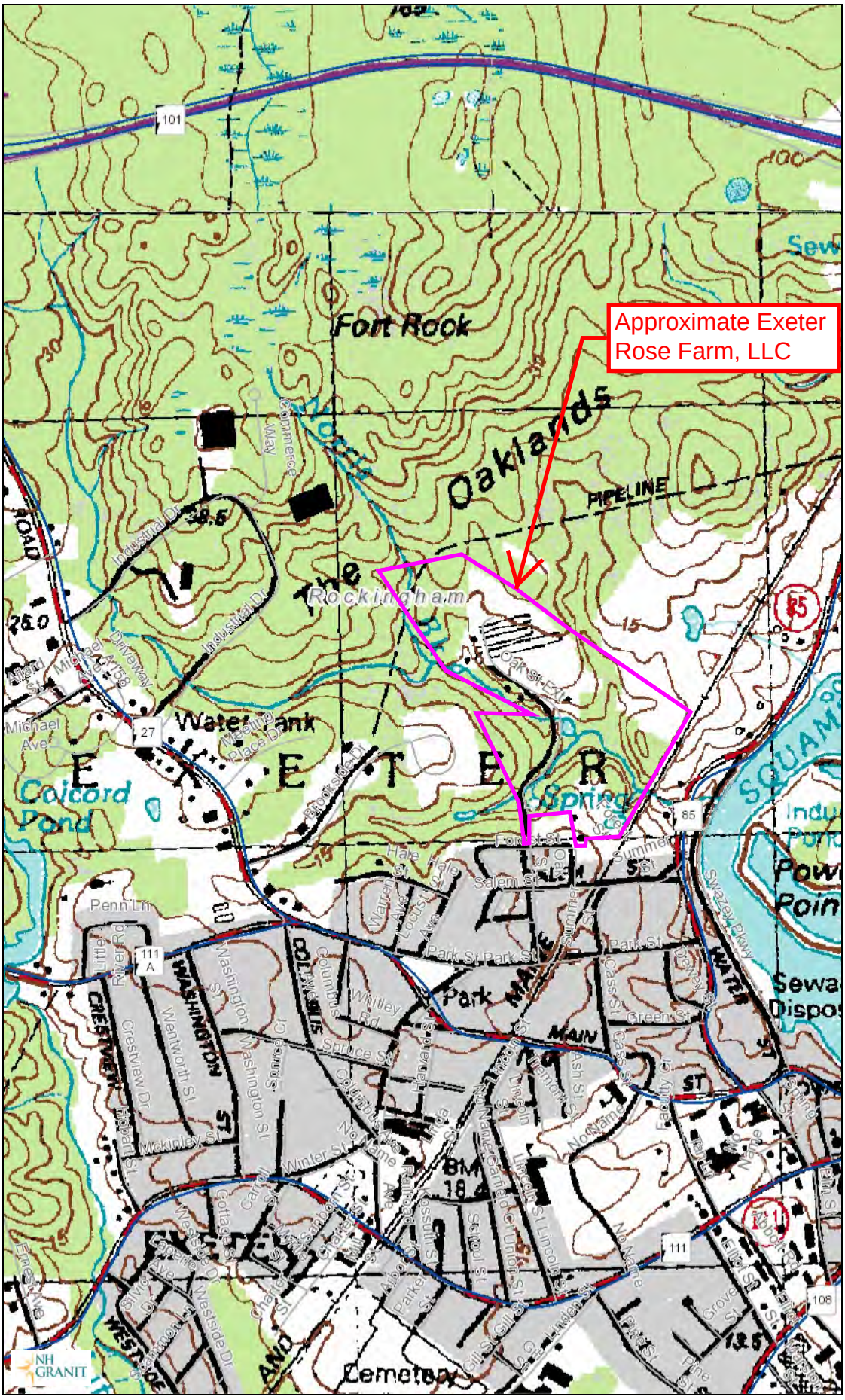
Image 1 – Unnamed perennial stream. Note bricks and turbidity. *(©Jacobs2018)*

Image 2 – Juncture of unnamed perennial stream and Norris Brook (background). Note plume of slightly turbid water in foreground and on right side of Norris Brook. *(©Jacobs2018)*

Image 3 – Wildlife camera image in the Green Wetland Study Area looking upstream (west) along Norris Brook. Note existing home in on left in center background and deer on right in foreground *(©Jacobs2018)*

Image 4 – Wildlife camera image in the Green Wetland Study Area looking upstream (west) along Norris Brook. Note existing home on left in center background and deer on right in foreground *(©Jacobs2018)*

Map by NH GRANIT



Legend

- State
- County
- City/Town
- Interstates
- Turnpikes
- US Routes
- State Routes
- Local Roads

EXHIBIT 1

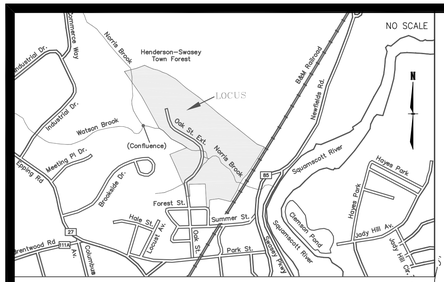
Map Scale

1: 12,988

Map Generated: 8/18/2016

Notes

Rose Farm
Oak Street Extension
Exeter, NH



VICINITY PLAN

NOTES:

1. THE SUBJECT PARCELS ARE SHOWN ON THE TOWN OF EXETER ASSESSOR'S MAP 54 AS LOTS 5, 6 & 7 AND MAP 63 LOT 205.

2. OWNERS OF RECORD/APPLICANT:

MAP 54 LOT 5
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2102
(603) 425-8598

MAP 54 LOT 6
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2102
(603) 425-8598

MAP 54 LOT 7
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2104
(603) 425-8598

MAP 63 LOT 205
BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS
1 FOREST STREET
EXETER, NH 03833
RCRD BK.#4574 PG.#2843
(603) 502-7175

3. TOTAL AREA:
2,176,025± S.F.
(49.9547± ACRES)

4. THE SUBJECT PARCELS ARE LOCATED IN THE R-1 LOW DENSITY SINGLE FAMILY, R-2 SINGLE FAMILY, AND R-4 MULTI-FAMILY ZONING DISTRICTS AND PARTIALLY LOCATED IN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT AND THE WETLANDS CONSERVATION AND FLOOD HAZARD OVERLAY DISTRICTS.

5. DENSITY AND DIMENSIONAL REGULATIONS:

	R-1	R-2	R-4 (DETACHED SINGLE FAMILY)
MINIMUM LOT AREA:			
(NO MUNICIPAL WATER & SEWER)	2 ACRES	1 ACRES	NA
(MUNICIPAL WATER & SEWER)	40,000 S.F.	15,000 S.F.	12,000 S.F.
(DWELLING UNIT)	40,000 S.F.	15,000 S.F.	12,000 S.F.
MINIMUM LOT WIDTH:	150'	100'	100'
MINIMUM LOT DEPTH:	150'	100'	100'
MAXIMUM HEIGHT:	35'/3 STORIES	35'/3 STORIES	35'/3 STORIES
MINIMUM YARD SETBACKS:			
FRONT YARD:	25'	25'	25'
SIDE YARD:	15'/30'	15'/30'	15'/30'
REAR YARD:	25'	25'	25'
MAXIMUM BUILDING COVERAGE:	15%*	25%*	25%*
MINIMUM OPEN SPACE:	80%**/70%	60%**/40%	30%

*FOR AREAS WITHIN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT THE MAXIMUM LOT COVERAGE IS 10% (SEE SECTION 9.3.4.B)
**FOR LOTS USING SEPTIC SYSTEMS
PER THE TOWN OF EXETER, N.H. ZONING ORDINANCE, SECTION 4.3.

6. THE HORIZONTAL DATUM IS REFERENCED TO NORTH AMERICAN DATUM OF 1983 [NAD 83 (2011)] PER STATIC GPS OBSERVATIONS. THE VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), GEOID 12A PER STATIC GPS OBSERVATIONS. THE CONTOUR INTERVAL IS 2 FEET.
7. THE SUBJECT PARCELS ARE PARTIALLY LOCATED IN SPECIAL FLOOD HAZARD AREA (SFHA) ZONE AE (EL.8) & ZONE X AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP NUMBER 33015C0402E WITH AN EFFECTIVE DATE OF MAY 17, 2005.
8. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
9. THE PURPOSE OF THIS PLAN IS TO SHOW THE CURRENT EXISTING FEATURES AND TOPOGRAPHY OF TAX MAP 54 LOTS 5, 6 & 7, AND TAX MAP 63 LOT 205. SEE SHEET C-02 FOR CULVERT TABLE AND PLAN REFERENCES, SHEETS C-05 TO C-09 FOR BOUNDARY BEARINGS AND DISTANCES, SHEET C-03 FOR SITE-SPECIFIC SOILS MAP, SHEET C-10 FOR WETLAND AREAS AND SHEET C-11 FOR OFFSITE UTILITY INFORMATION.
10. FIELD SURVEY COMPLETED BY TODD C. EMERSON AND NICK J. MORTON IN JANUARY 2016 AND JULY 2017 USING A TOPCON DS103 AND TOPCON TESLA DATA COLLECTOR, A TOPCON MG-A5 BACKPACK GPS UNIT AND A TOPCON HYPER SR STATIC GPS UNIT. AERIAL TOPOGRAPHY WAS PROVIDED BY WSP, PARSONS BRINKERHOFF OF CHARLTON, MA IN MAY 2016.
11. THE BOUNDARY RUNS ALONG THE BROOK FROM POINT "A" TO POINT "B". THE TOTAL AREA WAS DETERMINED USING THE CENTERLINE OF THE BROOK AS LOCATED BY MSC IN JANUARY 2016.

12. UTILITY LINES SHOWN HEREON ARE A COMPILATION OF FIELD LOCATIONS, RECORD PLANS AND DIGITIZED PER THE TOWN OF EXETER GIS WEB SITE AND ARE APPROXIMATE ONLY. CONTACT DIGSAFE @ 1-888-DIG-SAFE AND THE TOWN OF EXETER DEPARTMENT OF PUBLIC WORKS TO VERIFY UTILITIES.

13. MANMADE AND NATURAL JURISDICTIONAL WETLAND BOUNDARIES WERE DELINEATED BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, AND JON BALANOFF IN DECEMBER 2015 ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS - WETLANDS DELINEATION MANUAL; THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES - WETLANDS BUREAU - ENV WT 100-900 AND THE TOWN OF EXETER ZONING. PREDOMINANT HYDRIC SOILS WERE IDENTIFIED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 3, APRIL 2004 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 7, 2010. THE INDICATOR STATUS OF HYDROPHYTIC VEGETATION WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS - NORTHCENTRAL AND NORTHEAST 2014 REGIONAL WETLAND PLANT LIST. COPIES OF SITE PLANS DEPICTING THE WETLAND DELINEATION WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS LOCATION.

14. WETLANDS CONTAINING POORLY DRAINED SOILS ARE SUBJECT TO A 40' NO CUT/NO DISTURBANCE SETBACK. WETLANDS CONTAINING VERY POORLY DRAINED (VPD) SOILS ARE SUBJECT TO A 50' NO CUT/NO DISTURBANCE SETBACK. IN AN EFFORT TO SIMPLIFY SETBACKS ON THIS PLAN, A 50' NO CUT/NO DISTURBANCE SETBACK HAS BEEN APPLIED TO ALL WETLANDS REGARDLESS OF SOIL TYPE, EXCEPT FOR WETLAND AREA M (SEE SHEET C10), A WETLAND CONTAINING POORLY DRAINED SOILS. THE APPLICATION OF THE 50' NO CUT/NO DISTURBANCE SETBACK ON THIS PLAN SHOULD NOT BE CONSIDERED A DETERMINATION OF VERY POORLY DRAINED (VPD) VERSUS POORLY DRAINED SOILS.

15. THE FORMER GREENHOUSE AREA AND THE FORMER BOILER & PACKING BUILDINGS AREA ARE THE SUBJECT OF NHDES SITE #201203003. SEE REMEDIAL ACTION PLAN (RAP) PREPARED BY STONEHILL ENVIRONMENTAL, INC. (CURRENTLY UNDER REVIEW BY NHDES) FOR DETAILS.
CONCEPTUAL REMEDIATION PLAN:
A: FORMER GREENHOUSE AREA - SHALLOW SOIL CONTAINING LEAD CONCENTRATIONS EXCEEDING THE NHDES STANDARD APPLICABLE TO RESIDENTIAL PROPERTIES WILL BE REMOVED AND PROPERLY DISPOSED OF AT AN OFF-SITE FACILITY.
B: FORMER BOILER & PACKING BUILDINGS AREA - SOLID WASTES WILL BE IDENTIFIED, REMOVED AND PROPERLY DISPOSED OF. CONCRETE AND BRICK REMOVED FROM THE SOLID WASTE AREA MAY BE CRUSHED AND USED AS ROAD BASE. COAL ASH/CLINKER WILL BE CONSOLIDATED IN THE FORMER PACKING BUILDING AREA, CAPPED AND COVERED.
C. MANMADE RETENTION BASIN #4 - SHALLOW SOIL CONTAINING LEAD CONCENTRATIONS EXCEEDING THE NHDES STANDARD APPLICABLE TO RESIDENTIAL PROPERTIES WILL BE REMOVED AND PROPERLY DISPOSED AT AN OFF-SITE DISPOSAL FACILITY.

16. FULL AND/OR PARTIAL WAIVERS PERTINENT TO THE EXISTING SITE CONDITIONS PLAN ARE REQUESTED FROM SITE PLAN REVIEW AND SUBDIVISION REGULATIONS FOR THE TOWN OF EXETER SECTIONS:
(1) 7.4.7 (PARTIAL WAIVER)-REGARDING THE LOCATION OF SIGNIFICANT TREES.
(2) 7.4.10-REGARDING A HIGH INTENSITY SOIL SURVEY (HISS) OF ENTIRE SITE (REQUEST FOR A SITE SPECIFIC SOILS MAP TO BE USED INSTEAD).
(3) 7.4.15 (PARTIAL WAIVER)-REGARDING HEIGHTS OF ALL EXISTING STRUCTURES.

LEGEND:

- UTILITY POLE
- HYDRANT
- WELL
- GAS VALVE
- WATER VALVE
- WATER SHUT OFF
- CATCH BASIN
- SEWER MANHOLE
- DRAIN MANHOLE
- DECIDUOUS TREE
- CONIFEROUS TREE
- STONE WALL
- DRAIN LINE
- SEWER LINE
- WATER LINE
- GAS LINE
- OVERHEAD UTILITIES
- BOUNDARY LINE
- BROOK
- EDGE OF WETLANDS
- PERENNIAL STREAM
- INTERMITTENT STREAM
- 40/50' NO CUT/NO DISTURBANCE SETBACK (S&SR: SECTION 9.9.2)
- 75' STRUCTURE SETBACK (S&SR: SECTION 9.9.2)
- 100'/150' BUILDING SETBACK (ZO: SECTION 9.3.4.C)
- YARD SETBACK (ZO: SECTION 4.3)
- 50' SURFACE WATER BUFFER (S&SR: SECTION 9.6.1.1)
- SPECIAL FLOOD HAZARD AREA BOUNDARY ZONE AE
- BOX WIRE FENCE
- TREE LINE
- WETLANDS AND SURFACE WATER
- EASEMENT
- EXISTING PAVEMENT
- FORMER GREENHOUSE, BOILER & PACKING BUILDINGS AREA

LEGEND:

APPROX	APPROXIMATE
I	INDUSTRIAL
TBR	TO BE REMOVED
AC	ASBESTOS CONCRETE
PP	PLASTIC PIPE
EM	ELECTRIC METER
ELEV.	ELEVATION
HW	HARD WOOD
D1	DRAINAGE LABEL
MM	MANMADE
N/F	NOW OR FORMERLY
R-1	LOW DENSITY RESIDENTIAL ZONING DISTRICT
R-2	SINGLE FAMILY RESIDENTIAL ZONING DISTRICT
R-4	MULTI-FAMILY RESIDENTIAL ZONING DISTRICT
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
R.O.W.	RIGHT OF WAY
S.F.	SQUARE FEET
S&SR	SITE PLAN REVIEW AND SUBDIVISION REGULATIONS
SFHA	SPECIAL FLOOD HAZARD AREA
SW	SURFACE WATER
TYP.	TYPICAL
UP	UTILITY POLE
W/W	WITH WIRE
ZO	ZONING ORDINANCE

STATE OF NEW HAMPSHIRE
No. 844
J. COREY COLWELL
LICENSED LAND SURVEYOR
Corey Colwell

REV.	DATE	DESCRIPTION	DR	CK
2	10/31/17	UPDATED BOILER & PACKING BUILDINGS AREA	BMK	JCC
1	9/26/17	REVISED PER TRC COMMENTS	NJM	BMK

100 50 25 0 100
Graphic Scale

TFM ® **MSC** A division of TFMoran, Inc.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.mscengineers.com

FILE	DR			
47175.00	DR BMK		531 & 539	C-01
	CK JCC	CADFILE	47175.00_EC	

TAX MAP 54 LOTS 5, 6 & 7 AND MAP 63 LOT 205

EXISTING SITE CONDITIONS PLAN

OAK STREET EXTENSION & FOREST STREET
EXETER, NEW HAMPSHIRE, COUNTY OF ROCKINGHAM
OWNED BY
EXETER ROSE FARM, LLC & THE
BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS
PREPARED FOR
EXETER ROSE FARM, LLC

SCALE: 1"=100' **AUGUST 15, 2017**

Oct 30, 2017 - 5:55pm
F:\MSC Projects\47175 - Oak Street Extension - Exeter\47175.00 - Baker Properties\47175.00 C3D\Survey\Drawings\47175-00_C01-C02_Existing Conditions.dwg

Memo

NH Natural Heritage Bureau
NHB Datacheck Results Letter

To: Marc Jacobs, Consulting Natural Scientist
P.O. Box 417
Greenland, NH, NH 03840-0417

From: Amy Lamb, NH Natural Heritage Bureau
Date: 10/31/2016 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB16-3245 Town: Exeter Location: Tax Maps: Map 54 Lots 5, 6 & 7; Map 63 Lot 205
Description: Properties being considered for future multi-unit residential development. Project currently in conceptual design phase.
cc: Kim Tuttle

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

Comments: Please contact NHB if the proposed project includes impacts to tidal streams/wetlands, or to emergent/scrub-shrub wetlands. Contact NH Fish & Game regarding wildlife concerns.

Plant species	**State[1]**	**Federal**	**Notes**
little-headed spikesedge (*Eleocharis parvula*)	T	--	Threats are primarily alterations to the hydrology of the wetland, such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat, activities that eliminate plants, and increased input of nutrients and pollutants in storm runoff.
sharp-flowered manna grass (*Glyceria acutiflora*)	E	--	Primarily vulnerable to changes to the hydrology of its habitat, especially alterations that change water levels. It may also be susceptible to increased pollutants and nutrients carried in stormwater runoff.
Spongy-leaved Arrowhead (*Sagittaria montevidensis ssp. spongiosa*)	E	--	Primarily vulnerable to changes to the hydrology of its habitat, especially alterations that change water levels. It may also be susceptible to increased pollutants and nutrients carried in stormwater runoff.

Vertebrate species	**State[1]**	**Federal**	**Notes**
American Eel (*Anguilla rostrata*)	SC	--	Contact the NH Fish & Game Dept (see below).
Northern Black Racer (*Coluber constrictor constrictor*)	T	--	Contact the NH Fish & Game Dept (see below).

[1]Codes: "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.

Department of Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DRED/NHB
172 Pembroke Rd.
Concord, NH 03301

Memo

NH Natural Heritage Bureau
NHB Datacheck Results Letter

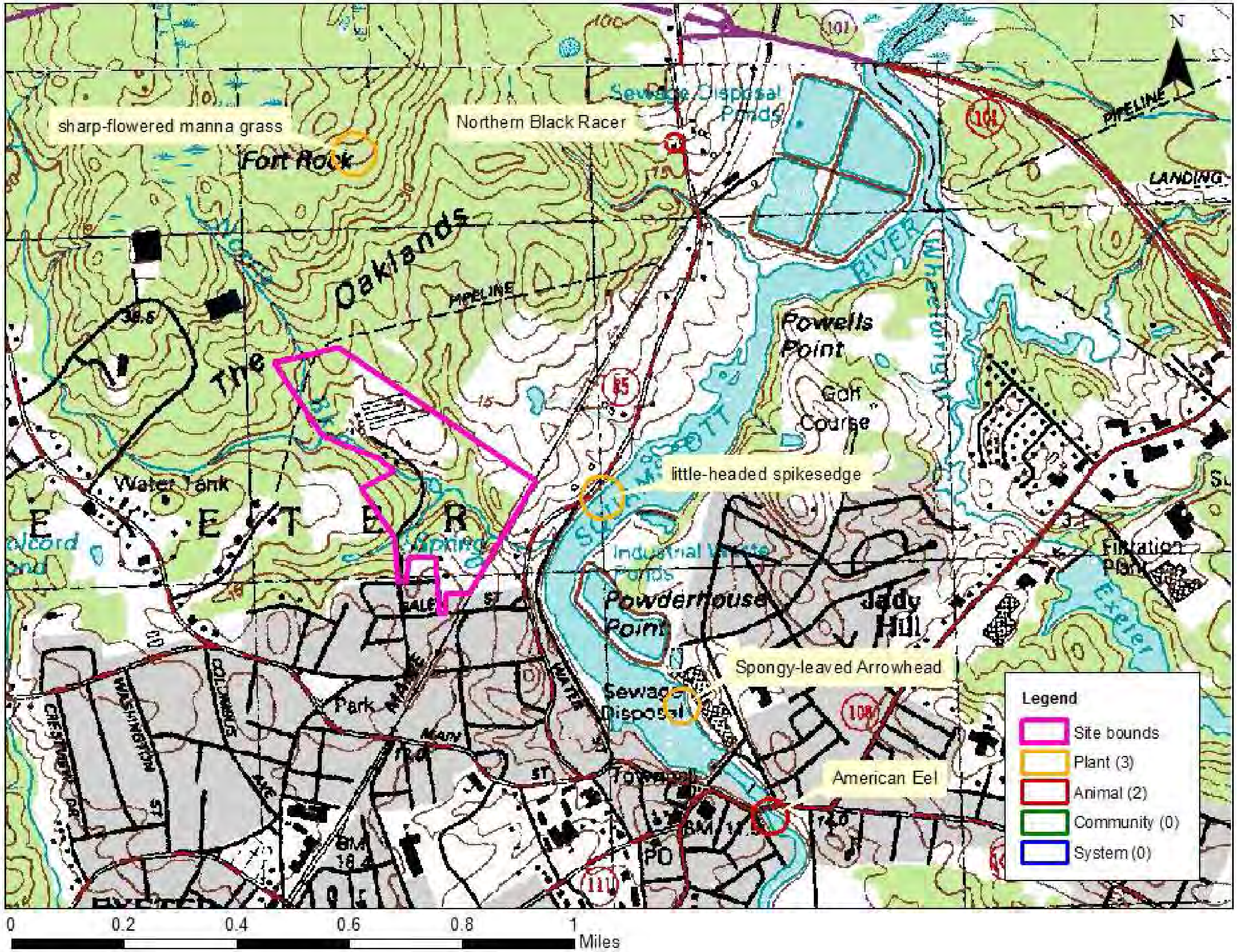
Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

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.

Department of Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DRED/NHB
172 Pembroke Rd.
Concord, NH 03301

NHB16-3245


sharp-flowered manna grass
Northern Black Racer
little-headed spikesedge
Spongy-leaved Arrowhead
American Eel
Legend
Site bounds
Plant (3)
Animal (2)
Community (0)
System (0)
0
0.2
0.4
0.6
0.8
1
Miles

New Hampshire Natural Heritage Bureau - Plant Record

little-headed spikesedge (*Eleocharis parvula*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: Small population

Detailed Description: 1996: Small population.
General Area: 1996: In low brackish tidal marsh. Associated with Spartina alterniflora (smooth cord-grass), Typha angustifolia (narrow-leaved cat-tail), Scirpus robustus (stout bulrush), Atriplex hastata (halberd-leaved orach), and Amaranthus cannabinus (water hemp).
General Comments:
Management Comments:

Location

Survey Site Name: The Great Roundabout and the Squamscott River
Managed By:

County: Rockingham
Town(s): Exeter
Size: 2.8 acres Elevation: 30 feet

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

Directions: Along the Squamscott River adjacent to pull-off on east side of Rte. 85 south of Rte. 101.

Dates documented

First reported: 1996-09-04 Last reported: 1996-09-04

New Hampshire Natural Heritage Bureau - Plant Record

sharp-flowered manna grass (*Glyceria acutiflora*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank:

Detailed Description: 1996: 200 to 300 culms in several patches, covering a total of 160 square feet.
General Area: 1996: Small (0.5 acre) Acer rubrum (red maple)/Vaccinium corymbosum (highbush blueberry) basin swamp on mucky soils. Several windthrows, root mounds and hollows in the woodland swamp provided marked relief. Shrub and herb development was patchy but moderate and included highbush blueberry, Ilex verticillata var. padifolia (swamp winterberry), Cephalanthus occidentalis (buttonbush), Lysimachia terrestris (swamp candles), Sphagnum spp. (sphagnum moss) and other bryophytes, Sparganium americanum (lesser bur reed), Bidens frondosa (common bur-marigold), and several other less abundant species. Only a few small pools of water were remaining by early September in this seasonally flooded basin. Glyceria acutiflora was associated with Sparganium americanum (lesser bur reed) in the wetter depressions.
General Comments: 1996: Fort Rock town conservation land supports a variety of good quality upland and wetland communities.
Management Comments:

Location

Survey Site Name: Fort Rock
Managed By: Henderson-Swasey Town Forest

County: Rockingham
Town(s): Exeter
Size: 2.8 acres Elevation: 40 feet

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

Directions: At the Rte. 101/Rte. 85 junction north of Exeter head south on Rte. 85 ca. 0.3 miles. At the railroad crossing park on the northwest side of the track at the Henderson-Swasey Town Forest. Go west ca. 0.75 miles to site.

Dates documented

First reported: 1996-09-04 Last reported: 1996-09-04

New Hampshire Natural Heritage Bureau - Plant Record

Spongy-leaved Arrowhead (*Sagittaria montevidensis ssp. spongiosa*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank:

Detailed Description: 2003: Very common (hundreds of plants) in several areas.
General Area: 2003: Tidal brackish marsh with smooth cordgrass (Spartina alterniflora), softstem bulrush (Schoenoplectus tabernaemontani), and three-square rush (Schoenoplectus pungens). In alluvium, with fresh-water cordgrass (Spartina pectinata), common arrowhead (Sagittaria latifolia), and mild water pepper (Persicaria hydropiperoides).
General Comments:
Management Comments:

Location

Survey Site Name: Squamscott River at Exeter
Managed By:

County: Rockingham
Town(s): Exeter
Size: 1.9 acres Elevation:

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

Directions: 2003: 250 m south of Jady Hill Ave. along the east shore of the Squamscott River in Exeter.

Dates documented

First reported: 2003-07-25 Last reported: 2003-07-25

New Hampshire Natural Heritage Bureau - Animal Record

American Eel (*Anguilla rostrata*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Special Concern	State:	Rare or uncommon

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2008: Area 13324: 15 observed.
General Area:
General Comments:
Management Comments:

Location

Survey Site Name: Great Brook-Exeter River
Managed By:

County: Rockingham
Town(s): Exeter
Size: 1.9 acres Elevation:

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

Directions: 2008: Exeter River

Dates documented

First reported: 2008-08-29 Last reported: 2008-08-29

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 Hampshire Natural Heritage Bureau - Animal Record

Northern Black Racer (*Coluber constrictor constrictor*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2012: Area 13078: 1 adult observed.
General Area: 2012: Area 13078: Residential yard.
General Comments:
Management Comments:

Location

Survey Site Name: The Oaklands
Managed By:

County: Rockingham
Town(s): Exeter
Size: .4 acres Elevation:

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

Directions: 2012: Area 13078: 20 Newfields Road, Exeter.

Dates documented

First reported: 2012-06-23 Last reported: 2012-06-23

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.

Norris Brook - upstream (West) of Oak St Ext (BLUE)

Wetland Function-Value Evaluation Form

Total area of wetland 1.9+/- Ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Apartments-south, SF Residential-north Distance to nearest roadway or other development 0'+/- OakStX

Dominant wetland systems present PSS / PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Lower

How many tributaries contribute to the wetland? 2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Exeter Rose Farm, LLC

Latitude N42 59.395' Longitude W70 57.443'

Prepared by: MEJ Date 032718

Wetland Impact:
Type Buffer-Indirect Area NA

Evaluation based on:
Office Yes Field Yes

Corps manual wetland delineation completed? Y MEJ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	6, 7, 12, 13, 14	Y	6 Slowly permeable marine sediments dominant, 7 Norris Bk perennial, 13/14 observed seeps and snow melt
Floodflow Alteration	Y	5,6,9,10,13,14,15,18	Y	15 Culvert at Oak Street Extension partially plugged
Fish and Shellfish Habitat	Y	1,2,4,7,8,10,14,17	N	7 Based upon direct observation only, no testing of water, pollution sources exist on-site
Sediment/Toxicant Retention	Y	1,2,4,6,7,8,10,14,16	Y	2, Site is contaminated, 10 Norris Brook is perennial at this location
Nutrient Removal	Y	3,4,6,7,8,9,10,12,13	Y	4 Former greenhouses,10 limited
Production Export	Y	1,4,5,7,10,12	N	
Sediment/Shoreline Stabilization	Y	1,2,6,7,8,9,12,13,14	N	
Wildlife Habitat	Y	2,6,7,8,11,13,16,17,19,21	Y	2 Assumed-pollution sources exist,11 Swamp, 17 deer tracks, south aspect on Oak St Ext side
Recreation	Y	4,5,6,10,12	N	4 Neighborhood children possibly (if not on their phones) 6 Water quality looks good, No testing done, Pollution sources exist 10 Potential parking near spring
Educational/Scientific Value	Y	5,8,9,14	N	8 Short/small bus/van only, 9 Short drive-Main St School (K-2) closest
Uniqueness/Heritage	N	5,7,8,12,15,17,19,22,27	N	5 Swamp, 12 PSS/PFO, 15 P.Loosestrife, 17 from Oak St.X,
Visual Quality/Aesthetics	N	4,6,8,10,11	N	4 P. Loosestrife-Dominant?
ES Endangered Species Habitat				See attached Natural Heritage Report
Other				

Notes:

* Refer to backup list of numbered considerations.

Western Intermittent Stream (YELLOW)

Wetland Function-Value Evaluation Form

Total area of wetland 0.42+/- Ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use SF Res-north, Forested and Industrial-South Distance to nearest roadway or other development 0 feet (Gas)

Dominant wetland systems present R5UBH Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? Upper-headwater

How many tributaries contribute to the wetland? None Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Exeter Rose Farm, LLC

Latitude _____ Longitude _____

Prepared by: MEJ Date 032718

Wetland Impact:
Type DIRECT Area 975+/- SF Perm

Evaluation based on:
Office Yes Field Yes

Corps manual wetland delineation completed? Y MEJ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	6,7,12,13,14	Y	6 Slowly permeable soils, Stream IS the wetland, 12 Appears high by direct obs.-no testing-pollutants nearby 13/14 Obs. seeps and melted snow
Floodflow Alteration	N	5,13	N	5 Slowly permeable marine sediments, 13 intermittent stream
Fish and Shellfish Habitat	N	1,2,4,7,8,14,17	N	2, Locally, 8 Dense canopy,14 Persistent but intermittent
Sediment/Toxicant Retention	N	1,4,7,8,10	N	1 Stream IS the source periodically, 10 Intermittent
Nutrient Removal	N	7	N	7 marine mineral sediments
Production Export	N	10	N	
Sediment/Shoreline Stabilization	N	1,2,4,5,8,9	N	4 Unconsolidated stream bottom a source of sediment
Wildlife Habitat	Y	2,3,5,6,7,8	N	2 Direct observation only - no testing 3 Part of larger wetland bisected by gas main access road at property line, 8 Nearby
Recreation	Y	4,6,11	N	4 existing unauthorized trails,6 Assumed-no testing, 11 Especially from gas main ROW
Educational/Scientific Value	Y	2,4,10	N	Boulders pose safety hazard?
Uniqueness/Heritage	N	7,16,18,19	N	7-upland corridor, 18 Appears so-no testing
Visual Quality/Aesthetics	Y	6,7,10,11,12	N	7 Upper portion, 10 Low/steady noise from industrial park
ES Endangered Species Habitat				See Natural Heritage Bureau report
Other				

Notes:

* Refer to backup list of numbered considerations.

Norris Brook - downstream (East) of Oak St Ext - to Railroad (GREEN)

Wetland Function-Value Evaluation Form

Total area of wetland 3.34+/- Ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use North-Forest, South-Forest/Grassland/Residential Distance to nearest roadway or other development 0'+/- OakStX

Dominant wetland systems present PSS & PFO dominant Contiguous undeveloped buffer zone present Predominantly

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Lower

How many tributaries contribute to the wetland? 5 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Exeter Rose Farm, LLC

Latitude N42 59.328' Longitude W70 57.268'

Prepared by: MEJ Date 032718

Wetland Impact:
Type DIRECT / CROSSING Area 3,163+/- SF Perm

Evaluation based on:
Office Yes Field Yes

Corps manual wetland delineation completed? Y MEJ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	6,7,12,13,14	Y	6 Slowly permeable soils, 7 Norris Bk is perennial, 13/14 Obs. seeps & snow melt
Floodflow Alteration	Y	5,6,9,10,13,14,15,18	Y	15 Less constricted than OakStExt culvert
Fish and Shellfish Habitat	Y	1,2,7,8,10,14,16,17	N	7, Direct obs. only-no testing-pollutants on site
Sediment/Toxicant Retention	Y	1,2,4,6,7,8,10,11,14,16	Y	1 Stream can be sediment source, 2 Site is contaminated, 10 Norris Brook is perennial
Nutrient Removal	Y	3,4,6,7,8,9,10,12,13	Y	4 Former greenhouses, 8 Dense patches
Production Export	Y	1,4,7,10,12	N	7, Large dense patches, 12 P.Loosestrife
Sediment/Shoreline Stabilization	Y	1,2,6,7,8,9,12,13	N	
Wildlife Habitat	Y	2,4,7,8,11,13,14,16,19,21	Y	2 assumed-pollution sources exist, 4 Partially developed, 11 Swamp,
Recreation	Y	4,5,6,10,12	N	4 Neighborhood possibly-no real sign 6 Assumed-pollution sources exist 10 Small bus
Educational/Scientific Value	Y	2,3,5,8,9,11,12,14	N	3 three potential classes, 8 small bus, 9 Short drive, 12 impoundment
Uniqueness/Heritage	Y	4,5,7,8,11,13,19,21,22	Y	5 PSS dominant, 8 Short drive
Visual Quality/Aesthetics	N	2,6,8,11	N	daily passenger trains
ES Endangered Species Habitat				See Natural Heritage Bureau Report
Other				

Notes:

* Refer to backup list of numbered considerations.

Eastern Intermittent Stream (RED)

Wetland Function-Value Evaluation Form

Total area of wetland 0.88+/- Ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forested (Mature and Regrowth) Distance to nearest roadway or other development 450' OakStX

Dominant wetland systems present PFO & PSS Contiguous undeveloped buffer zone present YES

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Mid

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Exeter Rose Farm, LLC

Latitude _____ Longitude _____

Prepared by: MEJ Date 032718

Wetland Impact:
Type None Area NA

Evaluation based on:
Office Yes Field Yes

Corps manual wetland delineation completed? Y MEJ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	6,7,9,12,13,14	Y	6 slowly permeable sediments, 7 Intermittent, 9 Constricted outlet, 13/14 observed seeps
Floodflow Alteration	Y	5,6,7,9,13,15-18	Y	7 Intermittent outlet, 13 Intermittent
Fish and Shellfish Habitat	N	1,7,8,16,17	N	17 Intermittently defined
Sediment/Toxicant Retention	Y	3,4,6,7,8,10,13,16	N	3 Limited opportunity, 10 Intermittent,
Nutrient Removal	N	7,8,9,13	N	9 Woody stems
Production Export	N	1,7,12	N	7 Patchy, 12 Dogwood
Sediment/Shoreline Stabilization	N	1,2,9,13	N	1 Especially below constriction, 13 shrubs
Wildlife Habitat	Y	1,2,4,7,8,13,21	N	1 old woods road, 2 assumed, 21 Potential
Recreation	Y	4,6,11	N	4 Neighborhood mostly-bike trails, 6 Assumed-no testing
Educational/Scientific Value	Y	2,4,5,10,11-13	N	4 mostly natural 13 Railroad?
Uniqueness/Heritage	N	7,10,16,18,19,22	N	10 Railroad? 18 Assumed
Visual Quality/Aesthetics	N	7,10,11	N	10 Railroad?
ES Endangered Species Habitat				Refer to attached report from Natural Heritage Bureau
Other				

Notes:

* Refer to backup list of numbered considerations.

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

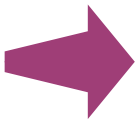
1. Wetland is large relative to the size of its watershed.
2. Deep water or open water habitat exists.
3. Overall potential for sediment trapping exists in the wetland.

4. Potential sources of excess nutrients are present in the watershed above the wetland.
5. Wetland saturated for most of the season. Ponded 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

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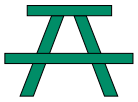
[1]In March 1995, a rapid wildlife habitat assessment method was completed by a University of Massachusetts research team with funding and oversight provided by the New England Transportation Consortium. The method is called WEThings (wetland habitat indicators for non-game species). It produces a list 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

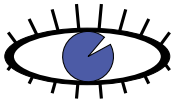
1. Wetland contains or is known to contain threatened, rare, or endangered species.
2. Little or no disturbance is occurring in this wetland.
3. Potential educational site contains a diversity of wetland classes which are accessible or potentially accessible.
4. Potential educational site is undisturbed 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 Delineation Report
Oak Street Extension
Exeter, NH 03833

Prepared for:

Exeter Rose Farm, LLC
953 Islington Street, Suite 23D
Portsmouth, NH 03801

Prepared by:

Marc Jacobs, Soil & Wetland Scientist
P.O. Box 417
Greenland, New Hampshire 03840

June 25, 2018

Wetland Delineation Report
Oak Street Extension
Exeter, New Hampshire

Introduction

The following remarks summarize our preliminary observations made during a delineation of jurisdictional wetlands at the above-referenced location. The subject property is comprised of the following parcels; assessors map 54, Lots 5-7 and map 63, Lot 205. The combined parcels total approximately 49 acres. Numerous site inspections were conducted in December 2015 to identify and delineate wetlands and confirm their extent. This report has been prepared based upon observations made during those on-the-ground investigations. Wetlands were identified and delineated according to the New Hampshire Department of Environmental Services (NHDES) – Code of Administrative Rules Section Env-Wt 100 – 900 and the Town of Exeter Zoning Ordinance – Article 9 – Natural Resource Protection – §9.1 Wetlands Conservation District.

General Site Description

The site is bounded to the east by active railroad tracks, to the north by the Henderson-Swasey Town Forest belonging to the Town of Exeter, to the west by developed industrial lands (Industrial Drive and Commerce Way) as well as Norris Brook Condominiums and to the south by densely developed residential neighborhoods of single-family homes. Refer to Exhibit 1.

Historic land uses at this location included a brick yard and later, rose growing greenhouses. Portions of the site, including wetlands, have been altered and some are contaminated with lead, coal ash and solid waste associated with prior land use. Numerous man-made wetlands and retention basins exist as a result of excavation and other earth moving activities. The man-made retention basin located east of and adjacent to Oak Street Extension, between the spring house and the pump house, was created by excavation and impoundment. The impoundment is the result of a poured concrete weir structure constructed across Norris Brook. The concrete weir has been partially breached by erosion along the south end. This retention basin contains a large plume of sediment. The man-made retention basins located north of Oak Street Extension captured runoff from the greenhouses. The runoff collected in the largest retention basin was then reused for irrigation. The hydrant along Oak Street Extension indicates that this retention basin also serves as fire protection.

The property is partially developed with 9 existing residential dwellings (5 of which are currently occupied or were occupied until recently) and several garages / outbuildings that are accessed by Oak Street Extension. Oak Street Extension is mostly asphalt but turns to gravel after the former rose packing house. The asphalt section is in significant disrepair. The concrete structure that formerly housed the rose packing operation and boiler house also remains. Areas of the property that formerly housed the greenhouse operations are now generally vegetated with fields that have a shrub / sapling component dominated by black locust (*Robinia pseudoacacia*). Remaining areas of the property are generally forested with a mix of softwood and hardwood tree species. Norris Brook, a perennial stream, runs along and through portions of the property. Another unnamed perennial stream (according to some sources) and two unnamed intermittent streams also drain the property and all are tributary to Norris Brook within the confines of the site. Norris Brook eventually drains to the Squamscott River, which is tidally influenced at that juncture. The tidal influence does not extend to the subject properties under normal circumstances. Most streams within the property sustain associated adjacent wetlands with the exception of the inland stream that drains the large wetland on Lot 205. There are numerous mountain bicycle trails throughout the property. A gas line/easement, 35-feet in width, traverses the western tip of the property along Norris Brook. There is a spring house on the property, along Oak Street Extension, near Forest Street, which is visited frequently.

Field Conditions

The winter of 2014-2015 involved snowfalls that were well above average. Climatic conditions leading up to the delineation involved below average precipitation and moderate drought conditions but Rockingham County experienced above average precipitation for the month of December 2015 when field investigations were conducted. In stark contrast to the winter of 2014-2015, the winter of 2015-2016 experienced below average snowfall. The ground was bare well into the 2016, which permitted the successful delineation of wetlands.

Methods

Site investigations utilized the routine methodology described in the 1987 Federal Manual for Identifying and Delineating Jurisdictional Wetlands which employs a three factor approach that includes (hydrophytic) vegetation, (hydric) soils and signs of hydrology, consistent with Exeter zoning regulations as summarized below. The routine method involves observing the plant community and visually estimating to ascertain if and where it is dominated by hydrophytic vegetation. If the plant community is dominated by hydrophytic vegetation then holes are dug and soils are evaluated along transects above and below the estimated boundary of dominant hydrophytic vegetation (using tile spade and/or Dutch auger) to ascertain the presence or absence of hydric soils. Where the soils are determined to be hydric and apparent signs of hydrology are also present the area is considered a wetland. The process is repeated as needed for perceived or apparent changes in the plant community.

Jurisdictional wetlands were identified and wetland-upland boundaries within the subject properties were delineated and marked in the field with solid color pink survey flags. Each flag bears a letter and number to assist in their subsequent field location by instrument survey. The flag sequences used were as follows: A1-A6, B1-B4, C1-C43, D1-D14, E1-E66, F1-F18 + F1a-F1e, G1-G51, H1-H30, I1-I52, J1-J60, K1-K7, L1-L5, M1-M4, N1-N15, O1-O15, P1-P5, Q1-Q12, R1-R10, S1-S48, T1-T35, U1-U69 + U47a, V1-V14, W1-W14 + W1a-W1f, X1-X6, Y1-Y39, Z1-27. The flags were subsequently located via instrument survey and their locations were plotted. Proper connection of the flag locations results in the wetland-upland boundary depicted on various site plans prepared in support of a proposed project, which necessitated the preparation of this report. (Copies of site plans depicting the wetland delineation which have been reviewed by the wetland scientists(s) are individually stamped, signed and dated.) Due to the altered nature of some wetlands at this location, delineation methodology required the use of best professional judgment in addition to the technical guidance cited above and in the certification statement found toward the end of this report.

General Wetland Descriptions

Wetlands are identified on the Existing Conditions Plan prepared for the proposed Exeter Rose Farms, LLC residential development. Wetland areas discussed in this report are also identified alphabetically A – N on the Town of Exeter Wetland Conservation District Area & Impacts Plan. These alphabetical designations are intended to illuminate the discussion regarding wetlands at this location but have no correlation to the flag series identified above. The following remarks briefly describe each wetland area.

Area A

This wetland area involves a deeply incised ravine (and associated wetlands) that convey Norris Brook. This section of Norris Brook is located above the confluence with Watson Brook and is largely unaltered with the exception of the portion of the area which falls within the gas line easement. Norris Brook is a perennial water course. Wetlands are sustained by Norris Brook as well as by ground water hydrology. There are approximately 11,857± square feet (SF) of this wetland complex which fall within the confines of the site in this area.

Area B

Wetland Area B involves three distinct sections. The westerly section involves an intermittent stream and associated wetlands upstream of the confluence of Watson and Norris Brooks. These wetlands involve poorly drained soils and are largely unaltered. The middle section includes Norris Brook and associated wetlands downstream of the confluence with Watson Brook to Oak Street Extension. The middle section of wetlands involve a combination of poorly and very poorly drained hydric mineral soils. This area has been significantly altered by filling along the northern boundary. Portions of the slope overlooking this area contain coal ash and solid waste and are proposed for remediation. Finally, there is a lobe of this wetland complex that extends north-south parallel to and west of Oak Street Extension. This lobe is dominated by poorly drained hydric soils and a sapling/shrub vegetation community. This lobe was fragmented from wetlands located along the unnamed perennial stream east of Oak Street Extension by the construction of Oak Street Extension (which likely dates back 100 years or more). Area B includes a man-made retention basin near the confluence of the intermittent stream and Norris Brook. The retention basin was created by excavation and filling. The basin is sustained primarily by groundwater. During periods of high groundwater the area temporarily becomes hydraulically connected to Wetland Area B through twin culverts to the south as well as a spillway to the east. There are approximately 100,049± SF of this wetland complex which falls within the confines of the site.

Areas C-E

Wetland Areas C-E are isolated man-made retention basins created by excavation that intercepted seasonal high groundwater and formally received runoff from the greenhouses. These areas contain significant amounts of concrete blocks and chunks from the former greenhouse slabs as well as automobile tires and polyvinyl chloride (PVC) pipe among other debris. These areas are proposed for remediation as part of the Remedial Action Plan as they are contaminated with lead. Wetland areas C-D are 2,633± SF, 761± SF and 392± SF in size respectively.

Area F

Wetland Area F is an isolated man-made retention basin created by excavation and is 10,206± SF in size. This basin has steep sides and provided irrigation for the former greenhouse operations. The basin has a hydrant and also provides fire protection. Area F overflows occasionally during periods of high ground water into Area H through a culvert beneath Oak Street Extension. This area is contaminated by lead and is included in the Remedial Action Plan. The water quality is low owing to poor water circulation and large quantities of aquatic vegetation.

Area G

Wetland Area G is an isolated wetland area created by a combination of excavation and filling, and was likely created unintentionally during the construction of the nearby man-made retention basin (depicted as Area B4). Wetland Area G is 276± SF in size. This area is situated within the slope that contains coal ash and solid waste and is therefore included in the Remedial Action Plan. The area is sparsely vegetated and was identified as a wetland based largely on the presence of soils that are marginally hydric.

Area H

Wetland Area H is an isolated man-made wetland area created by excavation and filling and is 1,032± SF in size. The area receives intermittent overflow drainage from Area F during periods of high runoff. This runoff then infiltrates into the ground and discharges as groundwater at the toe-of-slope in wetlands adjacent to Norris Brook. The dominant substrate in this area involves poorly drained hydric soils. The area is vegetated with shrubs, saplings and small diameter trees.

Area I

Wetland Area I involves a steep slope and is sustained primarily by groundwater discharging from adjacent upland slopes. This area could be considered part of Wetland Area B complex but we have designated it Wetland Area I for ease of description and distinction. The area has sustained some erosion and slumping but is currently stable. The erosion is natural and does not appear to have been induced or exacerbated by human activity. There are approximately 668± SF of this wetland complex which fall within the confines of the site in this area.

Area J

Area J involves emergent and scrub-shrub wetlands associated with the unnamed perennial stream on the west side of Oak Street Extension. The wetland-upland boundary is man-made by filling in this location. The dominant substrate involves poorly drained soils. There are approximately 15± SF of this larger off-site wetland complex which fall within the confines of the site in this area.

Area K

Wetland Area K involves Norris Brook and associated wetlands from Oak Street Extension east to the railroad tracks. This area also includes the unnamed perennial brook and an intermittent stream and their associated wetlands respectively. Finally, this area also includes the man-made retention basin created by excavation and impoundment (concrete weir retention structure) immediately adjacent and downstream (east) of Oak Street Extension. The dredge spoils which resulted from this man-made retention basin were stockpiled immediately south of the basin and may have resulted in made land or upland (conversely filled wetlands). This activity likely predated local and state jurisdiction.

The wetlands along Norris Brook in this area generally involve emergent and scrub-shrub types. The habitat along the unnamed perennial stream and the intermittent stream generally involve forested wetlands. The dominant substrate involves poorly drained hydric soils. There are approximately 185,163± SF of this wetland complex which fall within the confines of the site in this area.

Area L

This area involves intermittently flooded forested wetlands with poorly drained soils. This area periodically drains to the south along the railroad tracks. There are approximately 23,073± SF of this larger wetland complex which falls within the confines of the site in this area.

Area M

Area M primarily involves a wet meadow with poorly drained soils. This area is drained by a scoured channel which receives intermittent flow as described in greater detail below. Wetland area M is approximately 12,359± SF in size.

Area N

Area N is a man-made retention basin created primarily by excavation. The area is sustained primarily by precipitation which falls directly on the pond as well as groundwater and some sheet flow from adjacent uplands. The basin periodically, though infrequently overflows to the north though a perched culvert. The basin supports a significant population of broad-leaved cat-tail (*Typha latifolia*). Wetland area N is approximately 7,154± SF in size.

Local Jurisdiction

Exeter zoning, §9.1.4.I., defines wetlands as follows:

> Wetland: Pursuant to RSA 482-A:2.X, an area that is inundated or saturated by surface 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. They include, but are not limited to, swamps, bogs, marshes, ponds, lakes, and all such areas as included in the jurisdictional definition of the New Hampshire Wetlands Board Administrative Rules, Chapter Wt 100 as subsequently amended.

Wetlands are subject to various buffers as per §9.1.3.E of the zoning and various structure setbacks as per §9.9.2 of the Exeter Subdivision regulations. We have inserted the table from §9.9.2 of the subdivision regulations below because it succinctly summarizes both buffers and setbacks by wetland category. It should be noted that there are no prime or exemplary wetlands within the confines of the project site. Wetlands with very poorly drained mineral soils may exist within the confines of Wetland Area B, adjacent to Norris Brook, upstream of Oak Street Extension. The presence of very poorly drained soils are likely influenced by historic beaver activity and are intricately co-mingled with poorly drained soils in this area such that it was not practical to accurately separate the two (for mapping or administration of the buffer). For this reason the project plans depict a 50 foot buffer, instead of a 40 foot buffer, along Norris Brook, both upstream and downstream of Oak Street Extension.

Wetlands categories and setbacks:

Wetland Category	No cut / No Disturbance Setback (1)	Parking Setback (2) Waste Water Systems Structural Setback
Prime Wetland	100' no cut/no disturb	125'
Exemplary Wetlands	50' no cut/no disturb buffer	75'
Vernal Pool (V.P. >/= 200 sf)	75' no cut/ no disturb buffer	100'
Wetlands with Very Poorly Drained (VPD) Soils	50' no cut/ no disturb buffer	75'
Wetlands with Poorly Drained	40' no cut/ no disturb buffer	75'
Inland Streams (incl. intermittent)	25' no cut/ no disturb buffer	75' (1)

Wetlands and the impoundment /retention basin created by the concrete retaining structure on Norris Brook downstream (east) of Oak Street Extension are not locally jurisdictional as wetlands by virtue of their man-made status according to §9.1.3.D of the zoning. Additionally, §9.3.2.B and §9.3.2.G in the Exeter Shoreland Protection District Ordinance refer to contiguous wetlands and the extent of same being

dependent upon the existence of discontinuities. The zoning defines man-made and natural discontinuities. Man-made discontinuities include dikes and barriers such as roads, etc. The zoning implies, but does not specifically state, the need for a lack of hydrologic continuity as a result of the discontinuity. The presence of the concrete barrier on Norris Brook constitutes a discontinuity. The barrier is breached however therefore hydrologic continuity exists. Other discontinuities exist at this site.

The Wetland Conservation District, specifically §9.1.3.C., includes inland streams shown on the United States Geological Survey (USGS) 7.5 X 15 minute quadrangle, including intermittent streams, and further provides a 25 foot no cut / no clear vegetated buffer per §9.1.3.E.5. Exeter zoning does not clearly define inland streams except to say they appear on 7.5 X 15 Minute USGS quadrangles but it is our understanding that inland streams are those streams with banks that transition directly to uplands. There are two intermittent streams within the project that transition directly to uplands, one that drains the wet meadow – Wetland M and one that drains the man-made retention basin – Wetland N during times of high flow. Both are located on the Dagostino property (Lot 205) but are not found on the USGS quadrangle (Refer to Exhibit 2).

The scoured channel that drains the wet meadow (Area M) was not created by excavation but is man-made. The channel appears to experience continued erosion although it is our opinion that the channel has reached equilibrium and the erosion is minimal at this point. The original erosion was likely the result of the conversion of the forest and creation of the meadow and the associated loss of the tree canopy with subsequent increases in runoff rates due to the change in land cover. (The meadow was created more than 25 years ago.)

The ditch that drains the man-made retention pond on the Dagostino property (Area N on Assessors Lot 205) is also man-made by excavation and appears to receive minimal intermittent flow. This is due to the small catchment area which drains to this pond. The pond rarely fills up or discharges as a result.

Another scoured channel, adjacent to the railroad tracks and associated with a municipal storm drain outfall, is experiencing considerable ongoing erosion and associated scouring and sedimentation of downgradient wetlands. Any wetlands in this area were created and are now sustained by the intermittent storm flows and are therefore man-made. These wetlands are contiguous to Wetland Area K.

The status of streams as intermittent was confirmed by direct observation during non-drought conditions.

Invasive Species

Infestations of Japanese knotweed / bamboo (*Reynoutria japonica or Polygonum cuspidatum*), purple loosestrife (*Lythrum salicaria*), garlic mustard (*Alliaria petiolata*), Asian bittersweet (*Celastrus orbiculata*), glossy buckthorn (*Frangula alnus*), multiflora rose (*Rosa multiflora*), olive (*Elaeagnus* sp.), honeysuckle (*Lonicera* sp.), burning bush (*Euonymus alatus*) and Japanese barberry (*Berberis thunbergii*), all of which are considered invasive species, are apparent within the site. Japanese knotweed is especially dense along the east side of Oak Street Extension, between the unnamed perennial stream and Norris Brook, and was likely imported with fill materials deposited in this area. The fill is not of recent deposition.

Shoreland Protection

None of the water courses which drain the property are identified on the New Hampshire Department of Environmental Services – Consolidated List of Waterbodies Subject to RSA 483-B, therefore there is no jurisdiction subject to the state Shoreland Water Quality Protection Act within the subject properties.

Norris Brook, from the Squamscott River to its confluence with Watson Brook, is subject to the local Shoreland Protection District Ordinance (§9.3.3.C.1). Additionally, perennial streams within the Squamscott River watershed are also subject to the local Shoreland Protection District Ordinance (§9.3.3.C.2). The zones extend horizontally 300 feet and 150 feet from Norris Brook and other perennial streams respectively and impose building setbacks of 150 feet and 100 feet respectively.

Vernal Pools

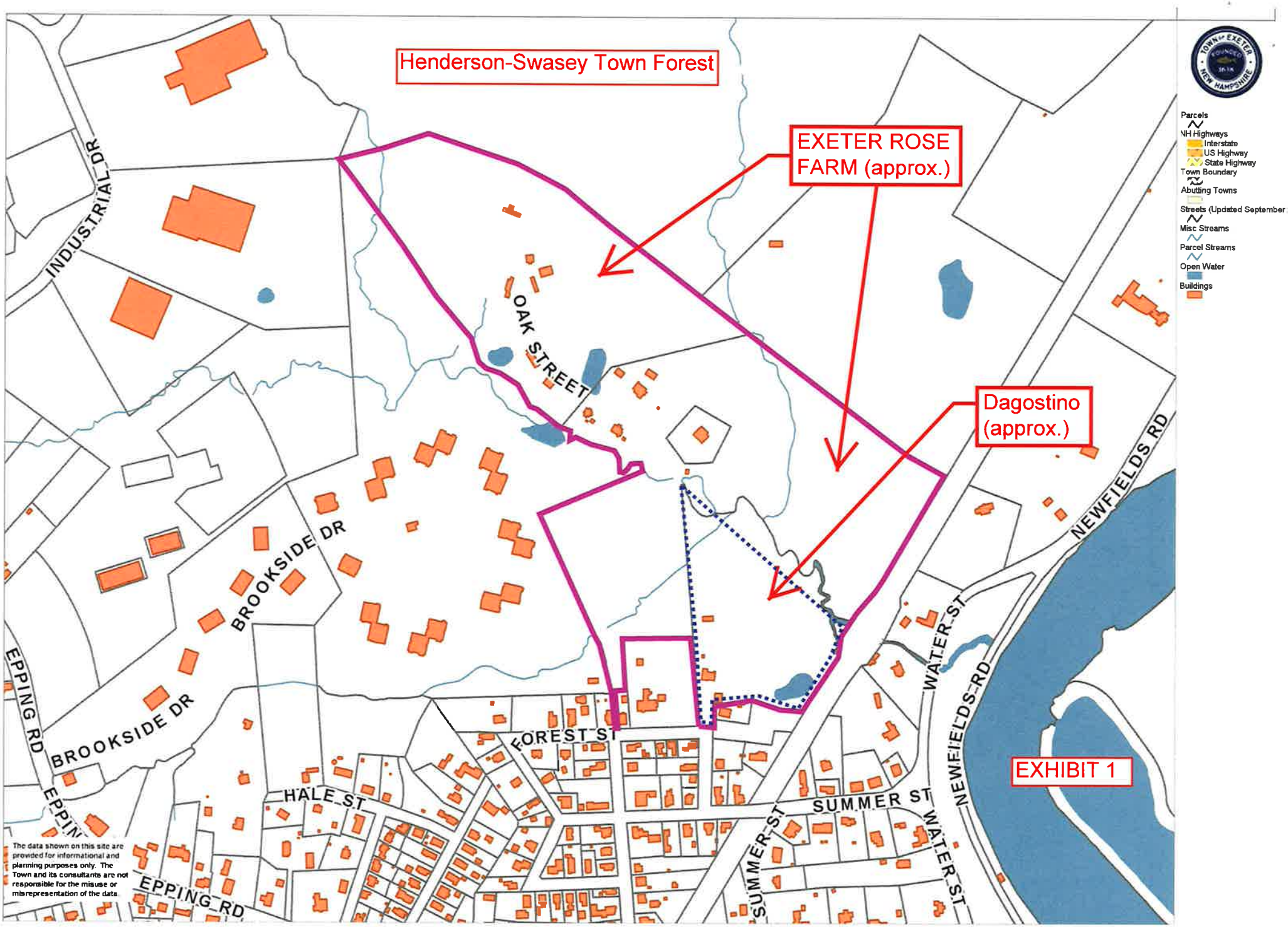
Vernal pools are temporary bodies of water that provide essential breeding habitat for certain amphibians and invertebrates as well as important supporting habitat for numerous other species, especially reptiles such as turtles. We observed several areas within the subject properties that we thought had potential to constitute vernal pools according to the NH Code of Administrative Rules – Env-Wt 101.106, Env-Wt 101.75 and Env-Wt 101.86. One such area is located within the gas easement at the western tip of the property and has not been further evaluated as a result. Other areas which appear to temporarily pond water, such as Wetland Areas C-G were investigated for secondary vernal pool indicators since field investigations conducted to delineate wetlands took place outside of the window normally considered ideal for confirming the presence of primary vernal pool indicator species such as wood frogs (*Lithobates sylvaticus*) and mole salamanders (*Ambystoma* sp.). We did not observe any secondary vernal pool indicators therefore a number of follow up inspections were conducted to observe these areas during April and May 2018 and no primary or secondary vernal pool indicators were observed therefore field data sheets were not completed.

Prime Wetlands

The NHDES applies applicable rules and law to all municipally designated prime wetlands (and in certain municipalities all land within 100-feet of municipally designated prime wetlands). Prime wetlands are those wetlands with higher functions and values and receive additional protection under the law. Exeter has municipally designated prime wetlands recognized by NHDES. There are no prime wetlands on the subject properties. Refer to Exhibit 3.

Certification Statement

Manmade and natural jurisdictional wetland boundaries were delineated by Marc Jacobs, Certified Wetland Scientist number 090, and Jon Balanoff in December 2015 according to the standards of the US Army Corps of Engineers - Wetlands Delineation Manual - 1987; the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region - 2012; the Code of Administrative Rules, NH Department of Environmental Services - Wetlands Bureau – Env Wt 100-900 and the Town of Exeter Zoning. Predominant hydric soils were identified utilizing the Field Indicators for Identifying Hydric Soils in New England, Version 3, April 2004 and the Field Indicators of Hydric Soils in the United States, Version 7, 2010. The status of vegetation as hydrophytic was determined according to the U.S. Army Corps of Engineers - Northcentral and Northeast 2014 Regional Wetland Plant List. Copies of site plans depicting the wetland delineation which have been reviewed by the wetland scientist are individually stamped, signed and dated. This note has been customized for this location and delineation.


Henderson-Swasey Town Forest
EXETER ROSE FARM (approx.)
Dagostino (approx.)
EXHIBIT 1
INDUSTRIAL DR
OAK STREET
BROOKSIDE DR
BROOKSIDE DR
EPPING RD
EPPING RD
EPPING RD
HALE ST
FOREST ST
SUMMER ST
SUMMER ST
WATER ST
WATER ST
NEWFIELDS RD
NEWFIELDS RD
Parcels
NH Highways
Interstate
US Highway
State Highway
Town Boundary
Abutting Towns
Streets (Updated September
Misc Streams
Parcel Streams
Open Water
Buildings
The data shown on this site are provided for informational and planning purposes only. The Town and its consultants are not responsible for the misuse or misrepresentation of the data.
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640
1280 ft
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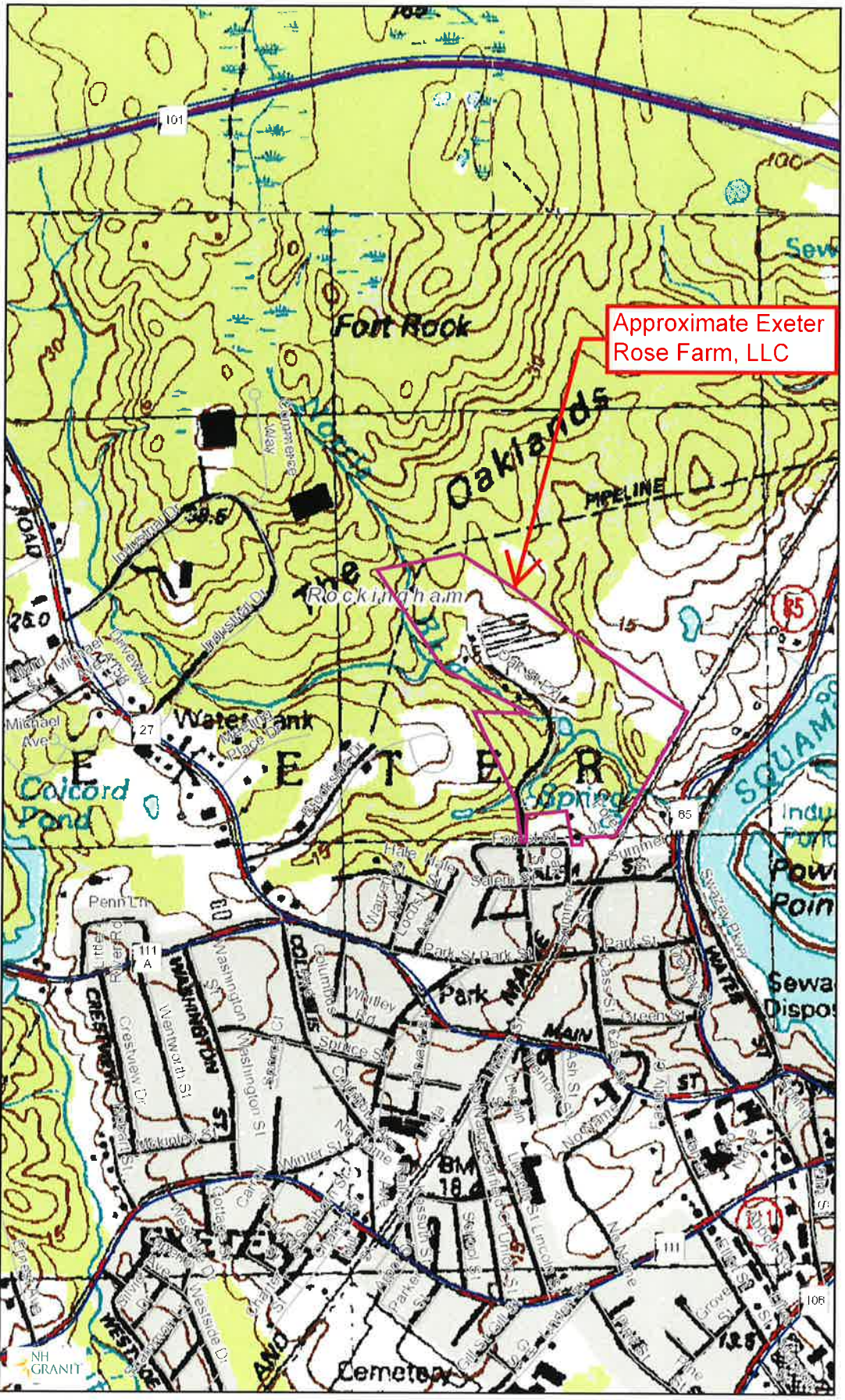
Exeter MapsOnline

Map by NH GRANIT



Legend

- State
- County
- City/Town
- Interstates
- Turnpikes
- US Routes
- State Routes
- Local Roads

EXHIBIT 2

MCJ

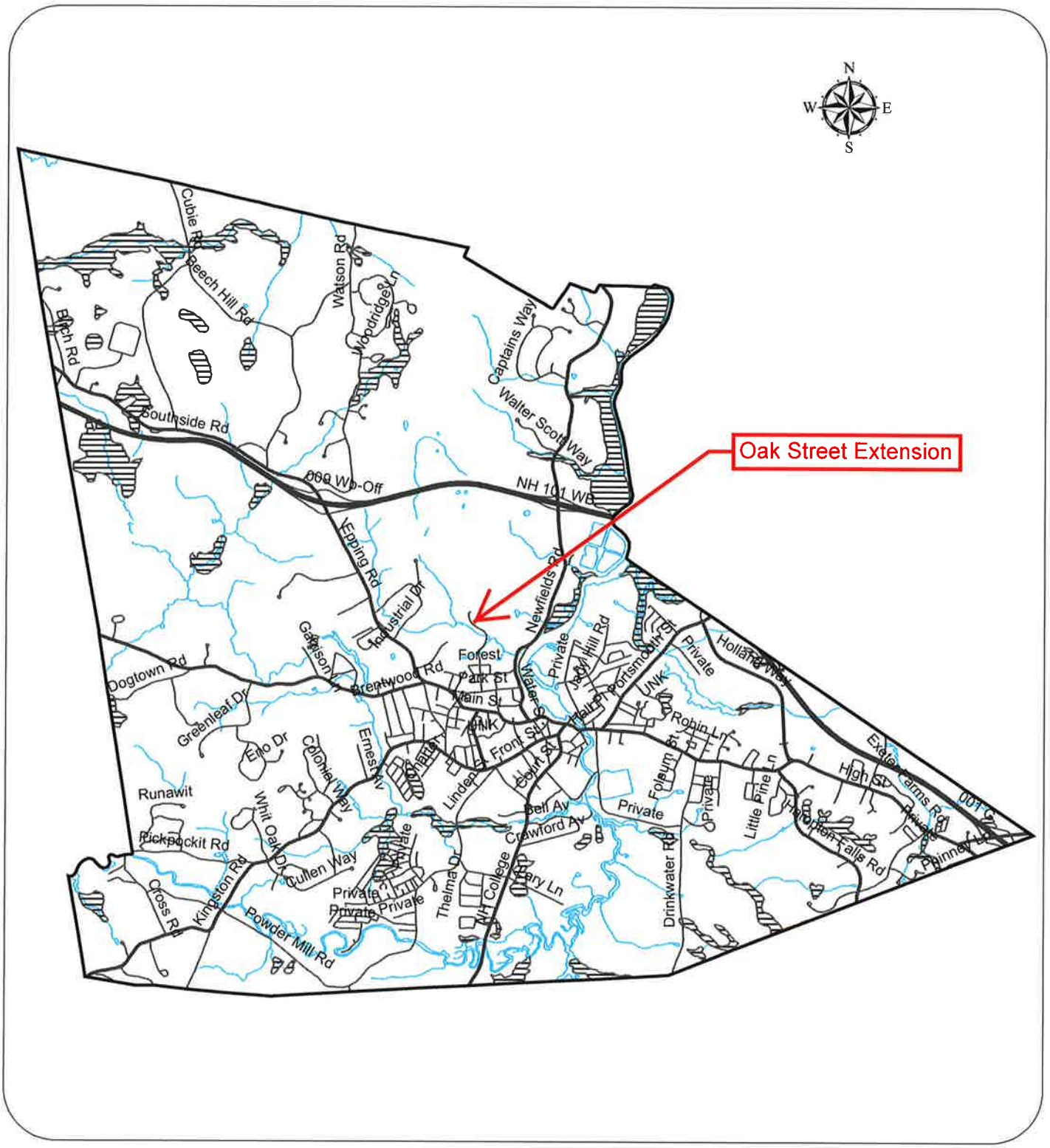
Map Scale

1: 12,988

Map Generated: 8/18/2016

Notes

Rose Farm
Oak Street Extension
Exeter, NH



Legend

Roads
- Town
- State

Hydrography
- Surface Water

Prime Wetland

100 Foot Buffer
- NO
- YES
- 100 Foot Buffer

Prime Wetlands in Exeter, NH

The coverages presented are under constant revision as new sites or facilities are added, and may not contain all potential or existing sites or facilities. These maps were prepared using data supplied by the municipality and the information was digitized to the best of our ability. For prime wetland and prime wetland buffer locations for a specific site, please contact the municipal office where the project is proposed. NHDES is not responsible for the use or interpretation of this information by third parties.

New Hampshire State Plane Coordinate System
North American Datum 1983 (feet)

1 0.5 0 1 2
Miles

New Hampshire Department of Environmental Services
Wetlands Bureau
29 Hazen Drive
P.O. Box 95
Concord, NH 03302-0095

DATE PRODUCED
October, 2012

EXHIBIT 3

Wetland Functional Evaluation

Of

Exeter Rose Farm, LLC
Assessors Tax Map 54 / Lots 5-7 and Tax Map 63 / Lot 205
Oak Street Extension
Exeter, NH

Prepared for

Exeter Rose Farm, LLC
953 Islington Street, Suite 23D
Portsmouth, NH 03801

By

Marc E. Jacobs
Certified Wetland & Soil Scientist
P.O. Box 417
Greenland, NH 03840-0417

April 3, 2018

Exeter Rose Farm, LLC
Exeter, NH
April 3, 2018

EXETER ROSE FARM, LLC

Wetland Functional Evaluation

TABLE OF CONTENTS

Wetland Functional Evaluation
Exeter Rose Farm, LLC
Oak Street Extension
Exeter, NH

1.0 Introduction

Pursuant to the request by the Exeter Rose Farm, LLC to the Town of Exeter, New Hampshire for subdivision approval involving work within wetlands and, more specifically, the Wetland Conservation District (Zoning Article 9 - §9.1.6.C) at the above-referenced location off of Oak Street Extension in Exeter, NH, specifically Assessors Map 54 – Lots 5-7 and Map 63 – Lot 205, we herewith submit this Wetland Functional Evaluation to supplement the application as required under Town of Exeter, New Hampshire – Site & Subdivision Regulations – Section 9.9.3.2.

This report provides an assessment of the existing wetland functions and values at this location according to the United States Army Corps of Engineers - New England District, Highway Methodology Workbook *Supplement* – September 1999 Edition (updated in 2015). This study does not attempt to evaluate the potential effects of global climate change and associated sea level rise or tidal surge on the functions and values of wetlands at the subject properties. This evaluation may use the terms subject properties and subject property interchangeably.

This evaluation assesses the functions and values listed below for primary wetland areas based upon the current condition, noting that the site is partially developed. The functions and values of a wetland or adjacent wetlands may be altered, or more specifically, the effectiveness of a wetland or adjacent wetlands to provide a particular function may be altered (increased or decreased) as a result of modifications to adjacent uplands, impacts to wetlands elsewhere on site or other development in the watershed.

Attached is a copy of a composite 7.5 X 15 Minute United States Geological Survey Quadrangle(s) on which is depicted the approximate location of the subject property. Digital images and associated descriptions are also attached to this report. Refer to Exhibit 1.

2.0 Existing Conditions

2.1 General Property Description

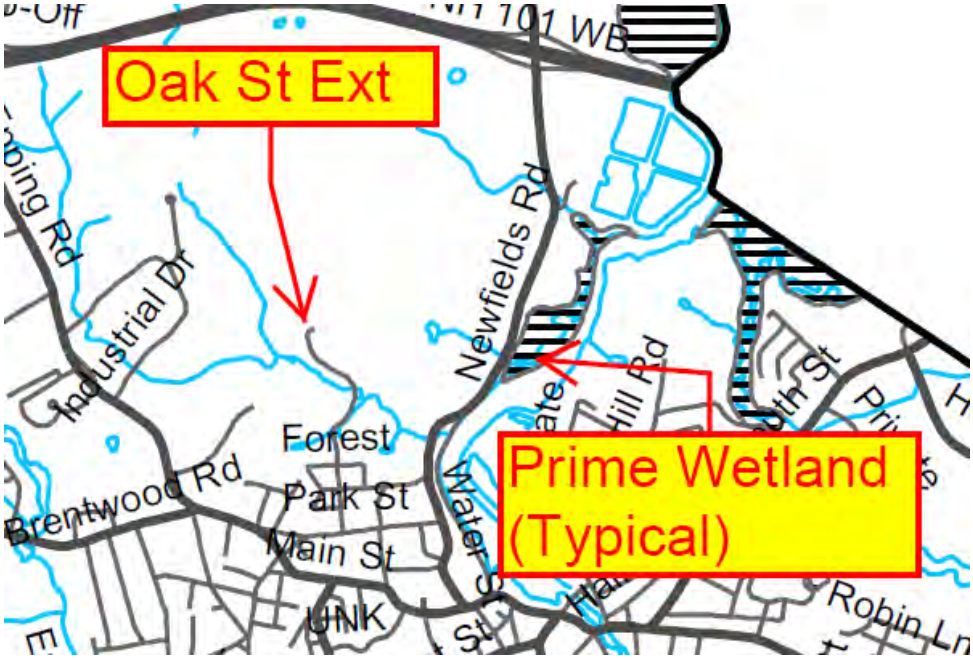
The site is bounded to the east by active railroad tracks, to the north by the Henderson-Swasey Town Forest belonging to the Town of Exeter, to the west by developed industrial lands (Industrial Drive and Commerce Way) as well as Norris Brook Condominiums and to the south by densely developed residential neighborhoods of single-family homes. A large gas main bisects the western tip of the property.

Historic land uses at this location included a brick yard and later, rose growing greenhouses and packing facilities as well as residential housing. Significant portions of the site, including wetlands, have been altered and some areas are contaminated with lead, coal ash and solid waste associated with the prior land uses. Numerous man-made wetlands and retention ponds exist as a result of excavation and other earth moving activities. The man-made retention pond located east of and adjacent to Oak Street Extension, between the spring house and the pump house described below, was created by excavation and impoundment. The impoundment consists of a poured concrete structure installed across Norris Brook. The concrete structure has been partially breached due to erosion at the south end. The dredge spoils from pond excavation are stockpiled on the south side of the pond in what were likely wetlands before they were filled. The retention pond contains a large plume of sediment from upstream. It does not appear that this pond was used for irrigation. The man-made retention ponds located north of Oak Street Extension captured runoff from the greenhouses. The runoff collected in the largest retention pond was then reused for irrigation. The hydrant along Oak Street Extension indicates that this retention pond also serves as fire protection.

The property is partially developed with 9 existing residential dwellings (5 of which are currently occupied) and several garages / outbuildings that are accessed by Oak Street Extension, which is in significant disrepair. The concrete structure that formerly housed the rose packing operation and possibly the heating system also remains. Areas of the property that formerly housed the greenhouse operations are now generally vegetated with fields that have a shrub / sapling component dominated by black locust (*Robinia pseudoacacia*). When the greenhouses were dismantled the concrete slabs were bulldozed and partially buried / exposed remnants of the concrete slabs as well as piping and other materials can be seen throughout the area and remain a significant hazard to pedestrians, especially when occasional subsurface cavities are encountered. Remaining areas of the property are generally forested with a mix of softwood and hardwood tree species dominated by oak, pine and maple. Norris Brook, a perennial stream, runs along and through portions of the property. Another unnamed perennial stream (according to some sources) and two unnamed intermittent streams as well as numerous groundwater seeps (owing to surficial geology and site soils) also drain the property and all are tributary to Norris Brook within the confines of the site. Norris Brook eventually drains to the Squamscott River, which is tidally influenced at this juncture. The influence of the normal tidal cycle does not extend to the subject properties. Most streams within the property sustain associated wetlands. There are numerous mountain bicycle trails throughout the property. A gas line/easement, 35-feet in width, traverses the western tip of the property along Norris Brook. There is a spring house on the property, along Oak Street Extension, near Forest Street, which is visited frequently by residents of the town. Water is provided to the existing homes on the subject property from the spring via a pump house (which is located adjacent to Oak Street Extension, between Oak Street Extension and aforementioned impoundment / pond). The existing homes are served by individual sewage disposal systems of unknown origin and status.

There are no prime wetlands on or immediately adjacent to the subject property. Prime wetlands are those wetlands with higher functions and values and receive additional protection under state law. Exeter has municipally designated prime wetlands recognized by NHDES. Refer to Figure 1 below.

Figure 1. Prime Wetlands (NHDES Web Site)



2.2 General Project Description

The project proposes an open space development with construction of 3,788± linear feet of new roadway, servicing approximately 37 new single-family homes. The proposed project will be serviced by municipal water and sewer utilities. Portions of the site which are contaminated with lead, coal ash and solid waste are proposed to be remediated during development. The project proposes to relocate the existing trail that traverses the western end of the property. The project is also proposing 23± acres of open space (approximately 46 percent of the property) as well as a neighborhood recreation area. The project will be covered by a Home Owners Association (HOA), which will be responsible for management of the open space and spring in perpetuity.

2.3 Study Area Determination

Determination of suitable study areas can be somewhat subjective depending upon what criteria are used to define the study area, especially since wetlands are natural systems and do not recognize political boundaries such as property lines and because all wetland systems have variations in physical attributes within a seemingly discreet wetland area.

For this study we distinguished four study areas with an emphasis on hydrology and, to a lesser degree, flooding. Highway Methodology Wetland Function-Value Forms were completed for each of the four study areas and copies of the completed forms are attached. Refer to the attached map (Exhibit 2) for a graphic representation of the lateral extent of the four study areas.

Wetlands associated with Norris Brook upstream and downstream of Oak Street Extension were separated. They were apparently part of the same wetland system prior to the construction of Oak Street Extension. The fill placed to construct Oak Street Extension, especially when considered

with the culvert at Oak Street Extension, create a logical break. Norris Brook is a perennial stream which flows west to east. Wetlands associated with Norris Brook located upstream (west) of Oak Street Extension are shaded in blue while wetlands adjacent to Norris Brook located downstream (east) of Oak Street Extension are shaded in green on Exhibit 2. Wetlands associated with the unnamed perennial stream were combined with the downstream section of wetlands associated with Norris Brook and are also shaded in green. The two primary intermittent streams that drain to Norris Brook were also evaluated separately. Wetlands associated with the western intermittent stream, which is proposed to be crossed by a cul-de-sac, are shaded in yellow while wetlands associated with the eastern intermittent stream are shaded in red on Exhibit 1.

Wetlands adjacent to Norris Brook are sustained by periodic overbank flooding supplemented by significant groundwater inputs, with lesser inputs from sheet / overland flow and finally direct precipitation. Numerous groundwater seeps can be observed around the Norris Brook drainage area and we have noted two of the more significant seeps on Exhibit 2.

The subject property includes numerous isolated wetlands that were not included in the evaluation. These isolated wetlands are man-made, both intentionally for purposes such as irrigation and incidentally during removal of the greenhouse facilities. Several of the isolated wetlands are contaminated with hazardous materials, as are adjacent uplands, and as such are proposed to be altered or eliminated during remediation of these contaminated areas.

2.4 Wetland Study Area Descriptions

Western Intermittent Stream (Yellow) Study Area

Wetlands associated with the western intermittent stream are depicted in yellow shading on Exhibit 2. The stream has origins in largely forested areas located north of the subject property and the gas pipeline. The gas pipeline includes a gravel access road which concentrates and conveys the stream through a high-density polyethylene (HDPE) corrugated plastic culvert at the property line with the subject. The culvert is perched at this location. The stream flows through a forested area with a dense canopy dominated by coniferous trees (White pine) and poorly drained hydric soils which are dominated by marine sediments having silt and clay textures. The stream and wetlands are the same in many locations although there are patches of adjacent wetlands, especially where supplemental hydrology provided by groundwater exists. The groundwater inputs are not as strong as those along Norris Brook due to the adjacent upland soil types which are dominated by loamy glacial till parent materials. There are patches of scrub-shrub wetlands associated with the groundwater influenced areas, otherwise the dominant wetland classification according to the National Wetland Inventory (NWI) and Cowardin system is Riverine, Intermittent, Unconsolidated Bottom, Intermittently Flooded (R4UBJ). The NWI has identified this stream as perennial however we have observed the stream in a no-flow condition during non-drought conditions. The relatively small watershed for this stream also contradicts a conclusion that the flow is perennial.

Norris Brook – Upstream (Blue) Study Area

Wetlands associated with Norris Brook located upstream (west) of Oak Street Extension are depicted in blue shading on Exhibit 2 and generally involve palustrine forested and scrub-shrub vegetation cover types. Watson Brook is tributary to Norris Brook at the west end of this study area as is the western intermittent stream described above.

The wetlands and Norris Brook are confined by steep slopes in this area. The steep slopes on the north (south facing) side are adjacent to Oak Street Extension and the former greenhouse packing and heating facilities. Much of the length of the north slope starting near the man-made retention basin at the base of the slope behind the former packing house and Oak Street Extension has been filled and the fill often includes solid waste such as white goods and automobile tires as well as coal ash. Groundwater seeps can be observed emanating from these waste materials in some locations. The fill appears to have been pushed over an existing bank in many places and is nestled amongst large trees in numerous locations. Indeed, the largest tree observed on site is a 32.5-inch diameter White oak located on the north slope below the former packing house. The north slope is currently forested however as numerous trees have grown back since this fill was placed.

The south slope is forested with a mix of soft and hardwood species that include a significant number of conifers such as hemlock. One groundwater seep on the south slope may be receiving stormwater from adjacent development and appears to be experiencing minor erosion with subsequent sedimentation of the wetland at the toe-of-slope and Norris Brook.

Norris Brook is moderately sinuous in this study area and drains to a 36-inch diameter reinforced concrete pipe (RCP) at Oak Street Extension. The culvert is partially plugged by debris and acts as a constriction to flow. The remains of an earthen berm were observed adjacent to the culvert. The berm resembles an old beaver dam but no associated remains of a beaver lodge have been observed. The berm has been breached. The dominant substrate in the study area involves poorly drained soils derived from marine sediments having silt and clay textures. There are pockets of very poorly drained soils confined within the poorly drained soils and we speculate that their existence and development may be associated with the flooding or impoundment caused by the aforementioned berm or beavers but this is not clear. (Some of the various resource maps we have examined over the last 2 years indicate flooding or ponding in this area.) Braided channels can be observed and indicate occasional overbank flooding.

Water quality of Norris Brook appears to be good. Turbidity is low overall but the intermittent stream and Watson Brook contribute sediment and the stream bottom is unconsolidated and also likely contributes sediment during larger storms. It is not known if the pollutants associated with the portion of the site which is contaminated exist in the stream. Lead is relatively immobile and the solid waste is not likely an issue.

The relatively large lobe of the wetland area shaded in blue that extends north-south and parallel to Oak Street Extension is sustained largely by groundwater with occasional intermittent flow from impervious and slowly pervious surfaces associated with Oak Street Extension and is eventually tributary to Norris Brook. The area is predominantly vegetated with shrubs and saplings and was likely contiguous with wetlands adjacent to the unnamed perennial brook before the construction of Oak Street Extension. The dominant substrate in this area involves poorly drained soils derived from marine sediment parent materials dominated by silt and clay textures. This area does not generally support standing water although it is conceivable that standing water backed up into this area if the berm identified above was ever functional.

Norris Brook – Downstream (Green) Study Area

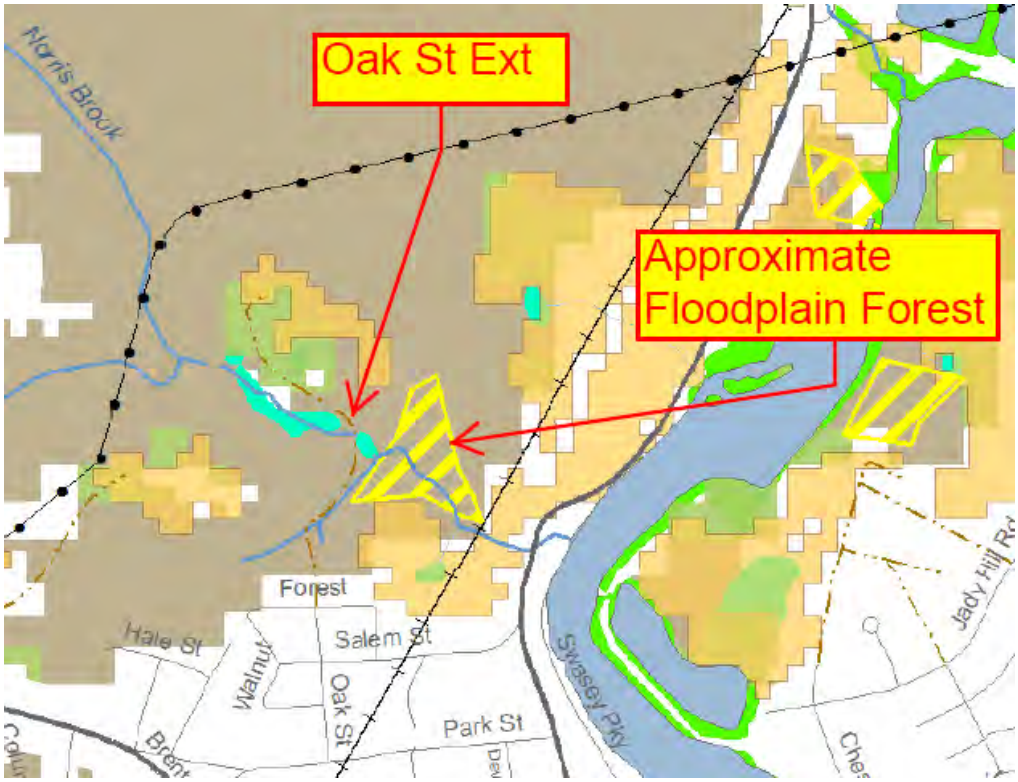
Wetlands located downstream (east) of Oak Street Extension are depicted in green shading on Exhibit 2 and generally involve palustrine forested and scrub-shrub vegetation cover types that are moderately dense to dense in most locations. There is a pond immediately downstream (east) of Oak Street Extension. The pond was created via a combination of excavation and impoundment. The excavation / dredge spoils were stockpiled to the south of the pond in what were likely wetlands. The impoundment is created by a concrete structure which has been partially breached by erosion at the south end. There is a large plume of sediment in the pond, attesting to the significant erosion and sediment transport taking place from Norris Brook, Watson Brook and the intermittent stream located upstream (west) of Oak Street Extension.

The wetlands associated with Norris Brook are confined by steep slopes in this study area, especially toward the east and railroad tracks. The slopes are generally forested with mature mixed hardwood trees with lesser amounts of coniferous softwoods.

Groundwater seeps are apparent and the most significant is located on the slope near the old jailhouse on Forest Street which drains to the unnamed perennial stream that is also tributary to Norris Brook. The slope along the east side of Oak Street Extension, between Oak Street Extension and the unnamed perennial stream, is generally comprised of fill materials and supports a large colony of Japanese knotweed, an invasive species. The channel which confines the unnamed perennial stream, or significant portions thereof, continues to develop in response to the filling of Oak Street Extension and excavation of the pond and deposition of the dredge spoils. The unnamed perennial stream is experiencing erosion in various locations with subsequent turbidity into Norris Brook just below the dam where the unnamed stream enters. Numerous bricks and brick pieces can be observed in the unnamed perennial stream channel near the juncture with Norris Brook. Refer to Images 1 and 2.

Norris Brook is moderately sinuous in this study area and drains to a 56-inch wide by 66-inch tall box culvert comprised by granite blocks/slabs at the downstream (east) property line and railroad tracks. The culvert is partially plugged by debris and may act as a minor constriction to flow based upon observations of obscure staining or siltation on the granite blocks. The dominant substrate in the study area involves poorly drained soils derived from marine sediments having silt and clay textures although significant sandy areas can be found. Braided channels can be observed and indicate occasional overbank flooding. Refer to Figure 2 below from the Natural Resources Inventory prepared for the town in 2011/2012 which indicates the approximate floodplain forest. Keeping the scale of Figure 2 in mind, the floodplain forest coincides reasonably well with the Norris Brook study area shaded in green on Exhibit 1.

FIGURE 2 Floodplain Forest (Exeter Natural Resource Inventory – Map 2)



Water quality of Norris Brook appears to be good. Turbidity is low overall but the unnamed perennial stream contributes sediment and the bottom of Norris Brook is unconsolidated and also likely contributes sediment to the stream flow during larger storms.

Eastern Intermittent Stream (Red) Study Area

The wetlands associated with the eastern intermittent stream are shaded in red on Exhibit 2. The stream has origins in largely forested areas located on private property north of the subject property as well as the Henderson-Swasey Town Forest. The watershed (19 Ac) that contributes to this wetland is insufficient to support perennial flow. The wetland has two distinct lobes. The western lobe extends off site and conveys intermittent stream flow. The eastern lobe stays on site and provides sheet flow and groundwater discharge that, due to the small subwatershed, never quite develops channel flow.

The dominant vegetation cover types include forest and scrub-shrub. The dominant substrate involves poorly drained hydric soils derived from marine sediment parent materials having silt and clay textures. Adjacent uplands are generally forested but the forest was previously altered and is regenerating however the area is generally well shaded from thermal impacts, with the possible exception of the shrubby area near the outlet which lacks a dense tree canopy. This study area is generally free from obvious dumping and other similar activities that are common to the upper reaches of the Norris Brook watershed on this property.

The intermittent stream passes through a constriction at its outlet from this study area, where it meets the green study area, owing to a combination of natural and man-made influences. The constriction coincides with an old access road which took advantage of a narrow reach on the wetland created by natural topography. The access road wetland crossing does not appear to have altered the topography substantially although there are a significant number of bricks in the area which would suggest a structure of some sort was installed here previously. Regardless, the stream flow is restricted here, resulting in a small area of shallow ponding immediately upstream and minor moderation of stream flows. However, just below the outlet the constriction results in an increase in flow velocity and turbulence downstream. The increased turbulence has resulted in some scouring and erosion as well as corresponding sedimentation of downstream wetlands in the green study area.

3.0 Wetland Functions and Values

Wetland functions are self-sustaining properties and physical attributes of wetlands that exist without regard to subjective human values. Wetland values are benefits derived from these functions and physical attributes. The functions assessed by the US Army Corps of Engineers Highway Methodology are identified below with a brief explanation of what each function and value considers.

3.1 Functions

Groundwater Recharge/Discharge – The potential for a wetland to recharge water to an aquifer or discharge groundwater to the surface.

Floodflow Alteration (Storage & Desynchronization) – The potential for a wetland to reduce flood damage by attenuating floodwaters through storage and desynchronization.

Fish/Shellfish Habitat – The potential for waterbodies associated with wetlands to provide suitable habitat for fish or shellfish.

Sediment/Toxicant/Pathogen Retention – The potential for the wetland to protect water quality by trapping sediments, toxicants and pathogens.

Nutrient Removal/Retention/Transformation – The effectiveness of wetlands to protect water quality and prevent adverse effects associated with excess nutrients in a watershed.

Production Export – The ability of the wetland to produce food for humans or other organisms.

Sediment/Shoreline Stabilization – The ability of a wetland to stabilize stream banks or shorelines against erosion.

Wildlife Habitat – The effectiveness of the wetland to provide suitable habitat for wildlife.

3.2 Values

Recreation – The ability of the wetland and any associated waterbodies to provide consumptive (e.g. hunting) and non-consumptive (e.g. hiking) recreational opportunities.

Educational/Scientific Value – The value of the wetland as an outdoor classroom.

Uniqueness/Heritage – The value relating to the effectiveness of the wetland to provide special values such as unique geologic features.

Visual/Aesthetics – The visual or aesthetic qualities of a wetland.

Threatened/Endangered Species Habitat – The effectiveness of the wetland to support threatened or endangered species.

4.0 Assumptions

The assessment of wetland functions and values can be an inherently subjective process. The Highway Methodology strives to eliminate potential bias through implementation of a qualitative and descriptive approach to functional assessment by requiring the evaluator to review a list of considerations and qualifiers for each function or value. The list of considerations/qualifiers is attached to this report as Appendix A.

The Highway Methodology lacks definitions or guidelines for certain abstruse terms associated with the considerations and qualifiers discussed, therefore, unless stated otherwise in this document, the evaluation has made the following assumptions and/or interpretations as identified below by function/value and consideration/qualifier. The considerations/qualifiers and associated assumptions are numbered to correspond to numbering identified in the Appendix A of the Highway Methodology Workbook Supplement.

<u>Groundwater Recharge Function</u>

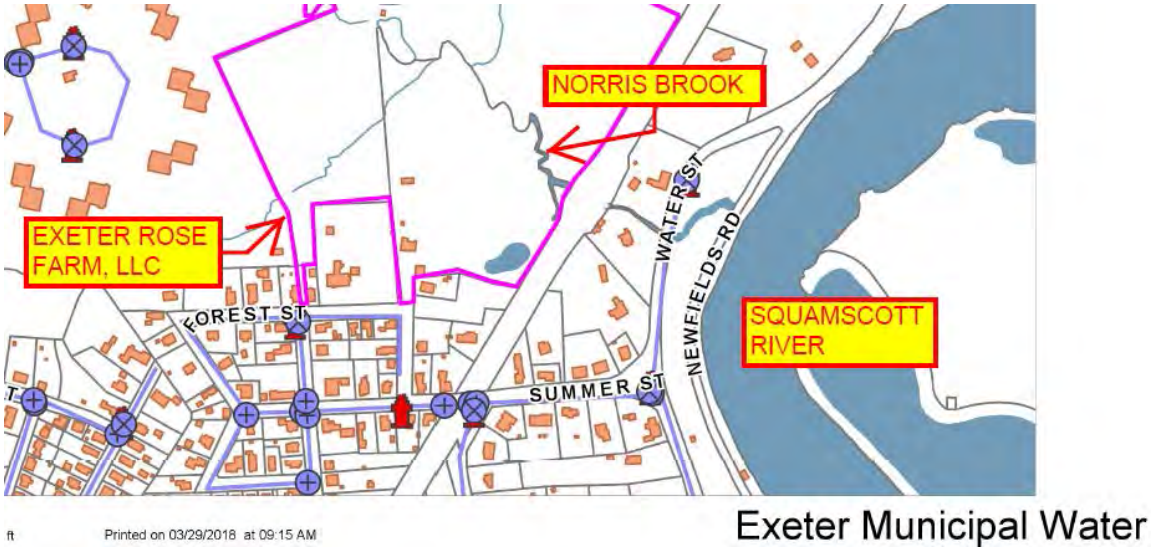
Consideration/Qualifiers 1 and 2

Public or private wells occur downstream of wetland. Potential exists for public or private wells downstream of the wetland.

Assumption

Downstream is interpreted to involve the entire watershed, even where it extends off-site, ending at the juncture with the Squamscott River for our purposes. The Highway Method does not distinguish between dug and drilled wells although their source water is frequently different. Predominant soils conditions in the area do not lend themselves to productive dug wells. The above notwithstanding, the area downstream of the subject site is served by municipal water. Refer to Figure 3 below from Exeter GIS depicting the extent of municipal water service. The bounds of Exeter Rose Farm are indicated in pink. This assumption also applies to Consideration/Qualifier 6 – Sediment/Toxicant/Pathogen Retention Function.

Figure 3 Exeter Municipal Water (Exeter GIS)



Consideration/Qualifiers 3 and 11

Wetland is underlain by stratified drift. Groundwater quality of the stratified drift aquifer within or downstream of the wetland meets drinking water standards.

Assumption

Water quality is based on visual observation only. No samples were collected or tested. This assumption notwithstanding, there are no stratified draft deposits within the area. The area is also not considered a drinking water focus area according to the Natural Resource Inventory. Refer to Figure 4 below.

Consideration/Qualifier 12

Quality of water associated with the wetland is high.

Assumption

Water quality is based on visual observation only. No samples were collected or tested. (Applies to Number 18 under Uniqueness/Heritage also.)

<u>Floodflow Alteration Function</u>

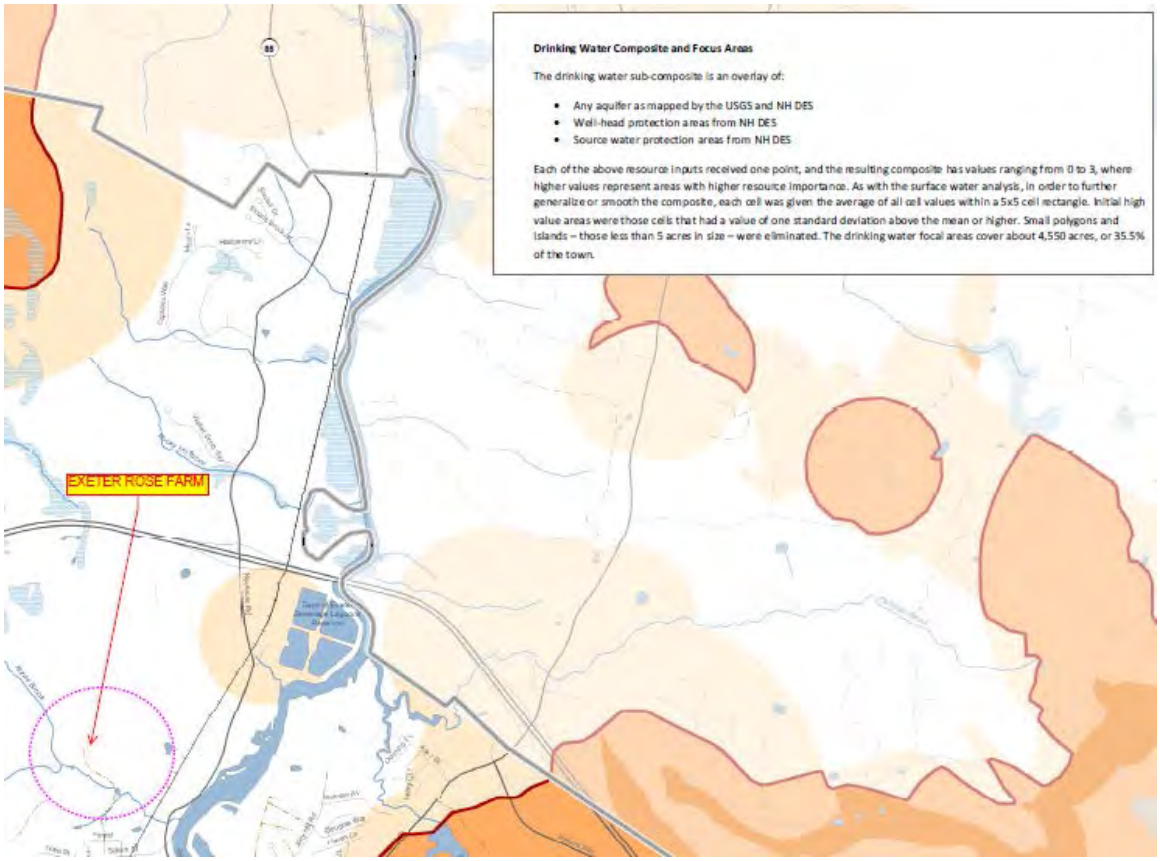
Consideration/Qualifier 1

Area of this wetland is large relative to its watershed.

Assumption

For the purposes of this evaluation, a wetland is considered to be large relative to its contributing watershed if it represents approximately 25 percent or more of the watershed area.

Figure 4 Drinking Water Focus Area (Exeter Natural Resource Inventory – Map 7)



Consideration/Qualifier 11

Valuable properties, structures or resources are located in or near the floodplain downstream from this wetland.

Assumption

Downstream is interpreted to involve the entire watershed, even where it extends off-site. Therefore, it is assumed that valuable properties generally lie in or near the floodplain downstream from the wetland at some point in the watershed. It is noteworthy that Norris Brook, which drains the subject property, travels a short distance before discharging to the Squamscott River, at which point any flood affects are neutralized.

<u>Fish/Shellfish Habitat Function</u>

Consideration/Qualifier 3

Size of this wetland is able to support large fish/shellfish populations.

Assumption

Evidence of any fish/shellfish population was interpreted to constitute a large population.

Sediment/Toxicant/Pathogen Retention Function

Consideration/Qualifier 5

Long duration water retention time is present in this wetland.

Assumption

Long duration water retention time is interpreted as any time period of sufficient duration that will result in settling of suspended solids constituted by sand and silt size soil particles; excluding clay size soil particles (for which settling times are often calculated in days or even weeks, not hours).

Consideration/Qualifier 8

The wetland is known to have existed for more than 50 years.

Assumption

Best professional judgment was used to estimate the relative age of wetlands. Multiple versions of county soil surveys, aerial photographs and/or topographic quadrangles were not consulted. Natural wetlands are generally assumed to be more than 50 years old.

Sediment/Shoreline Stabilization Function

Consideration/Qualifier 4

Potential sediment sources are present upstream.

Assumption

Upstream is interpreted to terminate at the property line.

Wildlife Habitat Function

Consideration/Qualifier 2

Water quality of the watercourse, pond, or lake associated with this wetland meets or exceeds Class A or B standards.

Assumption

Water quality is based on visual observation only and is assumed to meet Class A or B standards where no obvious signs of excessive turbidity or other pollution were observed.

Consideration/Qualifier 14

Wetland exhibits a high degree of plant species diversity.

Assumption

A high degree of plant species diversity was generally assumed to be present where a preliminary inventory of plants at a representative observation location within the subject area revealed a significant number of species relative to other sites in the subject area.

Consideration/Qualifier 15

Wetland exhibits a high degree of diversity in plant community structure (e.g., tree/shrub/vine/grasses/mosses)

Assumption

The presence of representatives of the tree, sapling, shrub, vine, herb/grass, & moss strata was interpreted to represent a high degree of diversity in plant community structure.

Recreation Value

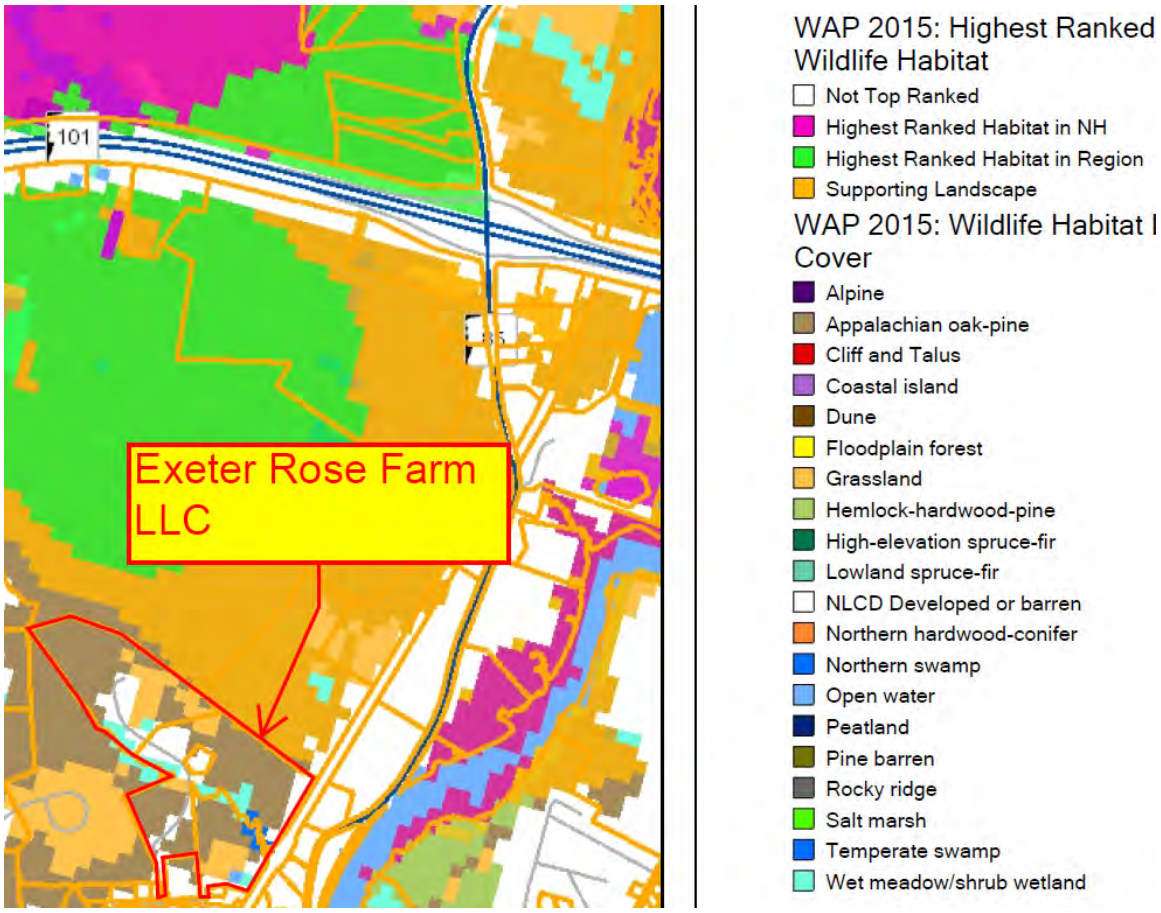
Consideration/Qualifier 5

Wetland is a valuable wildlife habitat.

Assumption

All wetlands provide habitat of one degree or another. It is our interpretation that valuable wildlife habitat refers to wetland wildlife habitat and furthermore that valuable wetland wildlife habitat possesses the physical attributes such that it can reasonably be anticipated to provide habitat for important wildlife species; those species which owe all or a significant part of their life cycle to wetlands. We note that the subject property is not identified on NH Fish and Game Wildlife Action Plan maps as providing Highest Ranked Habitat in NH or Highest Ranked Habitat in the Region. These habitat areas are shown in Figure 5 below in magenta and green respectively.

Figure 5 Wildlife Action Plan (NH Granit)



In addition to notations of physical attributes made during our numerous site visits dating back to 2015, more recently we placed game trail cameras in two strategic locations within wetlands adjacent to Norris Brook, one upstream of Oak Street Extension and one downstream, to inform our evaluation of wildlife utilization in these areas. These cameras possess a detection range of 60-feet and 70-foot nighttime infrared illumination range. We have monitored the devices periodically and attached images (numbers 3 and 4) of wildlife captured by these cameras to this document.

Consideration/Qualifier 7

High visual/aesthetic quality of this potential recreation site.

Assumption

The presence of three or more wetland classes was interpreted to represent high visual and aesthetic quality. (This is consistent with Educational/Scientific Value consideration/qualifier #3, Uniqueness/Heritage Value consideration/qualifier #4 and Visual/Aesthetics Value consideration/qualifier #1.)

Educational/Scientific Value

Consideration/Qualifier 9

Potential educational site is within safe walking distance or short drive to schools.

Assumption

"Safe walking distance" is interpreted to be less than ¼ mile from an educational facility. (Distance is not the sole measure of a safe walk however. "Short drive" is interpreted to be less than 3 miles form an educational facility. Note that Main Street School (grades K-2) is the closest school to the site at roughly 3,500 feet.) (This interpretation also applies to Recreation above and Uniqueness/Heritage.)

Consideration/Qualifier 13

No known safety hazards exist within the potential educational site.

Assumption

"Safety hazards" exist everywhere and no activity is without risk. Safety hazards in the outdoors generally involve physical trip and fall hazards like roots, rocks and holes as well as environmental hazards such as poison ivy and bee stings; and both types are known to occur commonly on virtually every natural site. However, for the purpose of this evaluation, known safety hazard is interpreted to involve unusual hazards that a reasonable person would not expect to commonly find in the forest such as explosives, shooting ranges or hazardous waste. (This assumption/interpretation also applies to #10 Uniqueness/Heritage.)

Uniqueness/Heritage Value

Consideration/Qualifier 19

Opportunities for wildlife observation are available.

Assumption

Most wildlife observations are chance encounters but it is assumed that "opportunities for wildlife observations" are available in one form or another at virtually any wetland or location if the observer is quiet and spends enough time. (Most wildlife studies and their conclusions about anticipated use by wildlife are based upon an evaluation of a particular locations physical attributes and any signs of wildlife and generally not on observations of actual wildlife.)

Endangered Species Habitat

Consideration/Qualifier 1/2

Wetland contains or is known to contain threatened or endangered species.

Assumption

The project has contacted the Natural Heritage Bureau (NHB) for information on rare, threatened or endangered species and a copy of NHB report is attached to this document. The project continues to work with the NHB and New Hampshire Fish and Game Department to respond to their concerns so we have not addressed this value individually for each study area.

5.0 List of Plants and Animals

5.1 List of Wildlife Observed

Birds

Pileated woodpecker	(*Dryocopus pileatus*) (audio confirmation)
Black-capped chickadee	(*Poecile atricapillus*)
American robin	(*Turdus migratorius*)
Blue jay	(*Cyanocitta cristata*)
Northern cardinal	(*Cardinalis cardinalis*) (audio confirmation)
American goldfinch	(*Carduelis tristis*)
Eastern blue bird	(*Sialia sialis*)
Dark-eyed junco	(*Junco hyemalis*)
Wild turkey	(*Melleagris gallopavo*) (tracks)
Red-tailed hawk (overhead)	(*Buteo jamaicensis*) (audio and visual confirmation)
Turkey vulture (overhead)	(*Cathartes aura*)
Mallard	(*Anas platyrhynchos*)

Mammals

Gray squirrel	(*Sciurus carolinensis*)
Raccoon	(*Procyon lotor*) (tracks)
White-tail deer	(*Odocoileus virginianus*) (tracks, scat, images)

Reptiles

Turtle	(No positive identification)

5.2 List of Common Vegetation (without regard to location)

The following is a list of vegetation which was commonly observed during numerous trips to the site to identify and delineate wetlands and during other site investigations, including the site visit to make observations for the wetland functional evaluation. This is not intended to represent an exhaustive list of vegetation which can be found at the site. The site is not known to possess habitat for threatened or endangered plant (or animal) species although no exhaustive surveys for sensitive species have been undertaken. Some plant species were identified by persistent remains.

Trees

White pine	*Pinus strobus*
Red Maple	*Acer rubrum*
American beech	*Fagus grandifolia*
Poplar	*Populus* sp.
American elm	*Ulmus americana*
White ash	*Fraxinus americana*
Gray birch	*Betula populifolia*
Black birch	*Betula lenta*
Yellow birch	*Betula alleghaniensis*
Black cherry	*Prunus serotina*
Eastern hemlock	*Tsuga canadensis*
Shagbark hickory	*Carya ovata*
Black locust	*Robinia pseudoacacia*
Box elder	*Acer negundo*
Northern Red oak	*Quercus rubra*
Black oak	*Quercus velutina*
White oak	*Quercus alba*
Hophornbeam	*Ostrya virginiana*

Some tree species can be found growing as shrubs or saplings as well.

Shrubs / Saplings

Apple	*Malus* sp.
Red-osier dogwood	*Cornus sericea*
Red-panicled dogwood	*Cornus racemosa*
Silky dogwood	*Cornus amomum*
Bunchberry	*Cornus canadensis*
Elderberry	*Sambucus canadensis*
Honeysuckle	*Lonicera* sp.*
Ironwood	*Carpinus caroliniana*
Speckled alder	*Alnus rugosa*
Staghorn sumac	*Rhus typhina*
Wild raisin	*Viburnum cassanoides*
Arrowwood	*Viburnum dentatum*
Autumn olive	*Elaeagnus umbellata**
Glossy buckthorn	*Frangula alnus**

Common buckthorn	*Rhamnus cathartica**
Meadowsweet	*Spiraea latifolia*
Willow	*Salix* sp.
Burning bush	*Euonymus alatus**
Winterberry	*Ilex verticillata*
Japanese barberry	*Berberis thunbergii**
Highbush blueberry	*Vaccinium corymbosum*
Witch hazel	*Hamamelis virginiana*
Multi-flora rose	*Rosa multi-flora**
Maleberry	*Lyonia ligustrina*

Herbaceous

Burdock	*Arctium minus*
Wood fern	*Dryopteris cristata*
Curley dock	*Rumex crispus*
Soft rush	*Juncus effusus*
Orchardgrass	*Dactylis glomerata*
Reed canary grass	*Phalaris arundinacea*
Tall fescue	*Festuca arundinacea*
Fine fescue	*Festuca* spp.
Ryegrass	*Lolium perenne*
Garlic mustard	*Alliaria petiolata**
Goldenrods	*Solidago* spp.
Queen Anne's lace	*Daucus carota*
Broad-leaved cat-tail	*Typha latifolia*
Sensitive fern	*Onoclea sensibilis*
Cinnamon fern	*Osmunda cinnamomea*
Royal fern	*Osmunda regalis*
Purple loosestrife	*Lythrum salicaria**
Jewelweed	*Impatiens capensis*
Japanese knotweed	*Polygonum cuspidatum**

Vines

Grape	*Vitis* sp.
Poison ivy	*Toxicodendron radicans* (Also observed growing as a ground cover.)
Virginia creeper	*Parthenocissus quinquefolia*

Aquatic

Duckweed	*Lemna minor*

*These species are thought to be invasive.

6.0 FUNCTIONS & VALUES BY STUDY AREA

The following section discusses and describes the functions and values of each wetland study area. The physical attributes and characteristics of each wetland study area are generally listed on the attached Wetland Function-Value Evaluation Forms or earlier in this report; therefore we have

limited the discussions below. An individual form has been completed for each wetland study area in order to appropriately manage data collection efforts and provide consistency. Similarly, it is difficult to precisely implement many of the considerations/qualifiers since most wetlands are part of larger contiguous wetland systems, only a portion of which may fall within the wetland study area. It is accepted however that conclusions about the effectiveness of a wetland study area to provide a particular function can change depending upon a host of factors which include the assessment area involved and the relative juxtaposition with other wetland resources. Conclusions regarding the functions and values associated with these wetland study areas are summarized below by area.

6.1 Western Intermittent Stream (Yellow) Study Area

Groundwater Recharge/Discharge

Due to the surrounding surficial geology and soils this area does provide limited recharge to groundwater but groundwater discharge is apparent although limited as compared to other areas on site. Groundwater Recharge/Discharge is a principal function of this wetland area.

Floodflow Alteration

At 18,554± square feet (SF) or 0.42 acres, the portion of this wetland that falls on the subject property represents 2% of its watershed. The watershed was calculated at approximately 19± acres as measured starting at the juncture of the intermittent stream and Norris Brook. Our investigations suggest that the inclusion of offsite wetlands will not substantially change this percentage. The stream also has significant topographic relief. Therefore, this wetland has little opportunity to alter flood flows due to landscape position. Floodflow alteration is not a principal function of this wetland area.

Fish and Shellfish Habitat (Freshwater)

Forest land is dominant in the watershed that feeds to wetland. There is a dearth of cover objects present and the stream is intermittent. The wetland is of insufficient size and depth so as not to freeze in the winter. Fish and Shellfish Habitat is not a principal function of this wetland study area.

Sediment/Toxicant/Pathogen Retention

The wetland study area is likely a net supplier of sediment. There are no known toxicant sources in the watershed above the wetland and the wetland lies upstream of known contaminants at this site. Fine grained soils are present but retention times are very short due to topographic relief. Sediment/Toxicant/Pathogen Retention is not a principal function of this wetland area.

Nutrient Removal

This wetland is small compared to its watershed. Deep water and seasonal open water habitat are absent but slowly draining fine textured soils are present. The dense vegetation community needed to utilize any nutrients is generally lacking and potential sources of excess nutrients are generally

absent in the small watershed therefore the opportunity for nutrient attenuation does not exist. Nutrient Removal is not a principal function of this wetland area.

Production (Nutrient) Export

The wetland area is sparsely vegetated and wildlife food sources are generally limited. Nutrient export is not a principal function of this wetland area.

Sediment/Shoreline Stabilization

Minor indications of erosion and siltation can be observed in this wetland. The small size, landscape position, physical attributes and lack of a permanent watercourse deny this area an opportunity to perform this function. Sediment/Shoreline Stabilization is not a principal function of this wetland area.

Wildlife Habitat

By our estimation, less than 40% of this wetland edge is bordered by upland wildlife habitat (brushland, woodland, active farmland, or idle land) at least 500 feet in width. Abandoned residences at the end of Oak Street Extension to the north and development / activity in the industrial park to the south are located within 500 feet. The gas main right-of-way (ROW) represents idle land and creates edge which invites both desirable and less-desirable edge species. Overland access for wildlife to other wetlands is present and the stream and adjacent upland could provide a corridor for more tolerant wildlife species. Wildlife food sources are limited. The wetland does not exhibit a high degree of interspersion of wetland classes and/or open water nor are inclusions of upland present within the wetland. The density of wetland vegetation and degree of diversity is low as is diversity of plant community structure. The wetland study area may provide some suitability for wildlife that is not utterly dependent upon wetlands or for species that can readily adapt to life in other wetlands however, it is not thought that wildlife habitat is a principal function of this wetland area.

Recreation

The wetland is not part of an official recreation area, park, or refuge although it extends into land that comprises the Henderson-Swasey Town Forest which is approximately 250 acres in size and prohibits hunting. Hunting opportunities are very limited, due to proximity to residential dwellings and other development, as are fishing opportunities, due to the intermittent flow. The potential for hiking in the classic sense is low but adjacent uplands provide a suitable connection to the town forest and an existing trail crosses the wetland study area. The wetland does not possess a high visual or aesthetic quality nor is it suitable for boating or canoeing. Most wetlands have some suitability for recreation and this wetland is no exception, but recreation is not a principal value of this wetland area.

Educational/Scientific Value

The potential educational site is relatively undisturbed (the culvert in the gas ROW near the property line notwithstanding) and does not contain a diversity of wetland classes. The wetland is

not considered important wildlife habitat and is not located in or adjacent to a nature preserve or wildlife management area. No signs of wildlife enhancement, such as bird houses and nesting boxes, exist on site. The wetland is not permanently flooded and the stream is intermittent. Potential off-road parking is currently available for a small bus and the wetland is a short drive but not a safe walk to or from local schools. All wetlands have some suitability for educational purposes and this wetland is no exception, however educational/scientific values are not principal values of this wetland area.

Uniqueness/Heritage

Urbanization to the south increases the importance of this wetland. The wetland lacks permanent open water, a high degree of interspersion of wetland classes and open water, three or more wetland classes and a suitable viewing area. The wetland is not known to be a site for research and is not a natural landmark or an exemplary natural community. The wetland is not an important archaeological site nor does it possess natural geologic or biological features which are locally rare. The wetland is not connected to a state or federally designated scenic river. Potential off-road parking is available for a smaller bus, accessibility is reasonably good and the wetland is a short drive (but not a safe walk) to or from schools. Uniqueness / Heritage is not a principal value of this wetland area.

Visual Quality/Aesthetics

The wetland is not dominated by flowering plants or plants that turn vibrant colors in the fall or other seasons. Wetland views are generally absent of trash, debris and other signs of disturbance although adjacent uplands are not. Residential development can be seen from the wetland, especially outside the growing season. The wetland is not considered to be important wildlife habitat. Activity associated with the industrial park can be heard from this wetland. Unpleasant odors were not detected at this wetland. Visual Quality/Aesthetics is not a principal value of this wetland area.

6.2 Norris Brook – Upstream (Blue) Study Area

Groundwater Recharge/Discharge

Due to the surficial geology and soils of surrounding upland areas this wetland provides significant groundwater discharge, which helps to provide base flow and sustain perennial flow for Norris Brook during periods of low precipitation. Groundwater Discharge is a principal function of this wetland area.

Floodflow Alteration

At approximately 82,830 SF or 1.9± acres in size, the portion of this wetland that falls within the confines of the site represents 0.42% of its watershed, which is almost 0.7± square miles (as measured starting where Norris Brook intersects Oak Street Extension. One square mile is roughly 640 acres.).

It should be noted that the figure above includes 668 SF of wetlands (associated with a groundwater seep) which are contiguous to other wetlands associated with Norris Brook but are separated by the property line. Inclusion of the off-site wetlands located between the seep and Norris Brook does not change our conclusions regarding floodflow alteration as this land is steep and does not play a significant role in this function.

The man-made retention pond at the west end of this study area is hydrologically connected to the wetland but it is our observation that the area primarily contains groundwater. Also, its location in the wetland system appears to provide very little additional floodflow alteration benefit.

Norris Brook is moderately sinuous in this area and the vegetation is relatively dense. The 36-inch diameter culvert at Oak Street Extension may be undersized and is also significantly plugged with debris, which acts as a constriction to flow. The Squamscott River is located downstream approximately 1,375 feet distant and there are a limited number of valuable properties downstream which argues against this wetland study area being considered important to flood alteration. It is our feeling however that meaningful alteration of floodflows is being provided (albeit artificially due to the plugged culvert) and thus represents a principal function of this wetland area.

Fish and Shellfish Habitat (Freshwater)

Forest is the dominant cover type in the watershed above this wetland and an abundance of cover objects are present. The culvert discussed above provides a significant impediment to aquatic organism passage due to the fact that the culvert is significantly plugged with debris. Also, the slope of the pipe presents an impediment to aquatic organism passage, especially at low flow. Fish and Shellfish Habitat is therefore not a principal function of this wetland area.

Sediment/Toxicant/Pathogen Retention

Norris brook is a potential source of sediment as is the aforementioned western intermittent stream as well as Watson Brook which is experiencing apparent channel and bank erosion. The wetland has demonstrable floodflow desynchronization characteristics and there are known toxicants in the watershed. We believe that Sediment/Toxicant/Pathogen Retention is a principal function of this wetland study area.

Nutrient Removal

The wetland is small relative to its contributory watershed and open water and deep water habitat are absent most of the time (with the possible exception of during large storm events due to the culvert being plugged). The wetland is saturated for most of the season and deep fine grained sediments are present. Dense woody vegetation is generally present and the opportunity, albeit limited, for nutrient attenuation exists. Nutrient Removal is a principal function of this wetland area.

Production (Nutrient) Export

The wetland area is densely vegetated but wildlife food sources are limited and commercial sources are absent. The fertile frond of sensitive fern can provide food for birds such as American woodcock (*Philohela minor*) and wild turkey (*Meleagris gallopavo*). Flowering plants exist,

including purple loosestrife, and can be used by nectar-gathering insects. Fish and shellfish are not found in this wetland. Most wetlands provide some suitability for nutrient production and export but Nutrient Export is not a principal function of this wetland area.

Sediment/Shoreline Stabilization

Minor indications of erosion and siltation can be observed in this wetland and the Norris Brook channel is a net sediment producer but the stream channel is largely at equilibrium with the exception of the juncture with Watson Brook which is actively eroding. However, landscape position, the lack of open water and lack of suitability for boating generally deny this area an opportunity to perform this function. Sediment/Shoreline Stabilization is not a principal function of this wetland area.

Wildlife Habitat

The wetland area has been altered by human/development activity and is fragmented by development (Oak Street Extension – however, since Oak Street Extension was used as the basis to define this study area fragmentation may not apply). The upland surrounding this wetland is partially developed therefore less than 40 percent of the wetland edge is bordered by upland wildlife habitat at least 500-feet in width. The north slope overlooking this wetland was filled with solid waste and other debris and much of the vegetation in the adjacent upland habitat closest to the wetland involves what has grown since the area was last altered. The wetland is directly contiguous with other wetland ecosystems via an intermittent watercourse. Overland access to other wetlands is present. The presence of speckled alder in certain locations is conducive to woodcock populations. Significant avian activity has been observed during site visits. The wetland does not exhibit a high degree of interspersion of wetland classes and/or open water nor are inclusions of upland within the wetland present. The density of wetland vegetation and degree of diversity is moderate to high. In our opinion the wetland study area is providing significant local habitat therefore Wildlife habitat is a principal function of this wetland area. It is worth noting that the New Hampshire Fish and Game – Wildlife Action Plan did not indicate this area as Highest Ranked Habitat in NH (depicted in magenta on Figure 5) or Highest Ranked Habitat in the Region (depicted in green on Figure 5). The area depicted in green in Figure 5 on page 15 appears to coincide with the Henderson-Swasey Town Forest.

Recreation

The wetland is not part of an official recreation area, park, or refuge. The wetland could be considered valuable wildlife habitat but hunting opportunities are very limited, if not prohibited, due to proximity to residential dwellings and other development, as are fishing opportunities due to the culvert discussed previously. The potential for hiking is unlikely but adjacent uplands (at the top-of-slope) may provide a more suitable potential connection to the town forest upon further investigation. The wetland does not possess a high visual or aesthetic quality nor is it suitable for kayaking, boating or canoeing. Norris Brook is perennial but the stream is less than 10–feet wide on average and the navigable distance is too short to be attractive. Most wetlands have some suitability for recreation and this wetland is no exception, but recreation is not a principal value of this wetland area.

Educational/Scientific Value

The wetland could be considered valuable wildlife habitat but is not located in a nature preserve or wildlife management area. Signs of wildlife habitat enhancement are absent. The potential educational site is disturbed by filling and solid waste disposal and does not contain a diversity of wetland classes. No signs of wildlife enhancement, such as bird houses and nest boxes, exist on site. The wetland is not permanently flooded but Norris Brook is perennial. Potential off-road parking is currently available for a small bus and the wetland is a short drive but not a safe walk to or from local schools. All wetlands have some suitability for educational purposes and this wetland is no exception, however educational/scientific values are not principal values of this wetland area.

Uniqueness/Heritage

The wetland lacks permanent open water, a high degree of interspersion of wetland classes and open water and three or more wetland classes. There is no apparent location within the wetland that represents a primary viewing location. The best overall view is from Oak Street Extension or the top-of-slope from adjacent uplands due to the steep slopes but these views are generally only available during the winter when the leaves are off the trees. These primary viewing locations will also include views of adjacent single-family or multifamily residential development. The wetland is not known to be a site for research and is not a natural landmark or an exemplary natural community. The wetland is not an important archaeological site nor does it possess natural geologic or biological features which are locally rare. The wetland is not connected to a state or federally designated scenic river. Potential off-road parking is available for a small bus. The wetland is a short drive (but not a safe walk) to or from schools but accessibility can be challenging due to steep slopes. Solid waste may pose a safety hazard. Urbanization to the south increases the importance of this wetland but Uniqueness/Heritage is not a principal value of this wetland area.

Visual Quality/Aesthetics

The wetland is not dominated by flowering plants but has a significant population of red maple trees and saplings that turn vibrant colors in the fall or other seasons. Residential or other development cannot be seen from the wetland due to adjacent steep slopes but can be viewed while gaining access. The wetland could be considered valuable wildlife habitat. The wetland lacks a good primary viewing location and multiple wetland classes are absent. While, unpleasant odors were not detected at this wetland, Visual Quality/Aesthetics is not a principal value of this wetland area.

6.3 Norris Brook – Downstream (Green) Study Area

Groundwater Recharge/Discharge

Due to the surficial geology and soils of surrounding upland areas, which sometimes involve a sandy cap over silt and clay sediments, this wetland provides significant groundwater discharge, which helps to provide base flow and sustain perennial flow for Norris Brook and the unnamed perennial stream during periods of low precipitation. Groundwater Discharge is a principal function of this wetland area.

Floodflow Alteration

At approximately 145,448 SF or 3.34± acres in size, (including the pond – which is approximately 0.2± acres) this wetland represents 0.5% of its watershed, which is 1.06 square miles (as measured starting at the intersection of Norris Brook and the railroad tracks and includes the watershed for the unnamed intermittent stream which was measured at 0.16 square miles). Norris Brook is moderately sinuous in this area and vegetation is relatively dense. The granite block box culvert at the railroad tracks may be slightly undersized for larger storms, which acts as a minor constriction to flow. The Squamscott River is located downstream approximately 600 feet distant (from where this study area meets the railroad tracks and property line) and there are a limited number of valuable properties downstream, which argues against this wetland study area being considered important to flood alteration. It is our feeling however that, when considered with the pond and concrete structure, and due to other the characteristics of the larger drainage basin, meaningful alteration of floodflows is being provided. The floodflow alteration may not be as significant as the desynchronization provided by the segment of Norris Brook upstream (west) of Oak Street Extension but still represents a principal function of this wetland area.

Fish and Shellfish Habitat (Freshwater)

Forest is the dominant cover type in the watershed above this wetland and an abundance of cover objects are present. The granite block box culvert beneath the railroad provides better than average aquatic organism passage during higher flows but the bottom of the culvert is plugged with debris, up against which sediment has accumulated to a depth of approximately 18 inches. We can confirm that we have never observed Norris Brook not to be flowing but we have also never observed fish in Norris Brook during numerous visits to the site. Fish and Shellfish Habitat is therefore not a principal function of this wetland area.

Sediment/Toxicant/Pathogen Retention

Norris brook is a potential source of sediment as is the unnamed perennial stream described earlier which is experiencing apparent channel and bank erosion. The wetland appears to have demonstrable floodflow desynchronization characteristics and there are known toxicants in the watershed. We therefore believe that Sediment/Toxicant/Pathogen Retention is a principal function of this wetland study area.

Nutrient Removal

The wetland is small relative to its contributory watershed and open water and/or deep water habitat are absent most of the time (with the possible exception of during large storm events). The wetland is saturated for most of the season and deep fine grained sediments are present. Dense woody vegetation is generally present and limited opportunity for nutrient attenuation exists. Nutrient Removal is a principal function of this wetland area.

Production Export

The wetland area is densely vegetated but wildlife food sources are limited and commercial sources are absent. Flowering plants exist, including purple loosestrife, and can be used by nectar-gathering insects. Fish and shellfish are not found in this wetland. Most wetlands provide some

suitability for nutrient production and export but Nutrient Export is not a principal function of this wetland area.

Sediment/Shoreline Stabilization

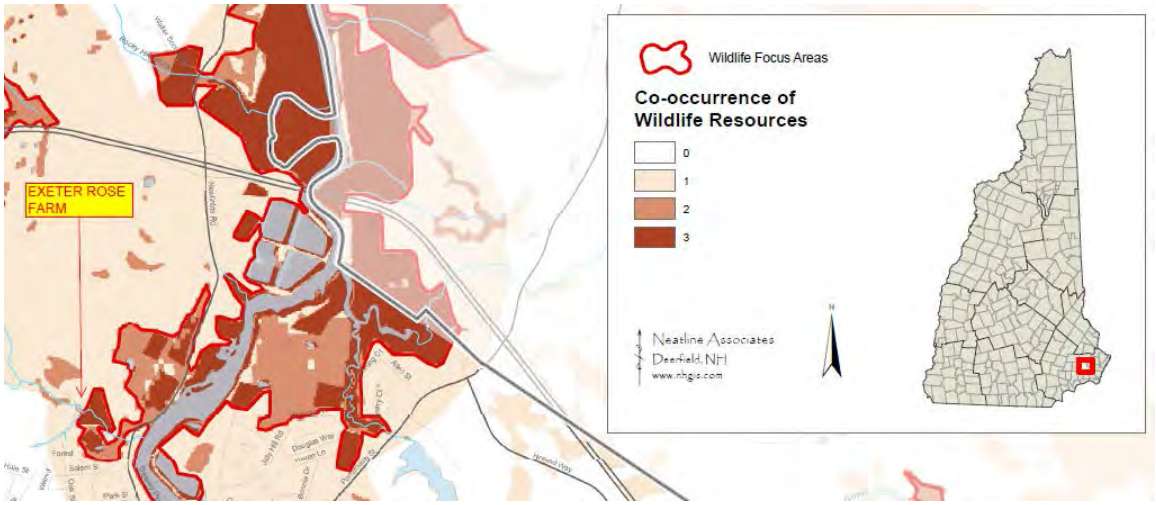
Indications of erosion and siltation can be observed in this wetland and the Norris Brook channel is a net sediment producer but the stream channel is largely at equilibrium. The unnamed perennial stream is actually less stable than Norris Brook and is also a net supplier of sediment. However, landscape position, the lack of open water and fetch as well as lack of suitability for boating generally signify that this wetland area has no opportunity to provide this function. Sediment / Shoreline Stabilization is therefore not a principal function of this wetland area.

Wildlife Habitat

The wetland area has been altered by human/development activity and the larger wetland system has been fragmented by development (the railroad and Oak Street Extension – Oak Street Extension was used as the basis to define this study area so fragmentation may not apply). The upland surrounding this wetland is partially developed but more than 40 percent of the wetland edge is bordered by upland wildlife habitat at least 500-feet in width by our estimation. The 500-foot buffer is largely forested on the north side and is comprised of forest and grassland on the south side. The wetland is directly contiguous with other wetland ecosystems via an intermittent watercourse (the eastern intermittent stream study area). Overland access to other wetlands is present. Significant avian activity has been observed during site visits. The wetland exhibits a higher degree of interspersion of wetland classes than the Norris Brook – Upstream (Blue) Study Area.

With the exception of the pond impounded by the concrete structure, open water is generally absent and there are no inclusions of upland present within the wetland study area. The pond provides habitat for wading and aquatic birds species. The density of wetland vegetation and degree of diversity is moderate to high. Wildlife signs such as tracks and scat as well as cameras that were installed indicate species such as deer and turkey are utilizing the area. Wildlife and turkey are species that have a higher than average tolerance for human disturbance and activity. The physical attributes of the wetland and wildlife sign observed generally indicate that Wildlife Habitat is a principal function of this wetland area and provides valuable local habitat. It is noteworthy that the New Hampshire Fish and Game – Wildlife Action Plan (WAP) did not indicate this area or any part of the subject property as Highest Ranked Habitat in NH (depicted in magenta on Figure 5) or Highest Ranked Habitat in the Region (depicted in green on Figure 5). Conversely, the Wildlife Composite Map found in the Natural Resource Inventory identifies this wetland study area as a wildlife focus area having a co-occurrence of three major characteristics that include highest ranked habitat in NH from the WAP and rare species/communities from the Natural Heritage Bureau among numerous other criteria. Refer to Figure 5 on page 15 and Figure 6 below.

Figure 6 Wildlife Composite Map (Exeter Natural Resource Inventory – Map 8)



Recreation

The wetland is not part of an official recreation area, park, or refuge. The wetland appears to have significant avian activity and therefore presents some birdwatching opportunities, especially for those willing to venture off the beaten path. The wetland could be considered valuable wildlife habitat but hunting opportunities are very limited, if not prohibited, due to proximity to residential dwellings and other development, as are fishing opportunities. The potential for hiking is unlikely but adjacent uplands (at the top-of-slope) may provide a suitable connection to the town forest. The wetland does not possess a high visual or aesthetic quality nor is it suitable for kayaking, boating or canoeing. Norris Brook is perennial but the stream is less than 10–feet wide and the navigable distance is too short to be attractive to canoers or kayakers. Most wetlands have some suitability for recreation and this wetland is no exception, but overall recreation is not a principal value of this wetland area.

Educational/Scientific Value

The wetland could be considered valuable wildlife habitat but is not located in a nature preserve or wildlife management area. Signs of wildlife habitat enhancement are absent. The potential educational site is relatively undisturbed but does contain some diversity of wetland classes. No signs of wildlife enhancement, such as bird houses and nest boxes, exist on site. The wetland is not permanently flooded (with the exception of the pond) but Norris Brook is perennial. Potential off-road parking is currently available for a small bus and the wetland is a short drive but not a safe walk to or from local schools. Access could be challenging due to the steep slopes adjacent to the wetland study area. All wetlands have some suitability for educational purposes and this wetland is no exception, however Educational / Scientific values are not principal values of this wetland area.

Uniqueness/Heritage

The wetland lacks permanent open water, a high degree of interspersion of wetland classes or open water and three or more wetland classes. The wetland is not known to be a site for research and is not a natural landmark or an exemplary natural community. The wetland is not known to be an important archaeological site nor does it possess biological features which are locally rare. The wetland includes a productive spring referred to by some as the Jailhouse Spring which is visited frequently. Urbanization to the south increases the importance of this wetland. The site also has history as a brickyard. The wetland is not connected to a state or federally designated scenic river. Potential off-road parking is available, but not for a full size bus. Accessibility can be challenging due to the steep slopes and the wetland is a short drive to or from schools but walking to the site for school aged children is not realistic. Uniqueness/Heritage could be considered a principal value of this wetland study area.

Visual Quality/Aesthetics

The wetland is not dominated by flowering plants but has a meaningful population of red maple trees and saplings that likely turn vibrant colors in the fall. Residential or other development cannot be seen from the wetland (except when the leaves are off) due to adjacent steep slopes but can be viewed while gaining access. The wetland could be considered valuable wildlife habitat. With the possible exception of the granite block box culvert at the railroad, the wetland lacks a good primary viewing location and multiple wetland classes are absent. The noise level at this wetland study area can be intermittently high or distracting due to passing trains. Unpleasant odors were not detected at this wetland, but Visual Quality/Aesthetics is not a principal value of this wetland area.

6.4 Eastern Intermittent Stream (Red) Study Area

Groundwater Recharge/Discharge

The drainage basin that contributes to this wetland has similar surficial geology and soils as other areas in this evaluation and provides limited groundwater discharge as compared to wetlands associated with Norris Brook and the unnamed perennial stream. Groundwater Recharge / Discharge is a principal function of this wetland area however.

Floodflow Alteration

At 38,448± SF or 0.88 acres, the portion of this wetland that falls on the subject property represents <1% of its watershed. The watershed was calculated at approximately 122± acres as measured beginning at the juncture of the intermittent stream and Norris Brook. Our investigations suggest that the inclusion of offsite wetlands will not result in the wetland constituting a large percentage of the watershed. The stream associated with these wetlands is intermittent and also has significant topographic relief. However, the topography of the basin and other attributes suggest that this wetland can play a minor role in floodflow alteration in this subwatershed. Floodflow Alteration is a principal function of this wetland area.

Fish and Shellfish Habitat (Freshwater)

Forest land is dominant in the contributory watershed. The stream channel is poorly defined in most locations. Cover objects are generally absent and the stream is intermittent. The wetland is of insufficient size and depth and does not possess the physical attributes to prevent it from freezing or icing over in the winter. Fish and Shellfish Habitat is not a principal function of this wetland study area.

Sediment/Toxicant/Pathogen Retention

The wetland study area is likely a net supplier of sediment. There are no known toxicant sources in the watershed above the wetland. Fine grained soils are present but retention times are very short due to topographic relief and basin topography. Sediment/Toxicant/Pathogen Retention is not a principal function of this wetland area.

Nutrient Removal

This wetland is small compared to its watershed. Deep water and seasonal open water habitat are absent but slowly draining fine textured soils are present. A locally dense vegetation community exists and potential sources of excess nutrients are generally absent in the watershed therefore the opportunity for nutrient attenuation does not exist. Nutrient Removal is not a principal function of this wetland area.

Production (Nutrient) Export

The wetland area is sporadically vegetated and wildlife food sources are generally limited. Nutrient Export is not a principal function of this wetland area.

Sediment/Shoreline Stabilization

Minor indications of erosion and siltation can be observed in this wetland. The small size, landscape position, physical attributes and lack of open water or a permanent watercourse deny this area an opportunity to perform this function. Sediment/Shoreline Stabilization is not a principal function of this wetland area.

Wildlife Habitat

By our estimation, less than 40% of this wetland edge is bordered by upland wildlife habitat (brushland, woodland, active farmland, or idle land) at least 500 feet in width although 300 feet is plausible on site. Residences along Oak Street Extension and the railroad are located within 500 feet. Overland access for wildlife to other wetlands is present and the stream and adjacent upland could provide a corridor for wildlife. Wildlife food sources are limited. The wetland does not exhibit a high degree of interspersion of wetland classes and/or open water nor are inclusions of upland present within the wetland. The density of wetland vegetation is high in places and degree of diversity is low as is diversity of plant community structure. The wetland study area may provide some suitability for common wildlife and those species which are not critically dependent upon wetlands however it is our opinion that Wildlife Habitat is not a principal function of this wetland area.

Recreation

The wetland is not part of an official recreation area, park, or refuge. Hunting opportunities are very limited, due to proximity to residential dwellings and other development, as well as the railroad. Fishing opportunities are absent due to the intermittent flow. The potential for hiking in the adjacent uplands exists and one walking/biking trail that crosses the wetland was observed. The wetland does not possess a high visual or aesthetic quality nor is it suitable for boating, canoeing or kayaking. Most wetlands have some suitability for recreation and this wetland is no exception, but Recreation is not a principal value of this wetland area.

Educational/Scientific Value

The potential educational site is relatively undisturbed (the nearby railroad, bike path and old access road notwithstanding) but does not contain a diversity of wetland classes. The wetland is not considered important wildlife habitat and is not located in or adjacent to a nature preserve or wildlife management area, although the town forest is not far away. No signs of wildlife enhancement, such as bird houses and nesting boxes, exist on site. The wetland is not permanently flooded and the stream is intermittent. Potential off-road parking is currently available for a small bus approximately 1,000 feet away on Oak Street Extension but there is no path between the apparent parking location and the wetland. A foot path along the railroad tracks exists but is not considered safe and may not be legal. The wetland is a short drive but not a safe walk to or from local schools. Educational/Scientific Values are not principal values of this wetland area.

Uniqueness/Heritage

Urbanization to the south increases the importance of this wetland. The wetland lacks permanent open water, a high degree of interspersion of wetland classes and open water, three or more wetland classes and a suitable viewing area. The wetland is not known to be a site for research and is not a natural landmark or an exemplary natural community. The wetland is not an important archaeological site nor does it possess natural geologic or biological features which are locally rare. The wetland is not connected to a state or federally designated scenic river. Potential off-road parking is available for a smaller bus, accessibility is questionable and the wetland is a short drive (but not a safe walk) to or from schools. Uniqueness / Heritage is not a principal value of this wetland area.

Visual Quality/Aesthetics

The wetland is not dominated by flowering plants or plants that turn vibrant colors in the fall or other seasons. Wetland views are generally absent of trash, debris and other signs of disturbance. Limited residential development along Oak Street Extension can be seen from the wetland, especially outside the growing season. The wetland is not considered to be important wildlife habitat. The railroad can easily be heard from this wetland. Unpleasant odors were not detected at this wetland. Visual Quality/Aesthetics is not a principal value of this wetland area.

7.0 SUMMARY AND DISCUSSION

The Highway Methodology identifies 13 primary functions and values which can potentially be ascribed to wetlands. The presence of these functions and values provide benefits for society and the environment.

Our findings resulted in a conclusion that the **Western Intermittent Stream (Yellow) Study Area** possesses one (1) principal function – Groundwater Discharge. The observations made of wetland attributes resulted in a conclusion that the **Norris Brook – Upstream (Blue) Study Area** possesses or provides five (5) principal functions: Groundwater Discharge, Floodflow Alteration, Sediment / Toxicant Retention, Nutrient Removal and Wildlife Habitat. The findings resulted in a conclusion that **Norris Brook – Downstream (Green) Study Area** possesses or provides six (6) principal functions: Groundwater Discharge, Floodflow Alteration, Sediment / Toxicant Retention, Nutrient Removal, Wildlife Habitat and Uniqueness/Heritage. The **Eastern Intermittent Stream (Red) Study Area** findings indicate a total of two (2) principal functions: Groundwater Discharge and Floodflow Alteration. Refer to Table 1 below.

TABLE 1 TALLY OF PRINCIPAL FUNCTIONS / VALUES BY STUDY AREA

	STUDY AREA			
Function/Value	**Yellow**	**Red**	**Green**	**Blue**
Groundwater	**Y**	**Y**	**Y**	**Y**
Floodflow Alteration	N	**Y**	**Y**	**Y**
Fish / Shellfish	N	N	N	N
Sediment/Toxicant	N	N	**Y**	**Y**
Nutrient Removal	N	N	**Y**	**Y**
Production Export	N	N	N	N
Shoreline Stabilization	N	N	N	N
Wildlife Habitat	N	N	**Y**	**Y**
Recreation	N	N	N	N
Educational Value	N	N	N	N
Uniqueness / Heritage	N	N	**Y**	N
Visual Quality	N	N	N	N
TOTAL	**1**	**2**	**6**	**5**

The Norris Brook – Downstream (Green) Study Area has the largest number of principal functions and generally speaking represents the most valuable wetland on this site although the Norris Brook – Upstream (Blue) Study area is very similar in function and value. This is not surprising since they have many similar physical attributes and are essentially the same wetland which was bisected by the construction of Oak Street Extension. Assessing overall wetland value simply based upon the number of principal functions provided may not be appropriate however.

We note that all four wetland study areas support groundwater discharge as a principal function. Groundwater discharge is a function of the dominant upland soil conditions in the area which generally involve sandy textures of varying thickness over deep, slowly permeable silt and clay textures. This corroborates our investigations which confirm that there are no stratified drift deposits and thus no suitable aquifers in the area and therefore groundwater recharge is not a principal function of any of the wetlands on this site. These findings demonstrate however that meaningful infiltration of precipitation is taking place in uplands adjacent to site wetlands and this infiltration is contributing to base flow in Norris Brook and other streams.

We have indicated floodflow alteration as a principal function of the Norris Brook – Upstream (Blue) Study Area on the attached data form. The presence of floodflow alteration function within a wetland system and the indication that it is a principal function implies that the wetland system has the ability to prevent property damage by storing flood waters and desynchronizing peak flows associated with a storm or flood event. It should be noted that a significant part of the function in this case is a result of the construction of Oak Street Extension as well as the partially plugged culvert, both of which are providing a constriction of stream flow. If the culvert is cleaned or replaced and enlarged this floodflow alteration function will likely be reduced. This is unlikely to have a significant impact on downstream properties however, of which there are few.

Due to the topography in the general area of this wetland, the plugged culvert and any associated flooding has little effect on surrounding upstream properties. Oak Street itself actually represents the lowest elevation in the area at this point in the subwatershed and is at greatest risk for damage should the pipe become completely plugged or plugged sufficiently that a particular storm causes water to back up and overtop the road. If this were to happen the resulting erosion and sedimentation could have negative ramifications for downstream wetlands. Also, were Oak Street Extension to overtop and fail, downstream properties could be affected although the granite block box culvert at the railroad would significantly mitigate the effects. A cleaning of the pipe and installation of a trash rack of some sort may be warranted. Any trash rack should not be installed at the mouth of the pipe however. A trash rack is not a panacea however as it also requires maintenance.

The conclusions above are not to suggest that the various wetland study areas do not perform or provide any function or value or that they cannot provide or perform any function that is not identified as a principal function; however the data and our observations and subsequent conclusions confirm that the wetlands do not perform or provide those functions at an elevated or significant level. For those interpreting this report, caution needs to be applied when deriving conclusions about impact assessment when using the findings within. Additionally, do not be easily tempted to rank or compare the wetlands described within this report against one another and certainly against other off-site wetlands. Ranking wetlands numerically or rating wetlands low, medium or high is tempting but is inappropriate and implies a level of accuracy or understanding of the wetlands and functional evaluation methodologies which may not exist.

EXETER ROSE FARM, LLC

FUNCTIONAL WETLAND EVALUATION

PHOTOGRAPHS & DESCRIPTIONS

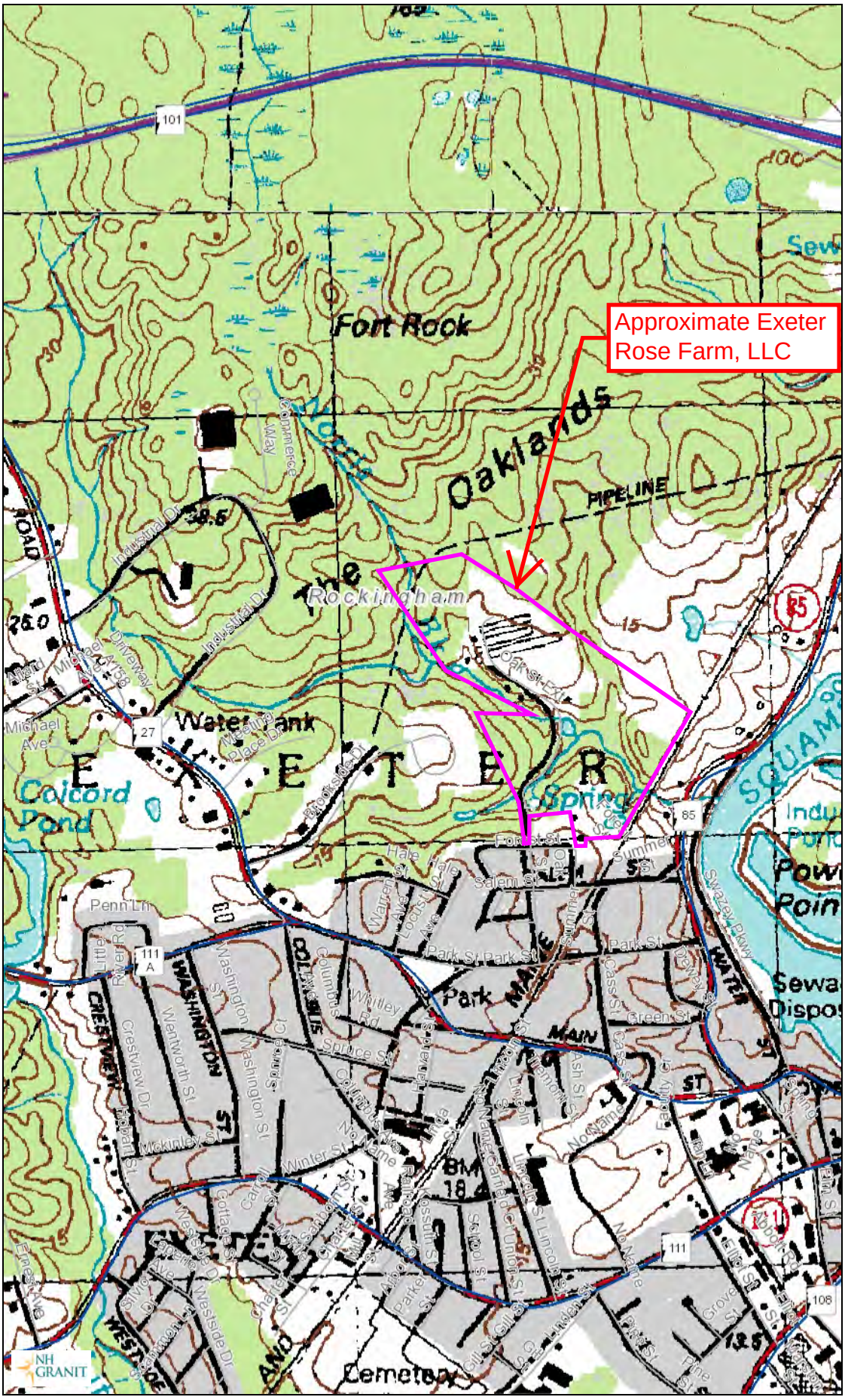
Image 1 – Unnamed perennial stream. Note bricks and turbidity. *(©Jacobs2018)*

Image 2 – Juncture of unnamed perennial stream and Norris Brook (background). Note plume of slightly turbid water in foreground and on right side of Norris Brook. *(©Jacobs2018)*

Image 3 – Wildlife camera image in the Green Wetland Study Area looking upstream (west) along Norris Brook. Note existing home in on left in center background and deer on right in foreground *(©Jacobs2018)*

Image 4 – Wildlife camera image in the Green Wetland Study Area looking upstream (west) along Norris Brook. Note existing home on left in center background and deer on right in foreground *(©Jacobs2018)*

Map by NH GRANIT



Legend

- State
- County
- City/Town
- Interstates
- Turnpikes
- US Routes
- State Routes
- Local Roads

EXHIBIT 1

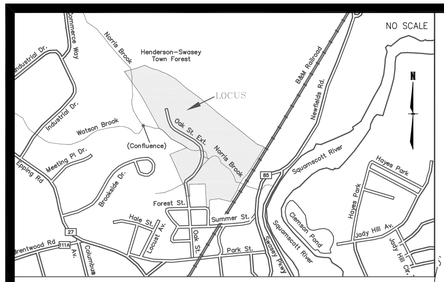
Map Scale

1: 12,988

Map Generated: 8/18/2016

Notes

Rose Farm
Oak Street Extension
Exeter, NH



NOTES:

1. THE SUBJECT PARCELS ARE SHOWN ON THE TOWN OF EXETER ASSESSOR'S MAP 54 AS LOTS 5, 6 & 7 AND MAP 63 LOT 205.

2. OWNERS OF RECORD/APPLICANT:

MAP 54 LOT 5
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2102
(603) 425-8598

MAP 54 LOT 6
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2102
(603) 425-8598

MAP 54 LOT 7
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2104
(603) 425-8598

MAP 63 LOT 205
BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS
1 FOREST STREET
EXETER, NH 03833
RCRD BK.#4574 PG.#2843
(603) 502-7175

3. TOTAL AREA:
2,176,025± S.F.
(49.9547± ACRES)

4. THE SUBJECT PARCELS ARE LOCATED IN THE R-1 LOW DENSITY SINGLE FAMILY, R-2 SINGLE FAMILY, AND R-4 MULTI-FAMILY ZONING DISTRICTS AND PARTIALLY LOCATED IN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT AND THE WETLANDS CONSERVATION AND FLOOD HAZARD OVERLAY DISTRICTS.

5. DENSITY AND DIMENSIONAL REGULATIONS:

	R-1	R-2	R-4 (DETACHED SINGLE FAMILY)
MINIMUM LOT AREA:			
(NO MUNICIPAL WATER & SEWER)	2 ACRES	1 ACRES	NA
(MUNICIPAL WATER & SEWER)	40,000 S.F.	15,000 S.F.	12,000 S.F.
(DWELLING UNIT)	40,000 S.F.	15,000 S.F.	12,000 S.F.
MINIMUM LOT WIDTH:	150'	100'	100'
MINIMUM LOT DEPTH:	150'	100'	100'
MAXIMUM HEIGHT:	35'/3 STORIES	35'/3 STORIES	35'/3 STORIES
MINIMUM YARD SETBACKS:			
FRONT YARD:	25'	25'	25'
SIDE YARD:	15'/30'	15'/30'	15'/30'
REAR YARD:	25'	25'	25'
MAXIMUM BUILDING COVERAGE:	15%*	25%*	25%*
MINIMUM OPEN SPACE:	80%**/70%	60%**/40%	30%

*FOR AREAS WITHIN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT THE MAXIMUM LOT COVERAGE IS 10% (SEE SECTION 9.3.4.B)
**FOR LOTS USING SEPTIC SYSTEMS
PER THE TOWN OF EXETER, N.H. ZONING ORDINANCE, SECTION 4.3.

6. THE HORIZONTAL DATUM IS REFERENCED TO NORTH AMERICAN DATUM OF 1983 [NAD 83 (2011)] PER STATIC GPS OBSERVATIONS. THE VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), GEOID 12A PER STATIC GPS OBSERVATIONS. THE CONTOUR INTERVAL IS 2 FEET.
7. THE SUBJECT PARCELS ARE PARTIALLY LOCATED IN SPECIAL FLOOD HAZARD AREA (SFHA) ZONE AE (EL.8) & ZONE X AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP NUMBER 33015C0402E WITH AN EFFECTIVE DATE OF MAY 17, 2005.
8. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
9. THE PURPOSE OF THIS PLAN IS TO SHOW THE CURRENT EXISTING FEATURES AND TOPOGRAPHY OF TAX MAP 54 LOTS 5, 6 & 7, AND TAX MAP 63 LOT 205. SEE SHEET C-02 FOR CULVERT TABLE AND PLAN REFERENCES, SHEETS C-05 TO C-09 FOR BOUNDARY BEARINGS AND DISTANCES, SHEET C-03 FOR SITE-SPECIFIC SOILS MAP, SHEET C-10 FOR WETLAND AREAS AND SHEET C-11 FOR OFFSITE UTILITY INFORMATION.
10. FIELD SURVEY COMPLETED BY TODD C. EMERSON AND NICK J. MORTON IN JANUARY 2016 AND JULY 2017 USING A TOPCON DS103 AND TOPCON TESLA DATA COLLECTOR, A TOPCON MG-A5 BACKPACK GPS UNIT AND A TOPCON HYPER SR STATIC GPS UNIT. AERIAL TOPOGRAPHY WAS PROVIDED BY WSP, PARSONS BRINKERHOFF OF CHARLTON, MA IN MAY 2016.
11. THE BOUNDARY RUNS ALONG THE BROOK FROM POINT "A" TO POINT "B". THE TOTAL AREA WAS DETERMINED USING THE CENTERLINE OF THE BROOK AS LOCATED BY MSC IN JANUARY 2016.

12. UTILITY LINES SHOWN HEREON ARE A COMPILATION OF FIELD LOCATIONS, RECORD PLANS AND DIGITIZED PER THE TOWN OF EXETER GIS WEB SITE AND ARE APPROXIMATE ONLY. CONTACT DIGSAFE @ 1-888-DIG-SAFE AND THE TOWN OF EXETER DEPARTMENT OF PUBLIC WORKS TO VERIFY UTILITIES.

13. MANMADE AND NATURAL JURISDICTIONAL WETLAND BOUNDARIES WERE DELINEATED BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, AND JON BALANOFF IN DECEMBER 2015 ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS – WETLANDS DELINEATION MANUAL; THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES – WETLANDS BUREAU – ENV WT 100-900 AND THE TOWN OF EXETER ZONING. PREDOMINANT HYDRIC SOILS WERE IDENTIFIED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 3, APRIL 2004 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 7, 2010. THE INDICATOR STATUS OF HYDROPHYTIC VEGETATION WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS – NORTHCENTRAL AND NORTHEAST 2014 REGIONAL WETLAND PLANT LIST. COPIES OF SITE PLANS DEPICTING THE WETLAND DELINEATION WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS LOCATION.

14. WETLANDS CONTAINING POORLY DRAINED SOILS ARE SUBJECT TO A 40' NO CUT/NO DISTURBANCE SETBACK. WETLANDS CONTAINING VERY POORLY DRAINED (VPD) SOILS ARE SUBJECT TO A 50' NO CUT/NO DISTURBANCE SETBACK. IN AN EFFORT TO SIMPLIFY SETBACKS ON THIS PLAN, A 50' NO CUT/NO DISTURBANCE SETBACK HAS BEEN APPLIED TO ALL WETLANDS REGARDLESS OF SOIL TYPE, EXCEPT FOR WETLAND AREA M (SEE SHEET C10), A WETLAND CONTAINING POORLY DRAINED SOILS. THE APPLICATION OF THE 50' NO CUT/NO DISTURBANCE SETBACK ON THIS PLAN SHOULD NOT BE CONSIDERED A DETERMINATION OF VERY POORLY DRAINED (VPD) VERSUS POORLY DRAINED SOILS.

15. THE FORMER GREENHOUSE AREA AND THE FORMER BOILER & PACKING BUILDINGS AREA ARE THE SUBJECT OF NHDES SITE #201203003. SEE REMEDIAL ACTION PLAN (RAP) PREPARED BY STONEHILL ENVIRONMENTAL, INC. (CURRENTLY UNDER REVIEW BY NHDES) FOR DETAILS.
CONCEPTUAL REMEDIATION PLAN:
    A: FORMER GREENHOUSE AREA – SHALLOW SOIL CONTAINING LEAD CONCENTRATIONS EXCEEDING THE NHDES STANDARD APPLICABLE TO RESIDENTIAL PROPERTIES WILL BE REMOVED AND PROPERLY DISPOSED OF AT AN OFF-SITE FACILITY.
    B: FORMER BOILER & PACKING BUILDINGS AREA – SOLID WASTES WILL BE IDENTIFIED, REMOVED AND PROPERLY DISPOSED OF. CONCRETE AND BRICK REMOVED FROM THE SOLID WASTE AREA MAY BE CRUSHED AND USED AS ROAD BASE. COAL ASH/CLINKER WILL BE CONSOLIDATED IN THE FORMER PACKING BUILDING AREA, CAPPED AND COVERED.
    C. MANMADE RETENTION BASIN #4 – SHALLOW SOIL CONTAINING LEAD CONCENTRATIONS EXCEEDING THE NHDES STANDARD APPLICABLE TO RESIDENTIAL PROPERTIES WILL BE REMOVED AND PROPERLY DISPOSED AT AN OFF-SITE DISPOSAL FACILITY.

16. FULL AND/OR PARTIAL WAIVERS PERTINENT TO THE EXISTING SITE CONDITIONS PLAN ARE REQUESTED FROM SITE PLAN REVIEW AND SUBDIVISION REGULATIONS FOR THE TOWN OF EXETER SECTIONS:
    (1) 7.4.7 (PARTIAL WAIVER)–REGARDING THE LOCATION OF SIGNIFICANT TREES.
    (2) 7.4.10–REGARDING A HIGH INTENSITY SOIL SURVEY (HISS) OF ENTIRE SITE (REQUEST FOR A SITE SPECIFIC SOILS MAP TO BE USED INSTEAD).
    (3) 7.4.15 (PARTIAL WAIVER)–REGARDING HEIGHTS OF ALL EXISTING STRUCTURES.

LEGEND:

- UTILITY POLE
- HYDRANT
- Ⓦ WELL
- GV GAS VALVE
- WV WATER VALVE
- WATER SHUT OFF
- ⊞ CATCH BASIN
- Ⓢ SEWER MANHOLE
- Ⓓ DRAIN MANHOLE
- DECIDUOUS TREE
- CONIFEROUS TREE
- STONE WALL
- D DRAIN LINE
- S SEWER LINE
- W WATER LINE
- G GAS LINE
- OHU OVERHEAD UTILITIES
- BOUNDARY LINE
- BROOK
- EDGE OF WETLANDS
- PERENNIAL STREAM
- INTERMITTENT STREAM
- 40/50' NO CUT/NO DISTURBANCE SETBACK (S&SR: SECTION 9.9.2)
- 75' STRUCTURE SETBACK (S&SR: SECTION 9.9.2)
- 100'/150' BUILDING SETBACK (ZO: SECTION 9.3.4.C)
- YARD SETBACK (ZO: SECTION 4.3)
- 50' SURFACE WATER BUFFER (S&SR: SECTION 9.6.1.1)
- SPECIAL FLOOD HAZARD AREA BOUNDARY ZONE AE
- X BOX WIRE FENCE
- TREE LINE
- WETLANDS AND SURFACE WATER
- ▨ EASEMENT
- EXISTING PAVEMENT
- FORMER GREENHOUSE, BOILER & PACKING BUILDINGS AREA

LEGEND:

APPROX	APPROXIMATE
I	INDUSTRIAL
TBR	TO BE REMOVED
AC	ASBESTOS CONCRETE
PP	PLASTIC PIPE
EM	ELECTRIC METER
ELEV.	ELEVATION
HW	HARD WOOD
D1	DRAINAGE LABEL
MM	MANMADE
N/F	NOW OR FORMERLY
R-1	LOW DENSITY RESIDENTIAL ZONING DISTRICT
R-2	SINGLE FAMILY RESIDENTIAL ZONING DISTRICT
R-4	MULTI-FAMILY RESIDENTIAL ZONING DISTRICT
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
R.O.W.	RIGHT OF WAY
S.F.	SQUARE FEET
S&SR	SITE PLAN REVIEW AND SUBDIVISION REGULATIONS
SFHA	SPECIAL FLOOD HAZARD AREA
SW	SURFACE WATER
TYP.	TYPICAL
UP	UTILITY POLE
W/W	WITH WIRE
ZO	ZONING ORDINANCE

100 50 25 0 100
Graphic Scale

REV.	DATE	DESCRIPTION	DR	CK
2	10/31/17	UPDATED BOILER & PACKING BUILDINGS AREA	BMK	JCC
1	9/26/17	REVISED PER TRC COMMENTS	NJM	BMK

TFM
MSC
A division of TFMoran, Inc.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.mscengineers.com

FILE	DR	CK	CADFILE	
47175.00	BMK	JCC	531 & 539 47175.00_EC	C-01

TAX MAP 54 LOTS 5, 6 & 7 AND MAP 63 LOT 205
EXISTING SITE CONDITIONS PLAN

OAK STREET EXTENSION & FOREST STREET
EXETER, NEW HAMPSHIRE, COUNTY OF ROCKINGHAM
OWNED BY
EXETER ROSE FARM, LLC & THE
BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS
PREPARED FOR
EXETER ROSE FARM, LLC

SCALE: 1"=100' **AUGUST 15, 2017**

Oct 30, 2017 - 5:55pm
F:\MSC Projects\47175 - Oak Street Extension - Exeter\47175.00 - Baker Properties\47175.00 C3D\Survey\Drawings\47175-00_C01-C02_Existing Conditions.dwg

Memo

NH Natural Heritage Bureau
NHB Datacheck Results Letter

To: Marc Jacobs, Consulting Natural Scientist
P.O. Box 417
Greenland, NH, NH 03840-0417

From: Amy Lamb, NH Natural Heritage Bureau
Date: 10/31/2016 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB16-3245 Town: Exeter Location: Tax Maps: Map 54 Lots 5, 6 & 7; Map 63 Lot 205
Description: Properties being considered for future multi-unit residential development. Project currently in conceptual design phase.
cc: Kim Tuttle

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

Comments: Please contact NHB if the proposed project includes impacts to tidal streams/wetlands, or to emergent/scrub-shrub wetlands. Contact NH Fish & Game regarding wildlife concerns.

Plant species	**State[1]**	**Federal**	**Notes**
little-headed spikesedge (*Eleocharis parvula*)	T	--	Threats are primarily alterations to the hydrology of the wetland, such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat, activities that eliminate plants, and increased input of nutrients and pollutants in storm runoff.
sharp-flowered manna grass (*Glyceria acutiflora*)	E	--	Primarily vulnerable to changes to the hydrology of its habitat, especially alterations that change water levels. It may also be susceptible to increased pollutants and nutrients carried in stormwater runoff.
Spongy-leaved Arrowhead (*Sagittaria montevidensis ssp. spongiosa*)	E	--	Primarily vulnerable to changes to the hydrology of its habitat, especially alterations that change water levels. It may also be susceptible to increased pollutants and nutrients carried in stormwater runoff.

Vertebrate species	**State[1]**	**Federal**	**Notes**
American Eel (*Anguilla rostrata*)	SC	--	Contact the NH Fish & Game Dept (see below).
Northern Black Racer (*Coluber constrictor constrictor*)	T	--	Contact the NH Fish & Game Dept (see below).

[1]Codes: "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.

Department of Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DRED/NHB
172 Pembroke Rd.
Concord, NH 03301

Memo

NH Natural Heritage Bureau
NHB Datacheck Results Letter

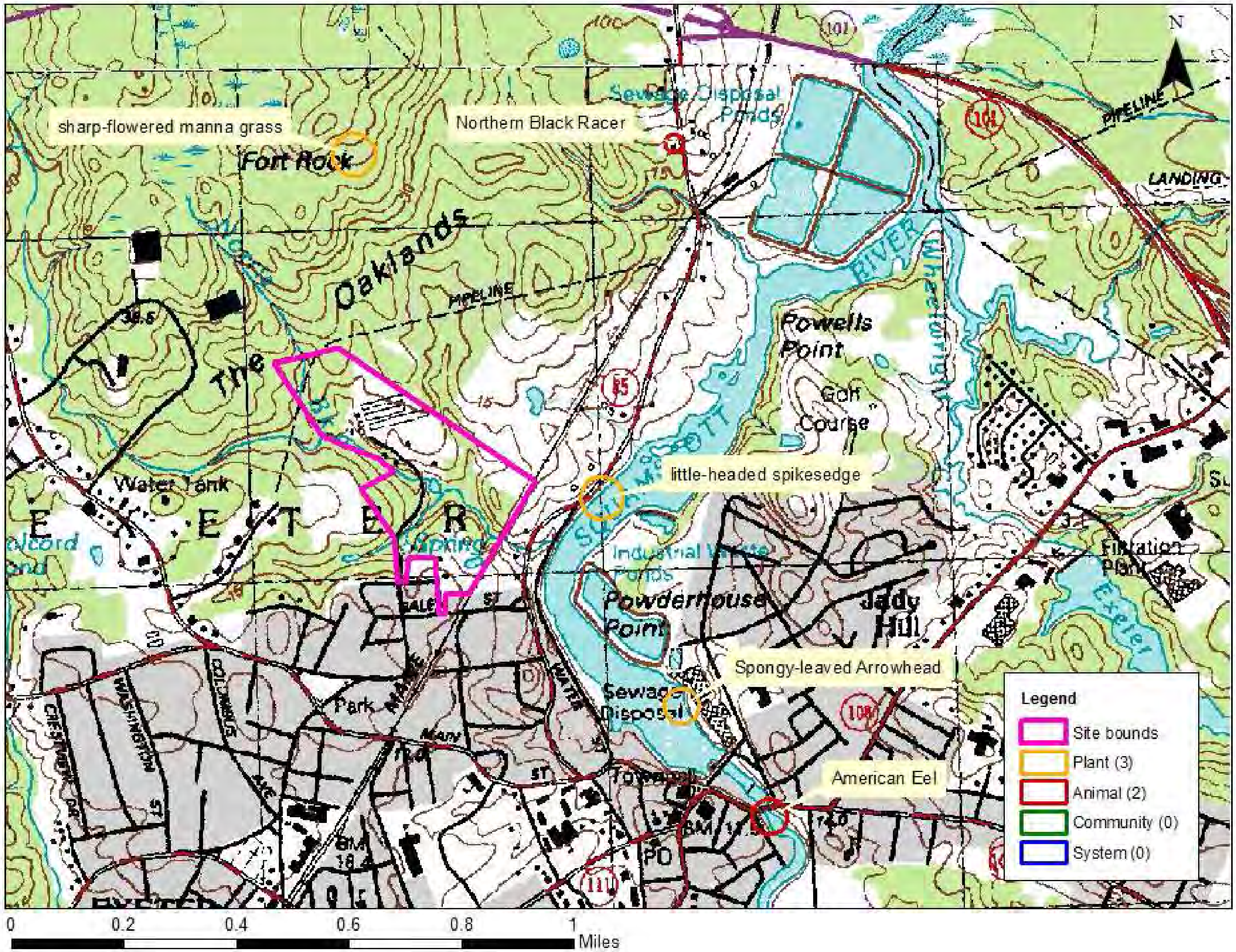
Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

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.

Department of Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DRED/NHB
172 Pembroke Rd.
Concord, NH 03301

NHB16-3245


sharp-flowered manna grass
Northern Black Racer
little-headed spikesedge
Spongy-leaved Arrowhead
American Eel
Legend
Site bounds
Plant (3)
Animal (2)
Community (0)
System (0)
0
0.2
0.4
0.6
0.8
1
Miles

New Hampshire Natural Heritage Bureau - Plant Record

little-headed spikesedge (*Eleocharis parvula*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: Small population

Detailed Description: 1996: Small population.
General Area: 1996: In low brackish tidal marsh. Associated with Spartina alterniflora (smooth cord-grass), Typha angustifolia (narrow-leaved cat-tail), Scirpus robustus (stout bulrush), Atriplex hastata (halberd-leaved orach), and Amaranthus cannabinus (water hemp).
General Comments:
Management Comments:

Location

Survey Site Name: The Great Roundabout and the Squamscott River
Managed By:

County: Rockingham
Town(s): Exeter
Size: 2.8 acres Elevation: 30 feet

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

Directions: Along the Squamscott River adjacent to pull-off on east side of Rte. 85 south of Rte. 101.

Dates documented

First reported: 1996-09-04 Last reported: 1996-09-04

New Hampshire Natural Heritage Bureau - Plant Record

sharp-flowered manna grass (*Glyceria acutiflora*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank:

Detailed Description: 1996: 200 to 300 culms in several patches, covering a total of 160 square feet.
General Area: 1996: Small (0.5 acre) Acer rubrum (red maple)/Vaccinium corymbosum (highbush blueberry) basin swamp on mucky soils. Several windthrows, root mounds and hollows in the woodland swamp provided marked relief. Shrub and herb development was patchy but moderate and included highbush blueberry, Ilex verticillata var. padifolia (swamp winterberry), Cephalanthus occidentalis (buttonbush), Lysimachia terrestris (swamp candles), Sphagnum spp. (sphagnum moss) and other bryophytes, Sparganium americanum (lesser bur reed), Bidens frondosa (common bur-marigold), and several other less abundant species. Only a few small pools of water were remaining by early September in this seasonally flooded basin. Glyceria acutiflora was associated with Sparganium americanum (lesser bur reed) in the wetter depressions.
General Comments: 1996: Fort Rock town conservation land supports a variety of good quality upland and wetland communities.
Management Comments:

Location

Survey Site Name: Fort Rock
Managed By: Henderson-Swasey Town Forest

County: Rockingham
Town(s): Exeter
Size: 2.8 acres Elevation: 40 feet

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

Directions: At the Rte. 101/Rte. 85 junction north of Exeter head south on Rte. 85 ca. 0.3 miles. At the railroad crossing park on the northwest side of the track at the Henderson-Swasey Town Forest. Go west ca. 0.75 miles to site.

Dates documented

First reported: 1996-09-04 Last reported: 1996-09-04

New Hampshire Natural Heritage Bureau - Plant Record

Spongy-leaved Arrowhead (*Sagittaria montevidensis ssp. spongiosa*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank:

Detailed Description: 2003: Very common (hundreds of plants) in several areas.
General Area: 2003: Tidal brackish marsh with smooth cordgrass (Spartina alterniflora), softstem bulrush (Schoenoplectus tabernaemontani), and three-square rush (Schoenoplectus pungens). In alluvium, with fresh-water cordgrass (Spartina pectinata), common arrowhead (Sagittaria latifolia), and mild water pepper (Persicaria hydropiperoides).
General Comments:
Management Comments:

Location

Survey Site Name: Squamscott River at Exeter
Managed By:

County: Rockingham
Town(s): Exeter
Size: 1.9 acres Elevation:

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

Directions: 2003: 250 m south of Jady Hill Ave. along the east shore of the Squamscott River in Exeter.

Dates documented

First reported: 2003-07-25 Last reported: 2003-07-25

New Hampshire Natural Heritage Bureau - Animal Record

American Eel (*Anguilla rostrata*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Special Concern	State:	Rare or uncommon

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2008: Area 13324: 15 observed.
General Area:
General Comments:
Management Comments:

Location

Survey Site Name: Great Brook-Exeter River
Managed By:

County: Rockingham
Town(s): Exeter
Size: 1.9 acres Elevation:

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

Directions: 2008: Exeter River

Dates documented

First reported: 2008-08-29 Last reported: 2008-08-29

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 Hampshire Natural Heritage Bureau - Animal Record

Northern Black Racer (*Coluber constrictor constrictor*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2012: Area 13078: 1 adult observed.
General Area: 2012: Area 13078: Residential yard.
General Comments:
Management Comments:

Location

Survey Site Name: The Oaklands
Managed By:

County: Rockingham
Town(s): Exeter
Size: .4 acres Elevation:

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

Directions: 2012: Area 13078: 20 Newfields Road, Exeter.

Dates documented

First reported: 2012-06-23 Last reported: 2012-06-23

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.

Norris Brook - upstream (West) of Oak St Ext (BLUE)

Wetland Function-Value Evaluation Form

Total area of wetland 1.9+/- Ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Apartments-south, SF Residential-north Distance to nearest roadway or other development 0'+/- OakStX

Dominant wetland systems present PSS / PFO Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Lower

How many tributaries contribute to the wetland? 2 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Exeter Rose Farm, LLC

Latitude N42 59.395' Longitude W70 57.443'

Prepared by: MEJ Date 032718

Wetland Impact:
Type Buffer-Indirect Area NA

Evaluation based on:
Office Yes Field Yes

Corps manual wetland delineation completed? Y MEJ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	6, 7, 12, 13, 14	Y	6 Slowly permeable marine sediments dominant, 7 Norris Bk perennial, 13/14 observed seeps and snow melt
Floodflow Alteration	Y	5,6,9,10,13,14,15,18	Y	15 Culvert at Oak Street Extension partially plugged
Fish and Shellfish Habitat	Y	1,2,4,7,8,10,14,17	N	7 Based upon direct observation only, no testing of water, pollution sources exist on-site
Sediment/Toxicant Retention	Y	1,2,4,6,7,8,10,14,16	Y	2, Site is contaminated, 10 Norris Brook is perennial at this location
Nutrient Removal	Y	3,4,6,7,8,9,10,12,13	Y	4 Former greenhouses,10 limited
Production Export	Y	1,4,5,7,10,12	N	
Sediment/Shoreline Stabilization	Y	1,2,6,7,8,9,12,13,14	N	
Wildlife Habitat	Y	2,6,7,8,11,13,16,17,19,21	Y	2 Assumed-pollution sources exist,11 Swamp, 17 deer tracks, south aspect on Oak St Ext side
Recreation	Y	4,5,6,10,12	N	4 Neighborhood children possibly (if not on their phones) 6 Water quality looks good, No testing done, Pollution sources exist 10 Potential parking near spring
Educational/Scientific Value	Y	5,8,9,14	N	8 Short/small bus/van only, 9 Short drive-Main St School (K-2) closest
Uniqueness/Heritage	N	5,7,8,12,15,17,19,22,27	N	5 Swamp, 12 PSS/PFO, 15 P.Loosestrife, 17 from Oak St.X,
Visual Quality/Aesthetics	N	4,6,8,10,11	N	4 P. Loosestrife-Dominant?
ES Endangered Species Habitat				See attached Natural Heritage Report
Other				

Notes:

* Refer to backup list of numbered considerations.

Western Intermittent Stream (YELLOW)

Wetland Function-Value Evaluation Form

Total area of wetland 0.42+/- Ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use SF Res-north, Forested and Industrial-South Distance to nearest roadway or other development 0 feet (Gas)

Dominant wetland systems present R5UBH Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? Upper-headwater

How many tributaries contribute to the wetland? None Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Exeter Rose Farm, LLC

Latitude _____ Longitude _____

Prepared by: MEJ Date 032718

Wetland Impact:
Type DIRECT Area 975+/- SF Perm

Evaluation based on:
Office Yes Field Yes

Corps manual wetland delineation completed? Y MEJ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	6,7,12,13,14	Y	6 Slowly permeable soils, Stream IS the wetland, 12 Appears high by direct obs.-no testing-pollutants nearby 13/14 Obs. seeps and melted snow
Floodflow Alteration	N	5,13	N	5 Slowly permeable marine sediments, 13 intermittent stream
Fish and Shellfish Habitat	N	1,2,4,7,8,14,17	N	2, Locally, 8 Dense canopy,14 Persistent but intermittent
Sediment/Toxicant Retention	N	1,4,7,8,10	N	1 Stream IS the source periodically, 10 Intermittent
Nutrient Removal	N	7	N	7 marine mineral sediments
Production Export	N	10	N	
Sediment/Shoreline Stabilization	N	1,2,4,5,8,9	N	4 Unconsolidated stream bottom a source of sediment
Wildlife Habitat	Y	2,3,5,6,7,8	N	2 Direct observation only - no testing 3 Part of larger wetland bisected by gas main access road at property line, 8 Nearby
Recreation	Y	4,6,11	N	4 existing unauthorized trails,6 Assumed-no testing, 11 Especially from gas main ROW
Educational/Scientific Value	Y	2,4,10	N	Boulders pose safety hazard?
Uniqueness/Heritage	N	7,16,18,19	N	7-upland corridor, 18 Appears so-no testing
Visual Quality/Aesthetics	Y	6,7,10,11,12	N	7 Upper portion, 10 Low/steady noise from industrial park
ES Endangered Species Habitat				See Natural Heritage Bureau report
Other				

Notes:

* Refer to backup list of numbered considerations.

Norris Brook - downstream (East) of Oak St Ext - to Railroad (GREEN)

Wetland Function-Value Evaluation Form

Total area of wetland 3.34+/- Ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use North-Forest, South-Forest/Grassland/Residential Distance to nearest roadway or other development 0'+/- OakStX

Dominant wetland systems present PSS & PFO dominant Contiguous undeveloped buffer zone present Predominantly

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Lower

How many tributaries contribute to the wetland? 5 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Exeter Rose Farm, LLC

Latitude N42 59.328' Longitude W70 57.268'

Prepared by: MEJ Date 032718

Wetland Impact:
Type DIRECT / CROSSING Area 3,163+/- SF Perm

Evaluation based on:
Office Yes Field Yes

Corps manual wetland delineation completed? Y MEJ N

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	6,7,12,13,14	Y	6 Slowly permeable soils, 7 Norris Bk is perennial, 13/14 Obs. seeps & snow melt
Floodflow Alteration	Y	5,6,9,10,13,14,15,18	Y	15 Less constricted than OakStExt culvert
Fish and Shellfish Habitat	Y	1,2,7,8,10,14,16,17	N	7, Direct obs. only-no testing-pollutants on site
Sediment/Toxicant Retention	Y	1,2,4,6,7,8,10,11,14,16	Y	1 Stream can be sediment source, 2 Site is contaminated, 10 Norris Brook is perennial
Nutrient Removal	Y	3,4,6,7,8,9,10,12,13	Y	4 Former greenhouses, 8 Dense patches
Production Export	Y	1,4,7,10,12	N	7, Large dense patches, 12 P.Loosestrife
Sediment/Shoreline Stabilization	Y	1,2,6,7,8,9,12,13	N	
Wildlife Habitat	Y	2,4,7,8,11,13,14,16,19,21	Y	2 assumed-pollution sources exist, 4 Partially developed, 11 Swamp,
Recreation	Y	4,5,6,10,12	N	4 Neighborhood possibly-no real sign 6 Assumed-pollution sources exist 10 Small bus
Educational/Scientific Value	Y	2,3,5,8,9,11,12,14	N	3 three potential classes, 8 small bus, 9 Short drive, 12 impoundment
Uniqueness/Heritage	Y	4,5,7,8,11,13,19,21,22	Y	5 PSS dominant, 8 Short drive
Visual Quality/Aesthetics	N	2,6,8,11	N	daily passenger trains
ES Endangered Species Habitat				See Natural Heritage Bureau Report
Other				

Notes:

* Refer to backup list of numbered considerations.

Eastern Intermittent Stream (RED)

Wetland Function-Value Evaluation Form

Total area of wetland 0.88+/- Ac Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No

Adjacent land use Forested (Mature and Regrowth) Distance to nearest roadway or other development 450' OakStX

Dominant wetland systems present PFO & PSS Contiguous undeveloped buffer zone present YES

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Mid

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Exeter Rose Farm, LLC

Latitude _____ Longitude _____

Prepared by: MEJ Date 032718

Wetland Impact:
Type None Area NA

Evaluation based on:
Office Yes Field Yes

Corps manual wetland delineation completed? Y MEJ N _____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	6,7,9,12,13,14	Y	6 slowly permeable sediments, 7 Intermittent, 9 Constricted outlet, 13/14 observed seeps
Floodflow Alteration	Y	5,6,7,9,13,15-18	Y	7 Intermittent outlet, 13 Intermittent
Fish and Shellfish Habitat	N	1,7,8,16,17	N	17 Intermittently defined
Sediment/Toxicant Retention	Y	3,4,6,7,8,10,13,16	N	3 Limited opportunity, 10 Intermittent,
Nutrient Removal	N	7,8,9,13	N	9 Woody stems
Production Export	N	1,7,12	N	7 Patchy, 12 Dogwood
Sediment/Shoreline Stabilization	N	1,2,9,13	N	1 Especially below constriction, 13 shrubs
Wildlife Habitat	Y	1,2,4,7,8,13,21	N	1 old woods road, 2 assumed, 21 Potential
Recreation	Y	4,6,11	N	4 Neighborhood mostly-bike trails, 6 Assumed-no testing
Educational/Scientific Value	Y	2,4,5,10,11-13	N	4 mostly natural 13 Railroad?
Uniqueness/Heritage	N	7,10,16,18,19,22	N	10 Railroad? 18 Assumed
Visual Quality/Aesthetics	N	7,10,11	N	10 Railroad?
ES Endangered Species Habitat				Refer to attached report from Natural Heritage Bureau
Other				

Notes:

* Refer to backup list of numbered considerations.

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

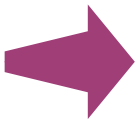
1. Wetland is large relative to the size of its watershed.
2. Deep water or open water habitat exists.
3. Overall potential for sediment trapping exists in the wetland.

4. Potential sources of excess nutrients are present in the watershed above the wetland.
5. Wetland saturated for most of the season. Ponded 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

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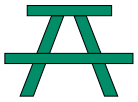
[1]In March 1995, a rapid wildlife habitat assessment method was completed by a University of Massachusetts research team with funding and oversight provided by the New England Transportation Consortium. The method is called WEThings (wetland habitat indicators for non-game species). It produces a list 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

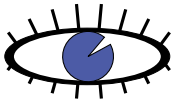
1. Wetland contains or is known to contain threatened, rare, or endangered species.
2. Little or no disturbance is occurring in this wetland.
3. Potential educational site contains a diversity of wetland classes which are accessible or potentially accessible.
4. Potential educational site is undisturbed 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.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects

June 29, 2018

Kristen Murphy, Natural Resource Planner
Planning Department
10 Front Street
Exeter, NH 03833

Re: Exeter Rose Farm – Revised Conservation Easement Submittal
MSC Project #47175.00

Dear Ms. Murphy:

On behalf of our client, Exeter Rose Farm, LLC, we respectfully request to be placed on the agenda for the upcoming Conservation Commission meeting on July 10, 2018. We would like to present our revised plan showing potential conservation land as a follow up to our June 12, 2018 meeting and is associated with our application for an Open Space Development (Planning Board Case #17-27).

The area being proposed for conservation is 6.31 acres of contiguous land located northwesterly of Oak Street Extension and includes a portion of Norris Brook (see attached plan). This land also abuts the southerly boundary of the Town of Exeter Henderson-Swasey Forest for 732'. The land is wooded with mature growth and contains 5.68 acres of uplands with the remainder being wetlands (0.63 acres).

In this area there are existing trails running through the property from the "Open Space" of the Norris Brook Condominiums to the Town Forest. The addition of this land would create a contiguous network of open spaces or "greenways" and would provide the public and residents with access to recreational activities.

Thank you for your time and consideration.

Sincerely,
MSC a division of TFMoran, Inc.

Brenda Kolbow, PLS
Survey Project Manager

BMK/cbj

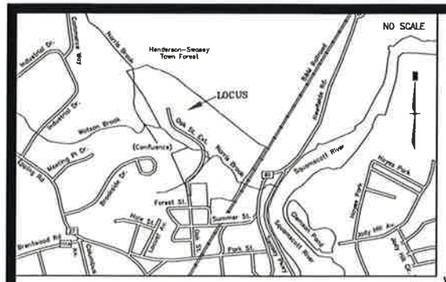
TFMoran, Inc.
48 Constitution Drive, Bedford, NH 03110
T(603) 472-4488 www.tfmoran.com

MSC a division of TFMoran, Inc.
170 Commerce Way–Suite 102, Portsmouth, NH 03801
T(603) 431-2222

PRELIMINARY

REV.	DATE	DESCRIPTION	DR	CK

NO SCALE



VICINITY PLAN

NAD83 (2011)

"HENDERSON-SWASEY TOWN FOREST"
TAX MAP 49 LOT 8
N/F
TOWN OF EXETER
HENDERSON-SWASEY FOREST
10 FRONT STREET
EXETER, NH 03833
RCRD BK.2056 PG.64
(SEE PLAN REFERENCE 10)
(municipal)

TAX MAP 53 LOT 4
N/F
JOHN P. & TERESA TOOMEY
2 NEWFIELDS ROAD
EXETER, NH 03833
RCRD BK.5516 PG.135
(SEE PLAN REFERENCE 9)

TAX MAP 49 LOT 7
N/F
BOSTON AND MAINE RAILROAD CORPORATION
1700 IRON HORSE PARK
NORTH BILLERICA, MA 01862
RCRD BK.529 PG.14
(SEE PLAN REFERENCE 4)

TAX MAP 46 LOT 5
N/F
EAST COAST VENTURES INC.
C/O INTEGRATED REALTY RESOURCES
8025 S. WILLOW STREET, SUITE 209
MANCHESTER, NH 01852-1681
RCRD BK.5613 PG.2678
(SEE PLAN REFERENCE 11)
(industrial)

TAX MAP 54 LOT 1
N/F
SIGARMS INC.
18 INDUSTRIAL DRIVE
EXETER, NH 03833
RCRD BK.2817 PG.686
(SEE PLAN REFERENCE 11)
(industrial)

TAX MAP 54 LOT 4
N/F
NORRIS BROOK CONDOMINIUM
3 HOLLAND WAY, STE. 201
EXETER, NH 03833
RCRD BK.2561 PG.2642
(SEE PLAN REFERENCES 5 & 6)
(residential)

TAX MAP 63 LOT 207-1
N/F
JOAN GALLAGHER
5 WADLEIGH STREET
EXETER, NH 03833
RCRD BK.4428 PG.2196
(SEE PLAN REFERENCES 7 & 8)
(residential)

TAX MAP 63 LOT 204
N/F
D. TUCK PROPERTIES LLC
215 ATLANTIC AVENUE
SEABROOK, NH 03874
RCRD BK.4816 PG.657
(residential)

TAX MAP 63 LOT 206
N/F
JOAN GALLAGHER &
THOMAS R. LIGHT
5 WADLEIGH STREET
EXETER, NH 03833
RCRD BK.4428 PG.2194
(SEE PLAN REFERENCES 7 & 8)
(residential)

TAX MAP 63 LOT 202
N/F
MAURA C. FAY &
MICHAEL VEAZEY
13 FOREST STREET
EXETER, NH 03833
RCRD BK.5231 PG.321
(residential)

TAX MAP 63 LOT 203
N/F
MARY FRANCES DAGOSTINO
11 FOREST STREET
EXETER, NH 03833
RCRD BK.2007 PG.1579
(residential)

TAX MAP 63 LOT 190
N/F
JEANETTE WILLIAMS REVOCABLE TRUST
10 WADLEIGH STREET
EXETER, NH 03833
RCRD BK.3768 PG.1712
(residential)

RECREATION AREA 1: CONSERVATION LAND (6.31 ACRES)

TOTAL COMMON OPEN SPACE =12.61± ACRES (INCLUDING 6.31 ACRES OF RECREATION AREA)

ROSE FARM LANE — ROAD LENGTH = 1,159'±

OAK STREET EXT. (A PRIVATE ROAD) — ROAD LENGTH = 1,213'±

OAK STREET EXT. (SEE RCRD BK.#419 PG.#259 FOR RIGHT OF WAY)

ROSE FARM LANE

WADLEIGH STREET (PUBLIC R.O.W.)

FOREST STREET (PUBLIC R.O.W.)

OAK STREET (PUBLIC R.O.W.)

BOSTON & MAINE RAILROAD

NORRIS BROOK

EXETER SHORELAND PROTECTION DISTRICT

100' VEGETATIVE BUFFER

(CONTIGUOUS COMMON OPEN SPACE)

PROPOSED TRAIL

APPROX. TRAIL LOCATION

INTERMITTENT STREAM

PERENNIAL STREAM

DRAINAGE EASEMENT (16,348 S.F.)

DRAINAGE EASEMENT (TO BE DESIGNED)

SIGHT DISTANCE EASEMENT

SLOPE EASEMENT

50' WIDE ACCESS & UTILITY EASEMENT

20' WIDE DRAINAGE EASEMENT

35' WIDE GAS LINE EASEMENT

RECREATION AREA ACCESS

RECREATION AREA 2

RECREATION AREA 3

RECREATION AREA 4

RECREATION AREA 5

MM RETENTION BASIN

MM RETENTION CONCRETE RETENTION BARRIER

SEWER PUMP STATION

GRANITE HEADWALL

SPRING HOUSE

GATE

LOT LINE TO BE ELIMINATED

TURN-AROUND EASEMENT

SLOPE EASEMENT

PORTION OF OAK STREET EXTENSION TO REMAIN

STRUCTURE SETBACK (TYP.)

CONFLUENCE WITH WATSON BROOK

POINT "A" CONFLUENCE WITH WATSON BROOK

POINT "B"

APPROX. CONSOLIDATED AREA (SEE NOTE 15#)

NORRIS BROOK BOUNDARY RUNS ALONG BROOK FROM POINT "A" TO POINT "B" (SEE NOTE 11)

LOT	AREA
1	186,044 S.F. (5-Unit Multi-Family)
2	101,591 S.F.
3	53,055 S.F.
4	10,076 S.F.
5	10,937 S.F.
6	13,494 S.F.
7	12,162 S.F.
8	44,842 S.F.
9	320,216 S.F.
10	39,667 S.F.
11	33,157 S.F.
12	18,601 S.F.
13	15,219 S.F.
14	15,156 S.F.
15	15,201 S.F.
16	15,097 S.F.
17	15,208 S.F.
18	15,294 S.F.
19	15,165 S.F.
20	15,240 S.F.
21	15,252 S.F.
22	15,890 S.F.
23	15,151 S.F.
24	15,651 S.F.
25	15,577 S.F.
26	19,401 S.F.
27	15,224 S.F.
28	22,273 S.F.
29	16,591 S.F.
30	16,591 S.F.
31	21,886 S.F.
32	21,402 S.F.
33	21,045 S.F.
34	28,507 S.F.
35	39,300 S.F. (DUPLEX)
36	15,283 S.F.
37	15,362 S.F.
38	15,111 S.F.
39	16,518 S.F.
40	113,887 S.F.
41	57,688 S.F.

NOTES:

1. THE PARCELS ARE AS SHOWN ON THE TOWN OF EXETER ASSESSOR'S MAP 54 AS LOTS 5, 6 & 7 AND MAP 63 LOT 205.

2. OWNERS OF RECORD:

MAP 54 LOT 5
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2104
(603) 425-8598

MAP 54 LOT 6
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2104
(603) 425-8598

MAP 54 LOT 7
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2102
(603) 425-8598

MAP 63 LOT 205
BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUST
1 FOREST STREET
EXETER, NH 03833
RCRD BK.4574 PG.2843
(603) 502-7175

3. TOTAL PARCEL AREA:
2,176,025± S.F.
(49.95± ACRES)

4. THE SUBJECT PARCELS ARE LOCATED IN THE R-1 LOW DENSITY SINGLE FAMILY, R-2 SINGLE FAMILY, R-4 MULTI-FAMILY ZONING DISTRICTS AND PARTIALLY LOCATED IN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT, AND THE WETLANDS CONSERVATION AND FLOOD HAZARD OVERLAY DISTRICTS.

5. DENSITY AND DIMENSIONAL REGULATIONS:

	R-1	R-2	R-4 (DETACHED SINGLE FAMILY)
MINIMUM LOT AREA:			
(NO MUNICIPAL WATER & SEWER)	2 ACRES	1 ACRES	NA
(MUNICIPAL WATER & SEWER)	40,000 S.F.	15,000 S.F.	12,000 S.F.
(DWELLING UNIT)	40,000 S.F.	15,000 S.F.	12,000 S.F.
MINIMUM LOT WIDTH:	150'	100'	100'
MINIMUM LOT DEPTH:	150'	100'	100'
MAXIMUM HEIGHT:	35'/3 STORIES	35'/3 STORIES	35'/3 STORIES
MINIMUM YARD SETBACKS:			
FRONT YARD:	25'	25'	25'
SIDE YARD:	15'/30'	15'/30'	15'/30'
REAR YARD:	25'	25'	25'
MAXIMUM BUILDING COVERAGE:	15%*	25%*	25%*
MINIMUM OPEN SPACE:	80%**/70%*	60%**/40%*	30%

*FOR AREAS WITHIN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT THE MAXIMUM LOT COVERAGE IS 10% (SEE SECTION 9.3.4.B)
**FOR LOTS USING SEPTIC SYSTEMS
PER THE TOWN OF EXETER, N.H. ZONING ORDINANCE, SECTION 4.3.

OPEN SPACE DEVELOPMENT***
INTERNAL DIMENSIONAL REQUIREMENTS:

MINIMUM RIGHT OF WAY FRONTAGE:	50'	
FRONT YARD SETBACK:	25'	
SIDE YARD SETBACK:	15'	
REAR SETBACK:	20'	
MINIMUM LOT SIZE:	15,000 SF*	10,000 SF**

*FOR LOTS WITHIN R-1 ZONE
**FOR LOTS WITHIN R-2 & R-4 ZONES
PER THE TOWN OF EXETER, N.H. ZONING ORDINANCE, SECTION 7.5.6.
***THE TOWN OF EXETER, N.H. ZONING ORDINANCE, SECTION 4.3, SCHEDULE II NOTE 19 STATES "FOR PROPOSED SUBDIVISIONS OF AN EXISTING LOT OF RECORD HAVING A TOTAL COMBINED AREA OF 20 OR GREATER ACRES, OPEN SPACE DEVELOPMENT PURSUANT TO ARTICLE 7 IS REQUIRED UNLESS WAIVED BY THE EXETER PLANNING BOARD."

6. THE HORIZONTAL DATUM IS REFERENCED TO NORTH AMERICAN DATUM OF 1983 [NAD 83 (2011)] AND THE VERTICAL DATUM IS RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88, GEOID 12A). CONTOUR INTERVAL IS 2 FEET.

7. THE SUBJECT PARCELS ARE PARTIALLY LOCATED IN SPECIAL FLOOD HAZARD AREA ZONE AE (EL.8) & SPECIAL FLOOD HAZARD AREA ZONE X AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP NUMBER 33015C0402E WITH AN EFFECTIVE DATE OF MAY 17, 2005.

NOTES CON'T:

8. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
9. THE PURPOSE OF THIS PLAN IS TO SHOW A CONCEPTUAL OPEN SPACE DEVELOPMENT SHOWING CONSERVATION LAND PROPOSED FOR ACCEPTANCE BY THE TOWN OF EXETER CONSERVATION COMMISSION. SEE PLANNING BOARD CASE #17-27.
10. FIELD SURVEY COMPLETED BY TODD C. EMERSON AND NICK J. MORTON IN JANUARY 2016 AND JULY 2017 USING A TOPCON DS103 AND TOPCON TESLA DATA COLLECTOR, A TOPCON MG-A5 BACKPACK GPS UNIT AND A TOPCON HYPER SR STATIC GPS UNIT. AERIAL TOPOGRAPHY WAS PROVIDED BY WSP PACKARD BRINKERHOFF OF CHARLTON, MA IN MAY 2016.
11. THE BOUNDARY RUNS ALONG THE BROOK FROM POINT "A" TO POINT "B". THE TOTAL AREA WAS DETERMINED USING THE CENTERLINE OF THE BROOK AS LOCATED BY MSC IN JANUARY 2016.
12. UTILITY LINES SHOWN HEREON ARE A COMPILATION OF FIELD LOCATIONS, RECORD PLANS AND DIGITIZED PER THE TOWN OF EXETER GIS WEB SITE AND ARE APPROXIMATE ONLY. CONTACT DIGSAFE @ 1-888-DIG-SAFE AND THE TOWN OF EXETER DEPARTMENT OF PUBLIC WORKS TO VERIFY UTILITIES.
13. MANMADE AND NATURAL JURISDICTIONAL WETLAND BOUNDARIES WERE DELINEATED BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, AND JON BALANOFF IN DECEMBER 2015 ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS – WETLANDS DELINEATION MANUAL; THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES – WETLANDS BUREAU – ENV WT 100-900 AND THE TOWN OF EXETER ZONING. PREDOMINANT HYDRIC SOILS WERE IDENTIFIED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 3, APRIL 2004 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 7, 2010. THE INDICATOR STATUS OF HYDROPHYTIC VEGETATION WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS – NORTHCENTRAL AND NORTHEAST 2014 REGIONAL WETLAND PLANT LIST. COPIES OF SITE PLANS DEPICTING THE WETLAND DELINEATION WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS LOCATION.
14. WETLANDS CONTAINING POORLY DRAINED SOILS ARE SUBJECT TO A 40' NO CUT/NO DISTURBANCE SETBACK. WETLANDS CONTAINING VERY POORLY DRAINED (VPD) SOILS ARE SUBJECT TO A 50' NO CUT/NO DISTURBANCE SETBACK.
15. THE FORMER GREENHOUSE AREA AND THE FORMER BOILER & PACKING BUILDINGS AREA ARE THE SUBJECT NHDES SITE #201203003. SEE REMEDIAL ACTION PLAN (RAP) PREPARED BY STONEHILL ENVIRONMENTAL, INC. (CURRENTLY UNDER REVIEW BY NHDES) FOR DETAILS.
CONCEPTUAL REMEDIATION PLAN:
A: FORMER GREENHOUSE AREA – SHALLOW SOIL CONTAINING LEAD CONCENTRATIONS EXCEEDING THE NHDES STANDARD APPLICABLE TO RESIDENTIAL PROPERTIES WILL BE REMOVED AND PROPERLY DISPOSED AT AN OFF-SITE DISPOSAL FACILITY.
B: FORMER BOILER & PACKING BUILDINGS AREA – SOLID WASTES WILL BE IDENTIFIED, REMOVED AND PROPERTY DISPOSED OF. CONCRETE AND BRICK REMOVED FROM THE SOLID WASTE AREA MAY BE CRUSHED AND USED AS ROAD BASE. COAL ASH/CLINKER WILL BE CONSOLIDATED IN THE FORMER PACKING BUILDING AREA, CAPPED AND COVERED. *CONSOLIDATED AREAS WILL BE FIELD LOCATED AND SHOWN ON THIS PLAN AFTER REMEDIATION TAKES PLACE.
C: MANMADE RETENTION BASIN #4 – SHALLOW SOIL CONTAINING LEAD CONCENTRATIONS EXCEEDING THE NHDES STANDARD APPLICABLE TO RESIDENTIAL PROPERTIES WILL BE REMOVED AND PROPERLY DISPOSED AT AN OFF-SITE DISPOSAL FACILITY.
16. THE LANDOWNER IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL WETLANDS REGULATIONS, INCLUDING ANY PERMITTING AND SETBACK REQUIREMENTS REQUIRED UNDER THESE REGULATIONS.
17. ALL WATER, SEWER, ROAD (INCLUDING PARKING LOT), AND DRAINAGE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 9.5 GRADING, DRAINAGE, AND EROSION & SEDIMENT CONTROL AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION OF PUBLIC UTILITIES IN EXETER, NEW HAMPSHIRE.

LEGEND:

L1	LINE LABEL
N/F	NOW OR FORMERLY
I	INDUSTRIAL ZONING DISTRICT
R-1	LOW DENSITY RESIDENTIAL ZONING DISTRICT
R-2	SINGLE FAMILY RESIDENTIAL ZONING DISTRICT
R-4	MULTI-FAMILY RESIDENTIAL ZONING DISTRICT
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
R.O.W.	RIGHT OF WAY
S.F.	SQUARE FEET
S&SR	SITE PLAN REVIEW AND SUBDIVISION REGULATIONS
SFHA	SPECIAL FLOOD HAZARD AREA
SW	SURFACE WATER
TYP.	TYPICAL
WA	WETLANDS AREA
ZO	ZONING ORDINANCE
(1)	PROPOSED LOT NUMBER
●	PLANTED SCREENING
◉	DRILL HOLE FOUND
O	IRON ROD FOUND
●	MONUMENTATION TO BE SET PER S&SR: SECTION 9.35
	STONE WALL
	BROOK
	EDGE OF WETLANDS
	PERENNIAL STREAM
	INTERMITTENT STREAM
	INTERIOR BOUNDARY LINE
	EXTERIOR BOUNDARY LINE
	VEGETATIVE BUFFER (S&SR: SECTION 9.6.1.2)
	40'/50' NO CUT/NO DISTURBANCE SETBACK (S&SR: SECTION 9.9.2)
	75' STRUCTURE SETBACK (S&SR: SECTION 9.9.2)
	100'/150' BUILDING SETBACK (ZO: SECTION 9.3.4.C)
	YARD SETBACK (ZO: SECTION 7.5.6)
	RECREATION AREA
	SPECIAL FLOOD HAZARD AREA BOUNDARY
	BOX WIRE FENCE
	WETLANDS AND SURFACE WATER
	SHARED DRIVEWAY/ ACCESS EASEMENT
	DRAINAGE EASEMENT
	UTILITY EASEMENT
	CONSOLIDATION AREA

CONSERVATION LAND

COMMON OPEN SPACE

RECREATION AREA

PAVEMENT

100 50 25 0 100
Graphic Scale

TFM — MSC, A division of TFMoran, Inc.
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.mscengineers.com

FILE	47175.00	DR	BMK	FB	531 & 539
		CK	JCC	CADFILE	47175.00_OPS

TAX MAP 54 LOTS 5, 6 & 7 & TAX MAP 63 LOT 205

CONCEPTUAL OPEN SPACE SUBDIVISION PLAN

EXETER ROSE FARM

FOREST STREET & OAK STREET EXTENSION
EXETER, NEW HAMPSHIRE, COUNTY OF ROCKINGHAM

OWNED BY

EXETER ROSE FARM, LLC &
BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS

PREPARED FOR

EXETER ROSE FARM, LLC

SCALE: 1"=100' **JUNE 29, 2018**

PRELIMINARY

Jun 29, 2018 - 11:03am
F:\MSC Projects\47175 - Oak Street Extension - Exeter\47175.00 - Baker Properties\47175.00 C3D\Survey\Drawings\OPEN SPACE\For Comse\47175-00_Revised Comments Ease_6 Ac.dwg

Town of Exeter

Planning Board Application for Conditional Use Permit:

Shoreland Protection District

EXETER ROSE FARM, LLC
OAK STREET EXTENSION
and FOREST STREET
EXETER, NH
JUNE 29, 2018

Town of Exeter Planning Board Application

Conditional Use Permit: Shoreland Protection District
In accordance with Zoning Ordinance Article: 9.3

SUBMITTAL REQUIREMENTS:

1. Fifteen (15) copies of the Application
2. Fifteen (15) 11"x17" and three (3) full sized copies of the plan which must include:

   Existing Conditions

   a. Property Boundaries
   b. Edge of Wetland and associated Buffer (Wetlands Conservation Overlay District – WCOD)
      --Prime wetland: 100'
      --Vernal Pool (>200 SF): 75'
      --Exemplary Wetland: 50'
      --Very Poorly Drained: 50'
      --Poorly Drained: 40'
      --Inland Stream: 25'
   c. Structures, roads/access ways, parking, drainage systems, utilities, wells and wastewater disposal systems and other site improvements

   Proposed Conditions

   a. Edge of Wetlands and Wetland Buffers and distances to the following:
      i. Edge of Disturbance
      ii. Structures, roads/access ways, parking, drainage systems, utilities, wells and wastewater disposal systems and other site improvements
   b. Name and phone number of all individuals whose professional seal appears on the plan
3. If applicant and/or agent is not the owner, a letter of authorization must accompany this application
4. Supporting documents i.e. Letters from the Department of Environmental Services, Standard Dredge and Fill Application and Photos of the property
5. A Town of Exeter Assessors list of names and mailing addresses of all abutters

Required Fees:
Planning Board Fee: **$50.00** Abutter Fee: **$10.00** Recording Fee (if applicable): **$25.00**

The Planning Office must receive the completed application, plans and fees on the day indicated on the Planning Board Schedule of Deadlines and Public Hearings.

APPLICANT	Name: Exeter Rose Farm, LLC
	Address: 953 Islington Street, Suite 23D
	Email Address: keith@bakerprop.com
	Phone: 603-443-0255
PROPOSAL	Address: Oak Street Extension Map 63 Lot 205
	Tax Map #_54_____ Lot#_5,6 & 7_ Zoning District: R1, R2 & R4
	Owner of Record: Exeter Rose Farm, LLC + Benjamin & Joan Dagostino Rev. Trust
Person/Business performing work outlined in proposal	Name: Exeter Rose Farm, LLC
	Address: Same as above
	Phone: Same as above
Professional that delineated wetlands	Name: Marc E. Jacobs
	Address: 609 Portsmouth Avenue, P.O. Box 417, Greenland, NH 03840
	Phone: 603-686-5097

Town of Exeter
Planning Board Application
Conditional Use Permit: Shoreland Protection District

Detailed Proposal including intent, project description, and use of property: (Use additional sheet as needed)
Refer to the attached memorandum prepared by Marc E Jacobs, CWS

Total SPD on site = 586,230 SF

Shoreland Protection District Impact (in square footage): Permanent 232,094 SF, Temporary 48,575 SF

	Wetland:	(SQ FT.)	Buffer:	(SQ FT.)
Temporary Impact	☐ Prime Wetlands	NA	☐ Prime Wetlands	NA
	☐ Exemplary Wetlands	NA	☐ Exemplary Wetlands	NA
	☐ Vernal Pools (>200SF)	NA	☐ Vernal Pools (>200SF)	NA
	☐ VPD	NA	☐ VPD	NA
	☒ PD	2,544	☒ PD	29,713
	☐ Inland Stream	NA	☐ Inland Stream	NA
Permanent Impact	Wetland:		Buffer:	
	☐ Prime Wetlands	NA	☐ Prime Wetlands	NA
	☐ Exemplary Wetlands	NA	☐ Exemplary Wetlands	NA
	☐ Vernal Pools (>200SF)	NA	☐ Vernal Pools (>200SF)	NA
	☐ VPD	NA	☐ VPD	NA
	☒ PD	3,606	☒ PD	51,998
	☐ Inland Stream	100 LF	☐ Inland Stream	714

List any variances/special exceptions granted by Zoning Board of Adjustment including dates:
Not applicable

Describe how your proposal meets the conditions of Article 9.3.4.G.2 of the Zoning Ordinance (attached for reference): Refer to the attached memorandum prepared by Marc E. Jacobs, CWS

Conditional Use Permit Criteria

Shoreland Protection District

9.3.4 G Conditional Uses:

2. The Planning Board may grant a Conditional Use Permit for those uses listed above only after written findings of fact are made which have been reviewed by technical experts from the Rockingham Conservation District, if required by the Planning Board, at the cost of the developer, provided that all of the following are true:

a. The proposed use will not detrimentally affect the surface water quality of the adjacent river or tributary, or otherwise result in unhealthful conditions.

b. The proposed use will discharge no waste water on site other than that normally discharged by domestic waste water disposal systems and will not involve on-site storage or disposal of hazardous or toxic wastes as herein defined.

c. The proposed use will not result in undue damage to spawning grounds and other wildlife habitat.

d. The proposed use complies with the use regulations identified in Article 9.3.4 Exeter Shoreland Protection District Ordinance – Use Regulations and all other applicable sections of this article.

e. The design and construction of the proposed use will be consistent with the intent of the purposes set forth in Article 9.3.1 Exeter Shoreland Protection District Ordinance – Authority and Purpose.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Abutters List

Exeter Rose Farm
Forest & Oak Street Extension
Exeter, NH 03833

Date: **June 28, 2018**
Project #: **47175.00**

Assessors Map		Abutter Name	Mailing Address
Map	Lot		
LOCUS 54	5	Exeter Rose Farm LLC	953 Islington Street #23 Portsmouth, NH 03801
LOCUS 54	6	Exeter Rose Farm LLC	Same as Map 54 Lot 5
LOCUS 54	7	Exeter Rose Farm LLC	Same as Map 54 Lot 5
63	205	Benjamin Dagostino Revocable Trust & Joan Dagostino Revocable Trust	1 Forest Street Exeter, NH 03833
54	1	SIG SAUER, INC.	18 Industrial Drive Exeter, NH 03833
54	4	Norris Brook Condominiums c/o Great North Property Management	3 Holland Way, Suite 201 Exeter, NH 03833
53	4	John P.& Teresa Toomey	2 Newfields Road Exeter, NH 03833
48	5	East Coast Ventures, Inc. c/o Intergrated Realty Resources	8025 S. Willow St. Suite 209 Manchester, NH 03103
49	7	Boston and Maine Railroad Corporation	1700 Iron Horse Park North Belrica, MA 01862-1681
49	8	Town of Exeter Henderson Swasey Forest	10 Front Street Exeter, NH 03833
63	190	Jeannette Williams Revocable Trust Ansara Sheree Trustee	10 Wadleigh Street Exeter, NH 03833

TFMoran, Inc.
48 Constitution Drive, Bedford, NH 03110
T(603) 472-4488 www.tfmoran.com

MSC a division of TFMoran, Inc.
170 Commerce Way–Suite 102, Portsmouth, NH 03801
T(603)431-2222 www.tfmoran.com

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Abutters List - cont.

Assessors Map		Abutter Name	Mailing Address
Map	Lot		
63	202	Maura C. Fay & Michael Veazey	13 Forest Street Exeter, NH 03833
63	203	Mary Frances Dagostino	11 Forest Street Exeter, NH 03833
63	204	D. Tuck Properties, LLC	215 Atlantic Avenue Seabrook, NH 03874
63	206	Joan Gallagher & Thomas R. Light	5 Wadleigh Street Exeter, NH 03833
63	207-1	Joan Gallagher	Same as Map 63 Lot 206

Civil Engineers / Surveyor	MSC, a division of TFMoran, Inc. 170 Commerce Way – Suite 102 Portsmouth, NH 03801
Marc Jacobs, CWS, CSS, CPESC	P.O. Box 417 Greenland, NH 03840

Marc E. Jacobs, *CSS, CWS, PWS, CPESC*
Professional Wetland / Soil Scientist
jacobs2wetsoil2004@yahoo.com

MEMORANDUM

VIA: First class mail/Certified/Facsimile/**Hand Delivery**/Overnight/E-mail

TO: Mr. David Sharples, Town Planner
Ms. Kristen Murphy, Natural Resource Planner

FROM: Marc Jacobs, CWS, PWS, CSS, CPESC

DATE: June 29, 2018

SUBJECT: Exeter Rose Farm, LLC

RE: Conditional Use Permit – Exeter Shoreland Protection District

The following information is intended to support the Shoreland Conditional Use Permit application for the above-referenced project according to the Exeter Shoreland Protection District, Zoning Section 9.3. Where specific shoreland impact areas are referenced, please refer to the attached Shoreland Protection District Area & Impacts Plan dated June 29, 2018. You may also wish to refer to the attached Wetland Delineation Report dated June 25, 2017 as well as the attached Natural Resources Plan (document) dated revised May 31, 2018.

Norris Brook and the unnamed perennial stream are not identified on the New Hampshire Department of Environmental Services – Consolidated List of Waterbodies Subject to RSA 483-B, therefore there is no jurisdiction subject to the state Shoreland Water Quality Protection Act within the project.

Regarding protection of water resources from erosion and sedimentation, customary perimeter siltation controls such as Marafi© siltation fencing will be installed prior to construction and maintained throughout construction until such time any exposed soils are stabilized with vegetation or by other means. Management of erosion and siltation is a dynamic process that changes as construction progresses so additional measures will be implemented where deemed appropriate as construction and stabilization proceeds. With the exception of the impacts which necessitate this CUP application, the project proposes to meet or exceed the various buffers established by the wetlands and shoreland protection districts created by the zoning.

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Mobile **(603) 534-SOIL (7645)**

The various shoreland impact areas are quantified in Table 1 and described in greater detail below by area.

TABLE 1

TOWN OF EXETER SHORELAND PROTECTION DISTRICT (SPD) AREAS AND IMPACTS TABLE

SPD	0–75' VEGETATIVE BUFFER (AREA 1)	75–100' BUILDING SETBACK (AREA 2)	75–150' BUILDING SETBACK (AREA 3)	100–150' SPD (AREA 4)	150–300' SPD (AREA 5)	TOTAL
AREA	586,230 S.F.	36,074 S.F.	216,989 S.F.	60,077 S.F.	420,802 S.F.	1,320,172 S.F.
PERMANENT IMPACT	66,345 S.F.	3,730 S.F.	54,234 S.F.	8,210 S.F.	99,575 S.F.	232,094 S.F.
TEMPORARY IMPACT	23,095 S.F.	858 S.F.	15,881 S.F.	887 S.F.	7,854 S.F.	48,575 S.F.

Area 1 – VEGETATIVE BUFFER AREA

Area 1 includes a total of 586,230 square feet (SF) or 13.46 acres of shoreland buffer district between 0 and 75 feet and is known as the Vegetative Buffer Area. Approximately 66,345 SF of permanent and 23,095 SF of temporary impact are proposed to this part of the Exeter Shoreland zone representing 11 and 3.9 percent respectively of the total buffer between 0 and 75 feet. The breakdown of buffer impacts (in SF) is as follows:

AREA	TOTAL (SF)	PERMANENT (SF)	TEMPORARY (SF)	COMMENT
1A	19,181	4,253	14,928	Remediation Area
1B	67,432	59,265	8,167	Rose Farm Lane – Norris Brook
1C	379	379	NA	Driveway to Multi-family Dwelling Lot 1
1D	1,253	1,253	NA	Jailhouse Spring access
1E	563	563	NA	Jailhouse Spring access
1F	632	632	NA	Jailhouse Spring access

Alteration of the natural vegetation or managed woodland within 75 feet of the Squamscott River or major tributaries is permitted by conditional use permit per §9.3.4.E.

Area 2 – BUILDING SETBACK AREA

Area 2 includes a total of 36,074 SF or 0.83 acres of shoreland buffer district between 75 and 100 feet and is known as the Building Setback Area as required for unnamed perennial streams in the Squamscott River Watershed per §9.3.4.C. Approximately 3,730 SF of permanent and 858 SF of temporary impact are proposed to this segment of the Shoreland Protection Zone representing 10.3 and 2.4 percent respectively of the total shoreland between 75 and 100 feet. The breakdown of buffer impacts (in SF) is as follows:

AREA	TOTAL (SF)	PERMANENT (SF)	TEMPORARY (SF)	COMMENT
2A	3,072	2,214	858	Construction of Gravel Wetland 4
2B	114	114	NA	Grading for dwelling on Proposed Lot 2
2C	1,286	1,286	NA	Driveway to Multi-family Dwelling Lot 1
2D	116	116	NA	Jailhouse Spring access

No building (except a structure, including roadways, permitted by conditional use as per 9.3.4.G.1.c.) shall be constructed within 100 feet of the shoreline of perennial brooks as per §9.3.4.C. Alteration of the surface configuration of land by the addition of fill or by dredging is permitted within 150 feet of the shoreline of the Squamscott River or its major tributaries by conditional use permit per §9.3.4.D.

Area 3 – BUILDING SETBACK AREA

Area 3 includes a total of 216,989 SF or 4.98 acres of shoreland buffer district between 75 and 150 feet and is known as the Building Setback Area as required for Norris Brook in the shoreland district. Approximately 54,234 SF of permanent and 15,881 SF of temporary impact are proposed to this segment of the Shoreland Protection Zone representing 25 and 7.3 percent respectively of the total shoreland between 75 and 150 feet. The breakdown of buffer impacts (in SF) is as follows:

AREA	TOTAL (SF)	PERMANENT (SF)	TEMPORARY (SF)	COMMENT
3A	13,987	959	13,028	Coal Ash & Solid Waste Remediation
3B	42,772	42,772	NA	Gravel Wetland 2, Rose Farm Lane – Norris Brook, Improvement of driveway access for Lots 35, 40-41, Existing dwelling Lot 39
3C	11,032	8,179	2,853	Rose Farm Lane
3D	75	75	NA	Grading for dwelling on Proposed Lot 8
3E	2,249	2,249	NA	Grading for Multi-family dwelling Lot 1

No building (except a structure, including roadways, permitted by conditional use as per 9.3.4.G.1.c.) shall be constructed within 150 feet from the shoreline of the Squamscott River or major tributaries as per §9.3.4.C. Alteration of the surface configuration of land by the addition of fill or by dredging is permitted within 150 feet of the shoreline of the Squamscott River or its major tributaries by conditional use permit per §9.3.4.D.

Area 4 – SHORELAND PROTECTION DISTRICT AREA

The Exeter Shoreland Protection District boundary includes land within 150 feet (horizontal distance) of the mean high water level of all perennial brooks within the Squamscott River watershed per §9.3.3.C 1.

Area 4 includes a total of 60,077 SF or 1.4 acres of shoreland buffer district between 100 and 150 feet as required for unnamed perennial streams in the shoreland district. Approximately 8,210 SF of permanent and 887 SF of temporary impact are proposed to this segment of the Shoreland Protection Zone representing 13.6 and 1.5 percent respectively of the total shoreland between 100 and 150 feet. The breakdown of buffer impacts (in SF) is as follows:

AREA	TOTAL (SF)	PERMANENT (SF)	TEMPORARY (SF)	COMMENT
4A	887	NA	887	Construction of Gravel Wetland 4
4B	2,852	2,852	NA	Dwelling on Lot 2
4C	2,466	2,466	NA	Dwelling on Lot 3
4D	2,892	2,892	NA	Driveway to Multifamily on Lot 1

Area 5 – SHORELAND PROTECTION DISTRICT AREA

The Exeter Shoreland Protection District boundary includes land within 300 feet (horizontal distance) of the Squamscott River and its fresh water major tributaries which includes Norris Brook to its confluence with Watson Brook per §9.3.3.C 1.

Area 5 includes a total of 420,802 SF or 9.6+ acres of shoreland buffer district between 150 and 300 feet along the Squamscott River and its major tributaries the shoreland district. Approximately 99,575 SF of permanent and 7,854 SF of temporary impact are proposed to this segment of the Shoreland Protection Zone representing 23.6 and 2 percent respectively of the total shoreland between 150 and 300 feet.

The breakdown of buffer impacts (in SF) is as follows:

AREA	TOTAL (SF)	PERMANENT (SF)	TEMPORARY (SF)	COMMENT
5A	5,951	NA	5,951	Coal Ash & Solid Waste Remediation
5B	3,741	3,741	NA	Dwellings / Grading on Lots 29-31
5C	7,665	7,665	NA	Driveway access Lot 35 (Improvement of existing Oak St Ext to Existing Home)
5D	46,486	46,486	NA	Rose Farm Lane and Dwellings on Proposed Lots 9-11, 37-39
5E	24,156	22,253	1,903	Rose Farm Lane, Dwelling on Lot 8
5F	19,430	19,430	NA	Multi-family dwelling on Proposed Lot 1

Conditions for Approval

The following section describes how the project meets the conditions for approval of a Conditional Use Permit found in §9.3.4.2.a-e.

Condition 9.3.4.G.2.a.

The proposed use will not detrimentally affect the surface water quality of the adjacent river or tributary, or otherwise result in unhealthful conditions.

The Exeter Shoreland Protection District is enforced from the "shoreline". Shoreline (for fresh water) is defined in §9.3.2.H as "the water's edge at the seasonal high water level". The seasonal high water level is defined in §9.3.2.G. as "the average annual high water elevation of a stream, brook, or river, including contiguous wetlands and floodplains". Therefore the 300 foot and 150 foot shoreland zones and associated 150 foot and 100 foot structure setbacks to Norris Brook and the unnamed perennial stream, respectively, extend from wetlands associated with the streams and surface waters, not the surface waters themselves. In other words, the shoreland zone is not comprised of wetlands as in some circumstances or municipalities, rather it is comprised entirely of uplands, and therefore, in combination with associated wetlands, which also have a demonstrated ability to trap sediments and filter runoff, among other functions that protect water quality, considerable protection is afforded surface waters in Exeter by virtue of local zoning.

Condition 9.3.4.G.2.b.

The proposed use will discharge no waste water on site other than that normally discharged by domestic waste water disposal systems and will not involve on-site storage or disposal of hazardous or toxic wastes as herein defined.

The existing dwellings are served by on-site individual effluent disposal systems. These systems are not of recent construction and do not meet current on-site sewage disposal system standards. The project has been designed to connect to the municipal sewage system and thus will not discharge waste water on site.

Condition 9.3.4.G.2.c.

The proposed use will not result in undue damage to spawning grounds and other wildlife habitat.

Norris Brook and the other unnamed perennial stream on this site generally lack the extensive spawning beds. The project has been designed to manage stormwater according to current regulations. The proposed stream crossing location does not alter the stream bed (or any spawning beds) directly. The crossing will utilize an open bottom culvert and stream simulation and will span the stream channel, providing opportunities for wildlife migration, therefore no excessive or adverse damage will be realized.

Condition 9.3.4.G.2.d.

The proposed use complies with the use regulations identified in Article 9.3.4 Exeter Shoreland Protection District Ordinance – Use Regulations and all other applicable sections of this article.

9.3.4 Use Regulations:

A. Minimum Lot Size: The minimum lot size within the Shoreland Protection District shall be the same as required in the underlying Zoning District and by applicable subdivision regulations for the Town.

The proposed minimum lot sizes comply with that required for the zoning districts involved, as influenced by the open space regulations. R-1 Low Density Single-Family and R-2 Single-Family require 15,000 square foot (SF) and 10,000 SF lots respectively.

B. Maximum Lot Coverage: Impervious surfaces, shall not cover more than ten percent (10%) of any lot or portion thereof within the Shoreland Protection District adjacent to the shoreline of the Exeter River, Squamscott River, Dearborn Brook, Water Works Pond, and Fresh River, unless a Conditional Use Permit is granted by the Planning Board under the terms of Article 9.3.4.G.2 Exeter Shoreland Protection District Ordinance – Conditional Use.

The project is not proposing impervious surfaces in excess of 10% on any lot, or portion thereof, within the shoreland protection district.

C. Building Setbacks: No building (except a structure permitted as a Conditional Use, under Article 9.3.4.G. Exeter Shoreland Protection District Ordinance – Conditional Use or a permitted use under Article9.3.4.I Permitted Uses) septic system or septic system leaching field, (except a repair or reconstruction) shall be constructed on or moved to a site within 300 feet from the shoreline of the Squamscott River, Dearborn Brook, Waterworks Pond, and Fresh River; within 150 feet from the shoreline of the Exeter River or the major tributaries of the Squamscott River and Exeter River as herein defined, or within 100 feet of the shoreline of perennial brooks and streams located within the Exeter Shoreland Protection District. A building setback of 150 feet upland from tidal marshes adjacent to the Squamscott River shall also be maintained.

The project is not proposing any new dwelling units within 150 feet of the shoreline of Norris Brook (regulated as a major tributary to the Squamscott River) nor is the project proposing any new dwelling units within 100 feet of the shoreline of the unnamed brook (identified as being perennial on some resources and therefore considered perennial according to §9.3.2.E). The project is proposing to retain the three (3) existing dwellings (one each on proposed Lots 39, 40 and 41) which fall within the 150 foot structure setback to Norris Brook. The impacts for Lots 40 and 41 are existing and have not been included in the calculations above as no additional grading or regrading of these lots is anticipated. The impacts for Lot 39 have been included in the calculations above (Areas 3B and 5D) as there will be regrading of the lot to accommodate nearby road construction and new driveway access.

D. Surface Alterations: Alteration of the surface configuration of land by the addition of fill or by dredging shall be permitted within 150 feet of the shoreline of the Exeter River, Squamscott River or their major tributaries only to the extent necessitated by a permitted or conditionally permitted use.

This application includes request for impacts to the shoreland district for road construction including impacts for crossing Norris Brook (Impact Area K) to access otherwise buildable areas. (By regulation, Norris Brook is a major tributary of the Squamscott River.) Roadway construction within the shoreland district is a permitted conditional use (§9.3.4.G.c.). The application also includes requests to alter land within the Shoreland Protection District for installation of stormwater management facilities and best management practices. Drainage structures within the shoreland district is a permitted conditional use (§9.3.4.G.d.) This application also includes earth moving activities associated with the remediation of existing solid and hazardous wastes on land adjacent to and overlooking Norris Brook. Hazardous materials remediation within the shoreland district is not identified as a permitted conditional use. We note however, that disposal of solid waste is a prohibited use (§9.3.4.F.1). We assume that the regulations intended to include hazardous materials storage and disposal as a prohibited use and

furthermore, that the town would ostensibly prefer to have solid and potentially hazardous wastes removed whenever possible, especially where they involve the shoreland zone, as this project is proposing. Finally, the application requests consideration for proposed grading within 150 feet associated with home construction (which otherwise meets the required structure setback) on Lots 1-3, 8 and 39. As noted above the residential structure on Lot 39 is existing. Home construction is a permitted use in the underlying zoning district as per §9.3.4.I.

> **E.** Vegetative Buffer: Alteration of natural vegetation or managed woodland within 75 feet of the shoreline of the Exeter River, Squamscott River or their major tributaries shall be permitted only to the extent necessitated by a permitted or conditionally permitted use.

The application is not requesting any consideration for removal of portions of the 75 foot natural vegetated buffer associated with grading for home construction. Home construction is a permitted use in the underlying district as per §9.3.4.I. Most of the impact to the vegetative buffer being requested (67,432 SF or 75% of the 89,440 SF Area 1 total) is associated with unavoidable impacts associated with the construction of Rose Fam Lane as needed to access buildable land located north of Norris Brook, which separates these buildable lands from other existing road infrastructure. Refer to Area 1 descriptions and Table 1 above for the summary of alteration.

> **F.** Prohibited Uses: The following uses shall not be permitted within the Exeter Shoreland Protection District:
>
> 1. Disposal of solid waste (as defined by the NH RSA §149-M) other than brush.
> 2. On site handling, disposal, bulk storage, processing or recycling of hazardous or toxic materials.

Neither of the above prohibited uses is being proposed by the project. Subject to the project approval by the Town of Exeter, the applicants intend to proceed with cleanup of portions of the site associated with historical contamination according to the remedial action plan as approved by the NHDES.

> 3. Disposal of liquid or leachable wastes, except from residential subsurface disposal systems, and approved commercial or industrial systems that are otherwise permitted by this article.

The project is not proposing the disposal of liquid or leachable wastes, including those from residential effluent disposal systems, as the project will be connected to the municipal sewage treatment system.

> 4. Buried storage of petroleum fuel and other refined petroleum products except as regulated by the NH Water Supply and Pollution Control Commission (Ws 411 Control of Non-residential Underground Storage and Handling of Oil and Petroleum Liquids). Storage tanks for petroleum products, if contained within basements, are permitted.

The project is not proposing exterior buried storage of petroleum fuel. Fuel for individual heating systems which involve home heating oil will be stored in basements. Propane or similar bulk gas products will be stored above ground where applicable. Restrictions to this effect can be placed in the Home Owners Association (HOA) documents. Please note that the subdivision will also be served by natural gas provided by Unitil.

5. Outdoor unenclosed or uncovered storage of road salt and other de-icing chemicals.

The project is not proposing unenclosed or uncovered storage of road salt or other de-icing products. A restriction to this effect can be placed in the HOA documents.

6. Dumping of snow containing road salt or other de-icing chemicals.

Removal of snow containing salt or other de-icing products will not be removed to, dumped or stockpiled in the shoreland zone. Language to this effect can be placed in the HOA documents.

7. Commercial animal feedlots.

8. Automotive service and repair shops; junk and salvage yards.

9. Dry cleaning establishments.

10. Laundry and car wash establishments not served by a central municipal sewer systems.

Construction of the project will naturally assure a prohibition on commercial animal feed lots, automotive service shops, junk/salvage yards, dry cleaning establishments and automobile washing establishments as well as laundry establishments, however, language to that effect can be written into the HOA documents.

11. Earth excavation as defined by NH RSA §155:E, within 150 feet of the Exeter River, Squamscott River or their major tributaries. It is prohibited to conduct said excavation within four feet of the Seasonal High Water Table.

The project is not proposing earth excavation as per NH RSA §155:E. The project is proposing earth work that, in excess of 100,000 SF aggregate, is jurisdictional under §485-A:17. The project is therefore applying to the NH Department of Environmental Services – Alteration of Terrain Bureau for an Alteration of Terrain Permit as required. Whereas the project is proposing earth moving in excess of one acre (43,560 SF), the project will also trigger the need for permit coverage under the National Pollution Discharge Elimination System – Construction General Permit. A Storm Water Pollution Prevention Program will be prepared and a Notice of Intent will be submitted prior to construction as required by the United States Environmental Protection Agency (USEPA). Copies of these documents will be provided to the town.

12. The use of fertilizer as defined in 2.2.30.

    a. Per the intent of this ordinance, this prohibition may be waived by the Planning Board to supplement restoration or the establishment of new landscaping. Applicants shall provide written justification and identify specific location(s) within the property where the request applies. Waivers granted will provide for temporary allowance, not to exceed one year.

2.2.30 Fertilizer: Any substance containing one or more recognized plant nutrients which is designed for use in promoting plant growth such as nitrogen, phosphorus and potassium. Fertilizer as defined shall not include vegetable compost, lime, limestone, wood ashes, or any nitrogen-free horticultural medium (e.g. vermiculite).

A prohibition on the use of fertilizers, as defined above in 2.2.30, can be included in the HOA documents for the project.

Condition 9.3.4.G.2.e.

The design and construction of the proposed use will be consistent with the intent of the purposes set forth in Article 9.3.1 Exeter Shoreland District Ordinance Authority and Purpose.

9.3 EXETER SHORELAND PROTECTION DISTRICT ORDINANCE

9.3.1 Authority and Purpose: Pursuant to NH RSA §674:16-21 the Town of Exeter hereby adopts the Exeter Shoreland Protection District and accompanying regulations in order to protect and promote public health, resource conservation and the general welfare and to:

A. Protect, maintain and enhance the water quality of the Exeter River, its tributaries and the Water Works Pond in the Town of Exeter, and to ensure the continued availability of a safe public water supply;

The project is not located within the Exeter River watershed or the watershed to Water Works Pond.

B. Protect, maintain and enhance the water quality of the Squamscott River and its tributaries in the Town of Exeter.

The project has been designed to comply with local and state regulations whenever possible and will therefore protect and maintain the quality of water within Norris Brook and the Squamscott River. The project will enhance the Squamscott River watershed by removing solid and potentially hazardous

materials from the site and by connecting to the municipal sewer system. The project will employ customary erosion and siltation control methods to minimize the migration of suspended solids from the site during construction. Storm water will be managed according to the latest standards associated with Alteration of Terrain program and USEPA rules. These programs require routine monitoring and status reports during construction until such time the site is deemed stable. The Alteration of Terrain Program requires development of an Operation and Maintenance Program to facilitate long-term maintenance of stormwater facilities. Maintenance of these facilities will be covered by the HOA.

C. Protect, maintain and enhance the water quality of the Fresh River and its tributaries in the Town of Exeter.

The project is not located within the watershed that contributes to the Fresh River.

D. Conserve and protect aquatic and terrestrial habitat associated with river areas as well as intertidal and riparian areas;

The project has been designed to avoid impacts to the shoreland zone where possible and minimize unavoidable impacts elsewhere. Retaining walls have been used in numerous locations to minimize filling associated with side slope grading for roadway construction. Open bottom culverts have been used to further minimize the need for filling at stream crossings. A multi-family dwelling unit is proposed on Lot 1 to limit alteration of the shoreland zone and will require a single driveway for access versus multiple driveways and impervious surfaces associated with earlier versions of the project design.

E. Preserve and enhance those recreational and aesthetic values associated with the natural shoreline and river environment, both fresh and salt;

F. Encourage those uses that can be appropriately located adjacent to shorelines.

Based upon input received from the Exeter Conservation Commission, the project is protecting 12.6± acres of common open space (including 6.3± acres of recreation area) via conservation easement and maintains access to the existing walking and mountain biking trail network in the area. Future access to the spring at this location is intended by the project during and after construction. Continued access to the spring will be addressed by HOA documents.

Professionals whose stamps appear on project site plans or other materials:

The surveyor and engineer of record for this project is T.F. Moran/ MSC. They may be reached via telephone at 603-431-2222.

The wetland & soil scientist of record for this project is Marc Jacobs. He may be reached via telephone at 603-686-5097.

The environmental scientist of record for the project is Stone Hill Environmental, Inc. They can be reached at 603-433-1935.

Marc E. Jacobs, *CSS, CWS, PWS, CPESC*
Professional Wetland / Soil Scientist
jacobs2wetsoil2004@yahoo.com

MEMORANDUM

VIA: First class mail/Certified/Facsimile/**Hand Delivery**/Overnight/E-mail

TO: Mr. David Sharples, Town Planner
Ms. Kristen Murphy, Conservation Agent

FROM: Marc Jacobs, CWS, PWS, CSS, CPESC

DATE: June 29, 2018

SUBJECT: Exeter Rose Farm, LLC

RE: Wetlands Conservation Overlay District Waiver

The following information is intended to support the request for waivers of aspects of the Wetland Conservation Overlay District regulations in specific locations of the proposed project according to Section 9.9.3 of the Exeter Site and Subdivision Regulations. Refer to the Town of Exeter Wetland Conservation District Area & Impacts Plan dated February 20, 2018 with revision dated June 29, 2018 for a graphic depiction of proposed impacts. The plan is included herein by reference and as attached. Where proposed, restoration of temporary wetland buffer impacts is described below for each wetland.

There are 355,638 square feet (SF) or 8.16 acres of local and state jurisdictional wetlands on the subject property, some of which are geographically isolated and some of which are contiguous to other wetlands located off site. The redevelopment of the site will directly and permanently impact 3,606 SF (0.08 acres) of locally jurisdictional wetland, which represents 1 percent of the total wetland acreage on site. (Of that total, 3,163 SF or 86 percent represents the unavoidable impact associated with construction of Rose Farm Lane as needed to provide access to buildable areas outside the various buffer zones.) Wetland impacts are described in greater detail below by impact area.

SUMMARY OF REQUIRED BUFFERS

Table 1 below from Exeter's Site Plan and Subdivision Regulations (§ 9.9.2) summarizes the required buffers to wetlands. Note that there are no prime or exemplary wetlands on site. The project is proposing to permanently alter 51,998 SF and temporarily alter 29,713 SF of wetland buffer. Tabulation of the total wetland buffer area on site not been calculated but if it were it is expected that the resulting ratio of total buffer on site to permanent buffer impacts would yield a similar ratio (1%) as total wetlands on site versus proposed direct wetland impacts. Wetland buffer impacts are described in greater detail below by impact area.

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TABLE 1

Wetlands categories and setbacks:

Wetland Category	No cut / No Disturbance Setback (1)	Parking Setback (2) Waste Water Systems Structural Setback
Prime Wetland	100' no cut/no disturb	125'
Exemplary Wetlands	50' no cut/no disturb buffer	75'
Vernal Pool (V.P. >/= 200 sf)	75' no cut/ no disturb buffer	100'
Wetlands with Very Poorly Drained (VPD) Soils	50' no cut/ no disturb buffer	75'
Wetlands with Poorly Drained	40' no cut/ no disturb buffer	75'
Inland Streams (incl. intermittent)	25' no cut/ no disturb buffer	75' (1)

IMPACT AREA DESCRIPTIONS

Wetland areas are labeled alphabetically A – N on the attached plans. Impacts are proposed to Wetland and Buffer Areas B, J, K, and M and are described below in alphabetical order as are impacts to the inland stream (IS). No direct or indirect / wetland buffer impacts are proposed to wetland areas A, I, L or N. Impacts are proposed to man-made geographically isolated Wetland Areas C – H, however these wetlands are not locally jurisdictional under zoning section 9.1.3.D. Wetland Areas C – H are jurisdictional under state regulations (as we have assumed they were not legally created or permitted as required or were created out of uplands and have become jurisdictional) and impacts to these areas will therefore be included in the state wetland permit application. Impacts are also summarized in Table 2 below.

Impact Area B

There are three temporary but no permanent impact areas proposed in Wetland Area B. The three temporary areas are associated with the remediation of coal ash / clinker and solid waste on the slopes overlooking and adjacent to the intermittent stream upstream (north) of Norris Brook and west of Oak Street Extension. Temporary Impact Area B1 (TIA B1) is 338 SF in size. Temporary Impact Area B2 (TIA B2) is 11 SF. Temporary Impact Area B3 (TIA B3) is 731 SF for a total of 1,080 SF. These areas will be restored post-remediation. The areas will loamed, sown with typical conservation seed mix and mulched. These areas will not be mowed or maintained, unless otherwise directed by NH Department of Environmental Services (NHDES) and required by the remedial action plan approval.

There will be four (4) areas of associated buffer impact totaling 26,150± SF. Three of the temporary wetland buffer impact areas, totaling 22,216± SF, are associated with the remediation of the coal ash / clinker and solid waste. The fourth area, 3,061± SF, is permanent and associated with the realignment

and improvement of a section of existing Oak Street Extension near where it will tie into Rose Farm Lane. There is also a small portion of permanent buffer impact (473 SF) associated with the construction of Gravel Wetland 1. The temporary buffer impacts outside of the gravel wetland are proposed to be restored post-construction.

Impact Area J

Impact Area J involves 531 SF of permanent impact to the buffer associated with regrading for the improvement of existing parking and turn-around area providing continued access to the spring. This wetland buffer impact is necessitated to a degree by the need to install a gate as required by the planning board to prohibit through-traffic from using Oak Street Extension.

Impact Area K

Wetland Area K is proposed for a total of five (5) direct impact areas, three of which are permanent and two of which are temporary, totaling 4,933 SF. The primary wetland and stream crossing at Norris Brook, Permanent Impact Area K (PIA K), associated with the proposed construction of Rose Fam Lane, which provides the sole access to otherwise buildable areas of the property under the zoning and subdivision regulations, will directly impact approximately 4,627 square feet (SF) of wetlands. PIA K results in approximately 3,163 SF of the impact. There are two associated Temporary Impact Areas (TIA K1 and TIA K2) totaling approximately 1,464 SF at this crossing. TIA K1 results in 749 SF of impact and TIA K2 results in 715 SF of impact as needed to provide temporary access for construction of the proposed retaining walls. TIA K1 and K2 will be restored in place post-construction). Restoration will involve seeding with a typical wetland seed mix.

Permanent Impact Area K1 (PIA K1) involves 286 SF of direct permanent impact associated with construction of the sewer pump station. Permanent Impact Area K2 (PIA K2) involves 20 SF of direct permanent impact associated with construction of the gravel wetland 4. (There are a total of four (4) gravel wetlands being proposed for management and treatment of stormwater.)

There will be five (5) areas of associated wetland buffer impact in Wetland K totaling 45,616± SF. Approximately 41,829± SF will be permanent and 3,787± SF will be temporary. The largest area of wetland buffer impact is associated with the crossing of Norris Brook as well as the construction of Gravel Wetlands 2, 3 and 4 on either side of Norris Brook. The permanent impact areas need to be maintained (including mowing) in perpetuity, so no restoration of the proposed wetland buffer is proposed beyond stabilizing the area with dense grassy vegetation to minimize erosion. The temporary buffer impact areas, outside of the right-of-way and easements, are to be restored post-construction. Restoration will involve loam, seeding with conservation seed mix according to the manufacturer's recommended rate and mulching. These areas will not be mowed or maintained otherwise.

Other areas of permanent buffer impact, 3,568± SF in size, are associated with the reconstruction, (slight) realignment and improvement of a section of existing Oak Street Extension near where it will tie into Rose Farm Lane. As this access will need to be maintained no wetland buffer restoration is proposed. (The remainder of Oak Street Extension will also be improved and resurfaced but it is our understanding that this work does not constitute buffer impact because the work is confined to the existing footprint.)

Finally, two small areas of wetland buffer impact, 633± SF and 1,019± SF in size, are associated with regrading for the improvement of the existing parking and turn-around areas providing continued access to the spring. No wetland buffer restoration is therefore proposed.

Impact Area M

Impact Area M involves one area of direct impact. Permanent Impact Area M (PIA M) involves 137± SF of impact to Wetland Area M for grading associated with construction of Gravel Wetland 4. There will be three (3) areas of associated wetland buffer impact totaling 8,700± SF. The largest area of wetland buffer impact (7,959 SF) is associated with the construction of Gravel Wetland 4. Approximately 5,390± SF will be permanent and 2,569± SF will be temporary. Drainage facilities within the permanent impact areas will need to be maintained (including mowing) in perpetuity, no restoration of the proposed wetland buffer is proposed beyond stabilizing the area with dense grassy vegetation to minimize erosion. The temporary buffer impact areas, outside of the right-of-way and easements, are to be restored post-construction. Restoration will involve loam, seeding with conservation seed mix according to the manufacturer's recommended rate and mulching. These areas will not be mowed or maintained.

There will be 466± SF of temporary wetland buffer impact associated with grading for the construction of Rose Farm Lane. There will be 275± SF of temporary wetland buffer impact associated with grading for the construction of the driveway as needed for access to the dwelling on Lot 2. Both temporary buffer impact areas are to be restored post-construction. Restoration will involve loam, seeding with conservation seed mix according to the manufacturer's recommended rate and mulching. These areas will not be mowed or maintained otherwise.

Inland Stream (IS) Impact Area

There is 373 linear feet (LF) of channel that confines an intermittent stream which discharges from Wetland Area M. Approximately 100 LF of that channel will be permanently impacted for construction of Rose Farm Lane. This section of the inland stream will be captured by the drainage system and piped beneath the road, discharging to a riprap apron below the road. There is 714 SF of associated buffer that will be permanently impacted by the construction of Rose Farm Lane. We have included the inland stream and buffer impacts in our application but this stream is not depicted on the USGS map as required by Exeter Zoning so it is technically not locally jurisdictional.

TABLE 2

TOWN OF EXETER WETLAND CONSERVATION DISTRICT WETLAND & 40'/50' NO CUT/NO DISTURBANCE BUFFER AREAS & IMPACTS TABLE

WETLAND	WETLAND AREA	TEMPORARY IMPACT	PERMANENT IMPACT	TEMPORARY BUFFER IMPACT	PERMANENT BUFFER IMPACT
A	11,857 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.
B	100,049 S.F.	1,080 S.F.	0 S.F.	22,616 S.F.	3,534 S.F.
I	668 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.
J	15 S.F.	0 S.F.	0 S.F.	0 S.F.	531 S.F.
K	185,163 S.F.	1,464 S.F.	3,469 S.F.	3,787 S.F.	41,829 S.F.
L	23,073 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.
M	12,359 S.F.	0 S.F.	137 S.F.	3,310 S.F.	5,390 S.F.
IS	(373 L.F.)	0 S.F.	(100 L.F.)	0 S.F.	714 S.F.
TOTAL:	333,184 S.F.	2,544 S.F.	3,606 S.F.	29,713 S.F.	51,998 S.F.

WETLAND WAIVER GUIDELINES

As per Exeter Site and Subdivision Regulations (§9.3.3) the following guidelines should be considered by the Planning Board if relief is requested. (It should be noted that the applicants were directed to apply for the wetland waiver; not applying for the waiver was not an option.)

1. The relative "value" of the wetland, including its ecological sensitivity, as well as its function within the greater hydrologic landscape shall be compared to the proposed impact.

A Wetland Functional Evaluation of the Exeter Rose Farm, LLC property was previously conducted by this office and a revised copy, one that elaborates on impact analysis and compensatory mitigation, is included with this filing. As compared to other wetlands on the site, the Rose Farm Lane wetland crossing will impact wetlands of relatively high value. This value is derived from groundwater discharge, floodflow alteration, sediment removal, wildlife habitat and uniqueness functions. The construction of Rose Farm Lane will likely impact the periphery of a floodplain forest as identified in the Exeter Natural Resources Inventory.

Several man-made isolated wetlands will also be altered during construction of the project, especially to remove hazardous materials and solid waste. These wetlands are not locally jurisdictional and are functioning at a very low level and therefore provide significantly less value as compared to other wetlands on site.

The construction of Rose Farm Lane will result in impacts to an inland channel that conveys a stream which flows intermittently from Wetland M. The channel is man-made by erosion that resulted from the clearing of trees as needed to create the field on Assessors Lot 205 off Forest Street which was used to stable horses for a period of time. The change in vegetative cover from forest to field resulted in an increase in the rate of runoff which scoured the current channel. The stream flows in direct response to storm events owing to the slowly permeable soils found in the field. The value of the stream is low as compared to other natural intermittent and perennial streams at this location.

2. A wetland scientist has conducted a "function and values" study of the wetlands and deemed that the wetlands under consideration will not be negatively impacted by the development.

The aforementioned Wetland Functional Analysis was used, in part, to prepare the Impact Analysis section of the Natural Resources Plan for the Exeter Rose Farm, LLC project. The wetlands beneath the proposed crossing of Norris Brook will be permanently impacted. While the wetlands complex along Norris Brook functions at a relatively high value overall, especially as compared to other wetlands on this site, it is noteworthy that groundwater discharge functions are performed minimally at the actual crossing location due to adjacent topography. Additionally, floodflow alteration and sediment removal functions will be maintained by the proposed box culvert as will wildlife migration capacity for smaller mammals and other wildlife by incorporating upland banks within the box culvert. Uniqueness functions are generally associated with the presence of the Jailhouse Spring, which is considered part of this wetland complex but will not actually be directly involved or impacted by the wetland crossing construction at Norris Brook. For these reasons adverse negative impacts are not expected. The

incidental wetland impacts associated with construction of the sewer pump station and gravel wetland 4 are outweighed by the overall benefits which will be provided by these improvements.

The isolated man-made wetland areas described above have been inspected and observed in a flooded condition on numerous occasions during the appropriate season to ascertain if they are providing habitat for species customarily associated with vernal pools and no evidence of use by breeding populations of reptiles or amphibians has been observed. Since these areas are not providing important wildlife habitat and are functioning at a very low level otherwise, negative impacts are not expected.

3. The Applicant has demonstrated that the use cannot be reasonably carried out on a portion or portions of the lot which are outside of the buffer.

The property is zoned for the proposed use. Norris Brook and associated wetlands bisect the Rose Farm property. As a result, there is no other access to the large area of otherwise buildable uplands on the north side of Norris Brook without a wetland crossing. Wetlands that are contaminated by hazardous materials which are proposed for remediation cannot or should not be avoided during cleanup.

4. The applicant has made a substantial effort to minimize the impacts to the buffer.

The applicant has designed the stream crossing to meet the current standards and regulations regarding stream crossings. The project will provide a box culvert that is 1.2 times bank full width with stream simulation. The project design minimizes unavoidable impacts by crossing Norris Brook and adjacent wetlands where topography is most suitable and at the narrowest location. The design also utilizes retaining walls to minimize side slope grading and the footprint that results, thus further minimizing wetland impacts. Finally, the project proposes no home construction or associated grading in the wetland buffer. Alterations to the wetland buffer are associated with other unavoidable work which includes remediation of hazardous wastes, construction of facilities to manage stormwater, construction of sewer infrastructure, construction of road access that meets town road design standards and improvement of existing road access.

5. Consideration of waivers requested for constructed drainage facilities within the no-disturbance buffer should be determined by all of the following:
   a) Assurance that the drainage facility has the most current water quality features that would provide measured reductions in potential pollutants typical to the proposed development,

The project is proposing stormwater drainage facilities as influenced by the results of on-site soil testing conducted by a Certified Soil Scientist. Based upon the result of those soil tests, proposed drainage facilities include gravel wetlands which are accepted by the NH Department of Environmental Services for their ability to properly treat stormwater prior to release and in so doing protect the quality of downstream water resources.

   b) That a reasonable effort has been made to keep the disturbance to a minimum,

c) Not more than 50% of the drainage structures are within the required buffer.

Regarding b) and c) above, stormwater drainage facilities are located adjacent to existing waterways to which treated stormwater is proposed to be released. This minimizes opportunities for erosion and sedimentation caused by long travel distances for stormwater discharge and is important on this site due to the typical slopes overlooking to Norris Brook as well as dominant soil types and textures. The project has been designed so that no more than 50% of drainage facilities are located within the required wetland buffer. Naturally occurring streams, channels, and wetlands are being used for the conveyance of runoff leaving the site as per §9.5.1.7 of Exeter's Site and Subdivision Regulations.

6. Recommendations from Exeter's Conservation Commission should be reviewed and considered.

The applicants intend to meet with the Exeter Conservation Commission (ECC) on July 10 for their input regarding this request for a waiver and we expect that the ECC will communicate their findings to the Exeter Planning Board.

7. The applicant has prepared a mitigation proposal, including revegetating any disturbed area within the buffer to mimic preconstruction conditions or better. The applicant may also propose an increase in wetland buffers elsewhere on the site that surround a wetland of equal or greater size, and of equal or greater functional value than the impacted wetland.

Temporary impact to the buffer will be restored as appropriate and as described above. Buffer zones to be restored generally involve the remediation area such as the former boiler and packing building area and areas graded outside of the right-of-way and easements for the construction of the road and drainage features. These areas will be sown with a conservation seed mix (at the manufacturer's recommended rate) and allowed to grow naturally with no mowing. The absence of mowing will permit the areas to quickly develop a shrub community and eventually a dense tree canopy. The applicants look forward to discussing other compensatory mitigation opportunities, as appropriate, with the Exeter Conservation Commission.

GENERAL INFORMATION

OWNER/APPLICANT:
TAX MAP 54 LOTS 5, 6, & 7
EXETER ROSE FARM, LLC
953 ISLINGTON STREET – #23D
PORTSMOUTH, NH 03801

TAX MAP 63 LOT 205
BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS
1 FOREST STREET
EXETER, NH 03833

RESOURCE LIST:

PLANNING DEPARTMENT
10 FRONT STREET
EXETER, NH 03833
(603) 773–6112
DAVID SHARPLES, TOWN PLANNER

DEPARTMENT OF PUBLIC WORKS
13 NEWFIELDS ROAD
EXETER, NH 03833
(603) 773–6157
JENNIFER PERRY, PUBLIC WORKS DIRECTOR

WETLAND & SOIL SCIENTIST
MARC JACOBS
PO BOX 417
GREENLAND, NH 03840
(603) 686–5097

ENVIRONMENTAL CONSULTANTS
STONEHILL ENVIRONMENTAL, INC.
600 STATE STREET, SUITE 2
PORTSMOUTH, NH 03801
(603) 433–1935

ATTORNEYS
HOEFLE, PHOENIX, GORMLEY & ROBERTS P.A.
127 PARROTT AVENUE
PORTSMOUTH, NH 03801
(603) 436–0666

AERIAL TOPOGRAPHY
WSP PARSONS BRINKERHOFF
9 TROLLEY CROSSING ROAD
CHARLTON, MA 01507
(508) 248–1970

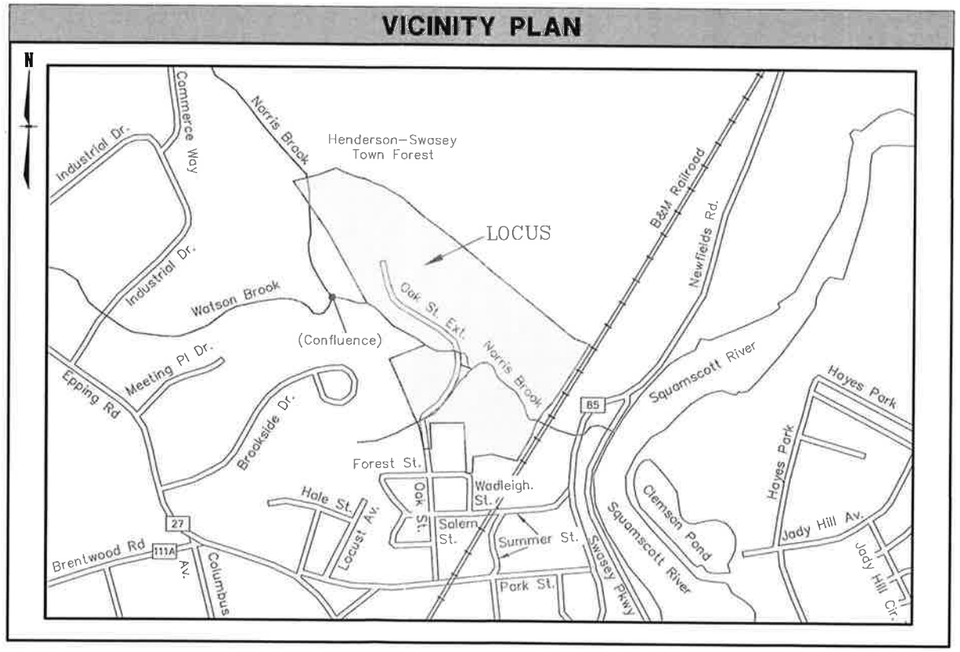
TOWN OF EXETER
WETLAND & SHORELAND IMPACT PLANS

FOR AN OPEN SPACE DEVELOPMENT
"EXETER ROSE FARM"

OAK STREET EXTENSION & FOREST STREET
EXETER, NEW HAMPSHIRE
JUNE 29, 2018

INDEX OF SHEETS

VICINITY PLAN



TFM MSC A division of TFMoran, Inc.
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431–2222
Fax (603) 431–0910
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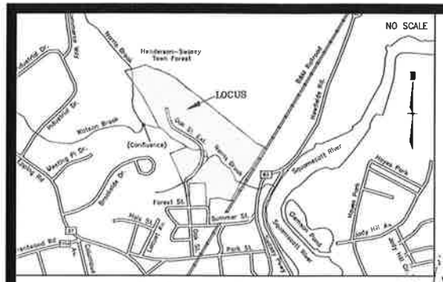


VICINITY PLAN

NOTES:

1. THE SUBJECT PARCELS ARE SHOWN ON THE TOWN OF EXETER ASSESSOR'S MAP 54 AS LOTS 5, 6 & 7 AND MAP 63 LOT 205.
2. OWNERS OF RECORD/APPLICANT:

MAP 54 LOT 5	MAP 54 LOT 6
EXETER ROSE FARM, LLC 24 OAK STREET EXTENSION EXETER, NH 03833 RCRD BK.5840 PG.2102 (603) 425-8598	EXETER ROSE FARM, LLC 24 OAK STREET EXTENSION EXETER, NH 03833 RCRD BK.5840 PG.2102 (603) 425-8598
MAP 54 LOT 7	**MAP 63 LOT 205**
EXETER ROSE FARM, LLC 24 OAK STREET EXTENSION EXETER, NH 03833 RCRD BK.5840 PG.2104 (603) 425-8598	BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS 1 FOREST STREET EXETER, NH 03833 RCRD BK.#5574 PG.#2843 (603) 502-7175

3. TOTAL AREA:
   2,176,025± S.F.
   (49.9547± ACRES)
4. THE SUBJECT PARCELS ARE LOCATED IN THE R-1 LOW DENSITY SINGLE FAMILY, R-2 SINGLE FAMILY, AND R-4 MULTI-FAMILY ZONING DISTRICTS AND PARTIALLY LOCATED IN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT AND THE WETLANDS CONSERVATION AND FLOOD HAZARD OVERLAY DISTRICTS.
5. DENSITY AND DIMENSIONAL REGULATIONS:

	R-1	R-2	R-4 (DETACHED SINGLE FAMILY)
MINIMUM LOT AREA:			NA
(NO MUNICIPAL WATER & SEWER)	2 ACRES	1 ACRES	
(MUNICIPAL WATER & SEWER)	40,000 S.F.	15,000 S.F.	12,000 S.F.
(DWELLING UNIT)	40,000 S.F.	15,000 S.F.	12,000 S.F.
MINIMUM LOT WIDTH:	150'	100'	100'
MINIMUM LOT DEPTH:	150'	100'	100'
MAXIMUM HEIGHT:	35'/3 STORIES	35'/3 STORIES	35'/3 STORIES
MINIMUM YARD SETBACKS:			
FRONT YARD:	25'	25'	25'
SIDE YARD:	15'/30'	15'/30'	15'/30'
REAR YARD:	25'	25'	25'
MAXIMUM BUILDING COVERAGE:	15%*	25%*	25%*
MINIMUM OPEN SPACE:	80%**/70%	60%**/40%	30%

*FOR AREAS WITHIN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT THE MAXIMUM LOT COVERAGE IS 10% (SEE SECTION 9.3.4.B)
**FOR LOTS USING SEPTIC SYSTEMS
PER THE TOWN OF EXETER, N.H. ZONING ORDINANCE, SECTION 4.3.

6. THE HORIZONTAL DATUM IS REFERENCED TO NORTH AMERICAN DATUM OF 1983 (NAD 83 (2011)) PER STATIC GPS OBSERVATIONS. THE VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), GEOID 12A PER STATIC GPS OBSERVATIONS. THE CONTOUR INTERVAL IS 2 FEET.
7. THE SUBJECT PARCELS ARE PARTIALLY LOCATED IN SPECIAL FLOOD HAZARD AREA (SFHA) ZONE AE (EL.8) & ZONE X AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP NUMBER 33015C0402E WITH AN EFFECTIVE DATE OF MAY 17, 2005.
8. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
9. THE PURPOSE OF THIS PLAN IS TO SHOW THE CURRENT EXISTING FEATURES AND TOPOGRAPHY OF TAX MAP 54 LOTS 5, 6 & 7, AND TAX MAP 63 LOT 205. SEE SHEET C-02 FOR CULVERT TABLE AND PLAN REFERENCES FOR REVIEW BY THE TOWN OF EXETER CONSERVATION COMMISSION.
10. FIELD SURVEY COMPLETED BY TODD C. EMERSON AND NICK J. MORTON IN JANUARY 2016 AND JULY 2017 USING A TOPCON DS103 AND TOPCON TESLA DATA COLLECTOR, A TOPCON MG-A5 BACKPACK GPS UNIT AND A TOPCON HYPER SR STATIC GPS UNIT. AERIAL TOPOGRAPHY WAS PROVIDED BY WSP, PARSONS BRINKERHOFF OF CHARLTON, MA IN MAY 2016.
11. THE BOUNDARY RUNS ALONG THE BROOK FROM POINT "A" TO POINT "B". THE TOTAL AREA WAS DETERMINED USING THE CENTERLINE OF THE BROOK AS LOCATED BY MSC IN JANUARY 2016.
12. UTILITY LINES SHOWN HEREON ARE A COMPILATION OF FIELD LOCATIONS, RECORD PLANS AND DIGITIZED PER THE TOWN OF EXETER GIS WEB SITE AND ARE APPROXIMATE ONLY. CONTACT DIGSAFE @ 1-888-DIG-SAFE AND THE TOWN OF EXETER DEPARTMENT OF PUBLIC WORKS TO VERIFY UTILITIES.
13. MANMADE AND NATURAL JURISDICTIONAL WETLAND BOUNDARIES WERE DELINEATED BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, AND JON BALANOFF IN DECEMBER 2015 ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS – WETLANDS DELINEATION MANUAL; THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES – WETLANDS BUREAU – ENV WT 100-900 AND THE TOWN OF EXETER ZONING. PREDOMINANT HYDRIC SOILS WERE IDENTIFIED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 3, APRIL 2004 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 7, 2010. THE INDICATOR STATUS OF HYDROPHYTIC VEGETATION WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS – NORTHCENTRAL AND NORTHEAST 2014 REGIONAL WETLAND PLANT LIST. COPIES OF SITE PLANS DEPICTING THE WETLAND DELINEATION WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIMDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS LOCATION.
14. WETLANDS CONTAINING POORLY DRAINED SOILS ARE SUBJECT TO A 40' NO CUT/NO DISTURBANCE SETBACK. WETLANDS CONTAINING VERY POORLY DRAINED (VPD) SOILS ARE SUBJECT TO A 50' NO CUT/NO DISTURBANCE SETBACK. IN AN EFFORT TO SIMPLIFY SETBACKS ON THIS PLAN, A 50' NO CUT/NO DISTURBANCE SETBACK HAS BEEN APPLIED TO ALL WETLANDS REGARDLESS OF SOIL TYPE, EXCEPT FOR WETLAND AREA M (SEE SHEET C10). A WETLAND CONTAINING POORLY DRAINED SOILS. THE APPLICATION OF THE 50' NO CUT/NO DISTURBANCE SETBACK ON THIS PLAN SHOULD NOT BE CONSIDERED A DETERMINATION OF VERY POORLY DRAINED (VPD) VERSUS POORLY DRAINED SOILS.
15. THE FORMER GREENHOUSE AREA AND THE FORMER BOILER & PACKING BUILDINGS AREA ARE THE SUBJECT OF NHDES SITE #201203003. SEE REMEDIAL ACTION PLAN (RAP) PREPARED BY STONEHILL ENVIRONMENTAL, INC. (CURRENTLY UNDER REVIEW BY NHDES) FOR DETAILS.
    CONCEPTUAL REMEDIATION PLAN:
    A: FORMER GREENHOUSE AREA – SHALLOW SOIL CONTAINING LEAD CONCENTRATIONS EXCEEDING THE NHDES STANDARD APPLICABLE TO RESIDENTIAL PROPERTIES WILL BE REMOVED AND PROPERLY DISPOSED OF AT AN OFF-SITE FACILITY.
    B: FORMER BOILER & PACKING BUILDINGS AREA – SOLID WASTES WILL BE IDENTIFIED, REMOVED AND PROPERLY DISPOSED OF. CONCRETE AND BRICK REMOVED FROM THE SOLID WASTE AREA MAY BE CRUSHED AND USED AS ROAD BASE. COAL ASH/CLINKER WILL BE CONSOLIDATED IN THE FORMER PACKING BUILDING AREA, CAPPED AND COVERED.
    C. MANMADE RETENTION BASIN #4 – SHALLOW SOIL CONTAINING LEAD CONCENTRATIONS EXCEEDING THE NHDES STANDARD APPLICABLE TO RESIDENTIAL PROPERTIES WILL BE REMOVED AND PROPERLY DISPOSED AT AN OFF-SITE DISPOSAL FACILITY.
16. FULL AND/OR PARTIAL WAIVERS PERTINENT TO THE EXISTING SITE CONDITIONS PLAN ARE REQUESTED FROM SITE PLAN REVIEW AND SUBDIVISION REGULATIONS FOR THE TOWN OF EXETER SECTIONS:
    (1) 7.4.7 (PARTIAL WAIVER)–REGARDING THE LOCATION OF SIGNIFICANT TREES.
    (2) 7.4.10–REGARDING A HIGH INTENSITY SOIL SURVEY (HISS) OF ENTIRE SITE (REQUEST FOR A SITE SPECIFIC SOILS MAP TO BE USED INSTEAD).
    (3) 7.4.15 (PARTIAL WAIVER)–REGARDING HEIGHTS OF ALL EXISTING STRUCTURES.

LEGEND:

APPROX	APPROXIMATE
I	INDUSTRIAL
TBR	TO BE REMOVED
AC	ASBESTOS CONCRETE
PP	PLASTIC PIPE
EM	ELECTRIC METER
ELEV.	ELEVATION
HW	HARD WOOD
D1	DRAINAGE LABEL
MM	MANMADE
N/F	NOW OR FORMERLY
R-1	LOW DENSITY RESIDENTIAL ZONING DISTRICT
R-2	SINGLE FAMILY RESIDENTIAL ZONING DISTRICT
R-4	MULTI-FAMILY RESIDENTIAL ZONING DISTRICT
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
R.O.W.	RIGHT OF WAY
S.F.	SQUARE FEET
SR&SR	SITE PLAN REVIEW AND SUBDIVISION REGULATIONS
SFHA	SPECIAL FLOOD HAZARD AREA
SW	SURFACE WATER
TYP.	TYPICAL
UP	UTILITY POLE
W/W	WITH WIRE
ZO	ZONING ORDINANCE

LEGEND:

UTILITY POLE
HYDRANT
WELL
GAS VALVE
WATER VALVE
WATER SHUT OFF
CATCH BASIN
SEWER MANHOLE
DRAIN MANHOLE
DECIDUOUS TREE
CONIFEROUS TREE
STONE WALL
DRAIN LINE
SEWER LINE
WATER LINE
GAS LINE
OVERHEAD UTILITIES
BOUNDARY LINE
BROOK
EDGE OF WETLANDS
PERENNIAL STREAM
INTERMITTENT STREAM
40/50' NO CUT/NO DISTURBANCE SETBACK (S&SR: SECTION 9.9.2)
75' STRUCTURE SETBACK (S&SR: SECTION 9.9.2)
100'/150' BUILDING SETBACK (ZO: SECTION 9.3.4.C)
YARD SETBACK (ZO: SECTION 4.3)
SPECIAL FLOOD HAZARD AREA BOUNDARY ZONE AE
BOX WIRE FENCE
TREE LINE
WETLANDS AND SURFACE WATER
EASEMENT
EXISTING PAVEMENT
FORMER GREENHOUSE, BOILER & PACKING BUILDINGS AREA

TOTAL AREA
2,176,025± S.F.
(49.9547± ACRES)

Graphic Scale: 100 50 25 0 100

TFM / MSC (A division of TFMorton, Inc.)	Civil Engineers Structural Engineers Traffic Engineers Land Surveyors Landscape Architects Scientists	170 Commerce Way, Suite 102 Portsmouth, NH 03801 Phone (603) 431-2222 Fax (603) 431-0910 www.mscengineers.com			
FILE	47175.00	DR BMK	531 & 539	C-01	
		CK JCC CADFILE	47175.00_EC		

NO.	DATE	DESCRIPTION	DR	CK
4	06/29/18	REVISED PER TRC COMMENTS	BMK	JCC
3	2/20/18	NO REVISIONS THIS SHEET	BMK	JCC
2	10/31/17	UPDATED BOILER & PACKING BUILDINGS AREA	BMK	BMK
1	9/26/17	REVISED PER TRC COMMENTS	DR	CK

TAX MAP 54 LOTS 5, 6 & 7 AND MAP 63 LOT 205

EXISTING SITE CONDITIONS PLAN

OAK STREET EXTENSION & FOREST STREET
EXETER, NEW HAMPSHIRE, COUNTY OF ROCKINGHAM
OWNED BY
EXETER ROSE FARM, LLC & THE
BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS
PREPARED FOR
EXETER ROSE FARM, LLC

SCALE: 1"=100' **AUGUST 15, 2017**

Jun 29, 2018 - 1:12pm - F:\MSC Projects\47175 - Oak Street Extension - Exeter\47175.00 - Baker Properties\47175.00 C3D\Survey\Drawings\47175-00_C01-C02_Existing Conditions.dwg

NOTES:

1. THE PARCELS ARE AS SHOWN ON THE TOWN OF EXETER ASSESSOR'S MAP 54 AS LOTS 5, 6 & 7 AND MAP 63 LOT 205.

2. OWNERS OF RECORD:

MAP 54 LOT 5
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2104
(603) 425-8598

MAP 54 LOT 6
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2104
(603) 425-8598

MAP 54 LOT 7
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2102
(603) 425-8598

MAP 63 LOT 205
BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUST
1 FOREST STREET
EXETER, NH 03833
RCRD BK.4574 PG.2843
(603) 502-7175

3. TOTAL PARCEL AREA:
   2,176,025± S.F.
   (49.95± ACRES)

4. THE SUBJECT PARCELS ARE LOCATED IN THE R-1 LOW DENSITY SINGLE FAMILY, R-2 SINGLE FAMILY, R-4 MULTI-FAMILY ZONING DISTRICTS AND PARTIALLY LOCATED IN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT, AND THE WETLANDS CONSERVATION AND FLOOD HAZARD OVERLAY DISTRICTS.

5. DENSITY AND DIMENSIONAL REGULATIONS:

	R-1	R-2	R-4 (DETACHED SINGLE FAMILY)
MINIMUM LOT AREA:			
(NO MUNICIPAL WATER & SEWER)	2 ACRES	1 ACRES	NA
(MUNICIPAL WATER & SEWER)	40,000 S.F.	15,000 S.F.	12,000 S.F.
(DWELLING UNIT)	40,000 S.F.	15,000 S.F.	12,000 S.F.
MINIMUM LOT WIDTH:	150'	100'	100'
MINIMUM LOT DEPTH:	150'	100'	100'
MAXIMUM HEIGHT:	35'/3 STORIES	35'/3 STORIES	35'/3 STORIES
MINIMUM YARD SETBACKS:			
FRONT YARD:	25'	25'	25'
SIDE YARD:	15'/30'	15'/30'	15'/30'
REAR YARD:	25'	25'	25'
MAXIMUM BUILDING COVERAGE:	15%*	25%*	25%*
MINIMUM OPEN SPACE:	80%**/70%	60%**/40%	30%

*FOR AREAS WITHIN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT THE MAXIMUM LOT COVERAGE IS 10% (SEE SECTION 9.3.4.B)
**FOR LOTS USING SEPTIC SYSTEMS
PER THE TOWN OF EXETER, N.H. ZONING ORDINANCE, SECTION 4.3.

OPEN SPACE DEVELOPMENT***
INTERNAL DIMENSIONAL REQUIREMENTS:

MINIMUM RIGHT OF WAY FRONTAGE:	50'	
FRONT YARD SETBACK:	25'	
SIDE YARD SETBACK:	15'	
REAR SETBACK:	20'	
MINIMUM LOT SIZE:	15,000 SF*	10,000 SF**

*IN R-1 ZONE
**IN R-2 & R-4 ZONES
PER THE TOWN OF EXETER, N.H. ZONING ORDINANCE, SECTION 7.5.6.
***THE TOWN OF EXETER, N.H. ZONING ORDINANCE, SECTION 4.3, SCHEDULE II NOTE 19 STATES "FOR PROPOSED SUBDIVISIONS OF AN EXISTING LOT OF RECORD HAVING A TOTAL COMBINED AREA OF 20 OR GREATER ACRES, OPEN SPACE DEVELOPMENT PURSUANT TO ARTICLE 7 IS REQUIRED UNLESS WAIVED BY THE EXETER PLANNING BOARD."

6. THE HORIZONTAL DATUM IS REFERENCED TO NORTH AMERICAN DATUM OF 1983 [NAD 83 (2011)] AND THE VERTICAL DATUM IS RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), GEOID 12A. CONTOUR INTERVAL IS 2 FEET.

7. THE SUBJECT PARCELS ARE PARTIALLY LOCATED IN SPECIAL FLOOD HAZARD AREA ZONE AE (EL.8) & SPECIAL FLOOD HAZARD AREA ZONE X AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP NUMBER 33015C0402E" WITH AN EFFECTIVE DATE OF MAY 17, 2005.

EXISTING CULVERT TABLE				
PIPE #	PIPE SIZE	PIPE TYPE	INVERT ELEVATION IN	INVERT ELEVATION OUT
D1	UNKNOWN	CMP	27.80'	26.97'
D2	12"	CMP	27.67'	23.61'
D3	24"	RCP	19.21'	18.52'
D4	36"	RCP	10.83'	9.79'
D5	12"	CMP	25.24'	19.37'
D6	8"	CMP	RIM=33.98'	24.08'
D7	12"	RCP	UNKNOWN	36.08'
D8	12"	CMP	UNKNOWN	32.49'
D9	18"	CMP	17.67'	17.54'
D10	18"	CMP	17.85'	17.66'
D11	12"	CMP	UNKNOWN	22.87'
D12	36"	RCP	RIM = 37.09'	21.54'
D13	12"	RCP	29.60'	28.54'

PLAN REFERENCES:

1. "SUBDIVISION OF LAND FOR EXETER ROSE FARMS INC. IN EXETER, N.H." BY PARKER SURVEY ASSOCIATES, INC. EXETER & SEABROOK, N.H. DATED JAN., 1980, REVISED MARCH, 1980. RCRD PLAN #D-9921.
2. "PLAT OF LAND FOR BENJAMIN J. DAGOSTINO IN EXETER, N.H." BY PARKER SURVEY ASSOCIATES, INC. EXETER & SEABROOK, N.H. DATED NOV. 1977. RCRD PLAN #C-8555.
3. "HOUSE LOT OF DAGOSTIO EXETER, N.H." BY JOHN H. DUDLEY SURVEYOR. DATED OCT. 1961. RCRD PLAN #03300.
4. "LAND IN EXETER, N.H. BOSTON & MAINE R.R. -TO- WALTER S. CARLISLE" BY F.B. ROWELL, ENGINEER OF REAL ESTATE, DATED AUG. 1913. RCRD PLAN #00492.
5. "SUBDIVISION PLAN OF LAND IN EXETER, N.H. PREPARED FOR RICHARD K. BENDETSON, TRUSTEE OF OAKLANDS TRUST 82 ATLANTIC AVE. BOSTON, MA." BY DAVIS, BENOIT & TESSIER, INC. DATED JULY 18, 1984. RCRD PLAN #D-12719.
6. "BOUNDARY PLAN OF LAND OF MARY E. ZARNOWSKI FOR OAKLAND HEIGHTS REALTY TRUST OAKLAND HEIGHTS IN EXETER, N.H. JOSEPH S. DURSO, LOUIS J. MANNO, TRUSTEES EPPING ROAD, EXETER, N.H." BY DAVIS, BENOIT & TESSIER, INC. DATED NOVEMBER 21, 1973. RCRD PLAN #D-4179.
7. "SUBDIVISION OF LAND FOR BENJAMIN & JOAN DAGOSTINO FOREST STREET & WADLEIGH STREET EXETER, N.H." BY E.J. COTE & ASSOCIATES INC. LAND SURVEYORS. DATED SEPTEMBER 17, 2004. WITH REVISION 2 DATED 12-9-04. RCRD PLAN #D-32344.
8. "PLAN SHOWING EASEMENT FOR DRAINAGE FACILITIES ACROSS LANDS OF B. DAGOSTINO & P. BERGERON WADLEIGH STREET EXETER, NEW HAMPSHIRE." BY JONES & BEACH ENGINEERS, INC. DATED 6/13/83. RCRD PLAN #C-11867.
9. "SUBDIVISION OF LAND EXETER, N.H. FOR THE ESTATE OF: LEONA D. HENDERSON" BY JOHN W. DURGIN ASSOCIATES, INC. DATED JULY 11, 1985. RCRD PLAN #D-13883.
10. "HENDERSON-SWASEY PARK EXETER, N.H. OWNER EXETER CONSERVATION COMMISSION" BY ROGER P. SLOAN SURVEYOR. DATED APRIL 30, 1973. RCRD PLAN #D-4046.
11. "CONSOLIDATION & RESUBDIVISION PLAN, EXETER INDUSTRIAL PARK, PREPARED FOR WILLEY CREEK DEVELOPMENT COMPANY, EXETER, NH", BY HOLDEN ENGINEERING & SURVEYING INC. DATED 9-9-86 WITH REVISION 2 DATED 12-4-86. RCRD PLAN #D-15807.
12. "STANDARD BOUNDARY SURVEY, OAK STREET EXTENSION, EXETER, NEW HAMPSHIRE, COUNTY OF ROCKINGHAM, OWNED BY FRANK & MARY DAGOSTINO HEIRS, EXETER ROSE FARM & FRANK A. & BETTY JANE DAGOSTINO, PREPARED FOR EXETER ROSE FARM, LLC" PREPARED BY MSC, A DIVISION OF TFMORAN, INC AND DATED JULY 31, 2017. RCRD PLAN #D-40288.

TAX MAP 54 LOTS 5, 6 & 7 AND MAP 63 LOT 205

EXISTING SITE CONDITIONS DETAILS

OAK STREET EXTENSION & FOREST STREET
EXETER, NEW HAMPSHIRE, COUNTY OF ROCKINGHAM
OWNED BY
EXETER ROSE FARM, LLC & THE
BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS
PREPARED FOR
EXETER ROSE FARM, LLC

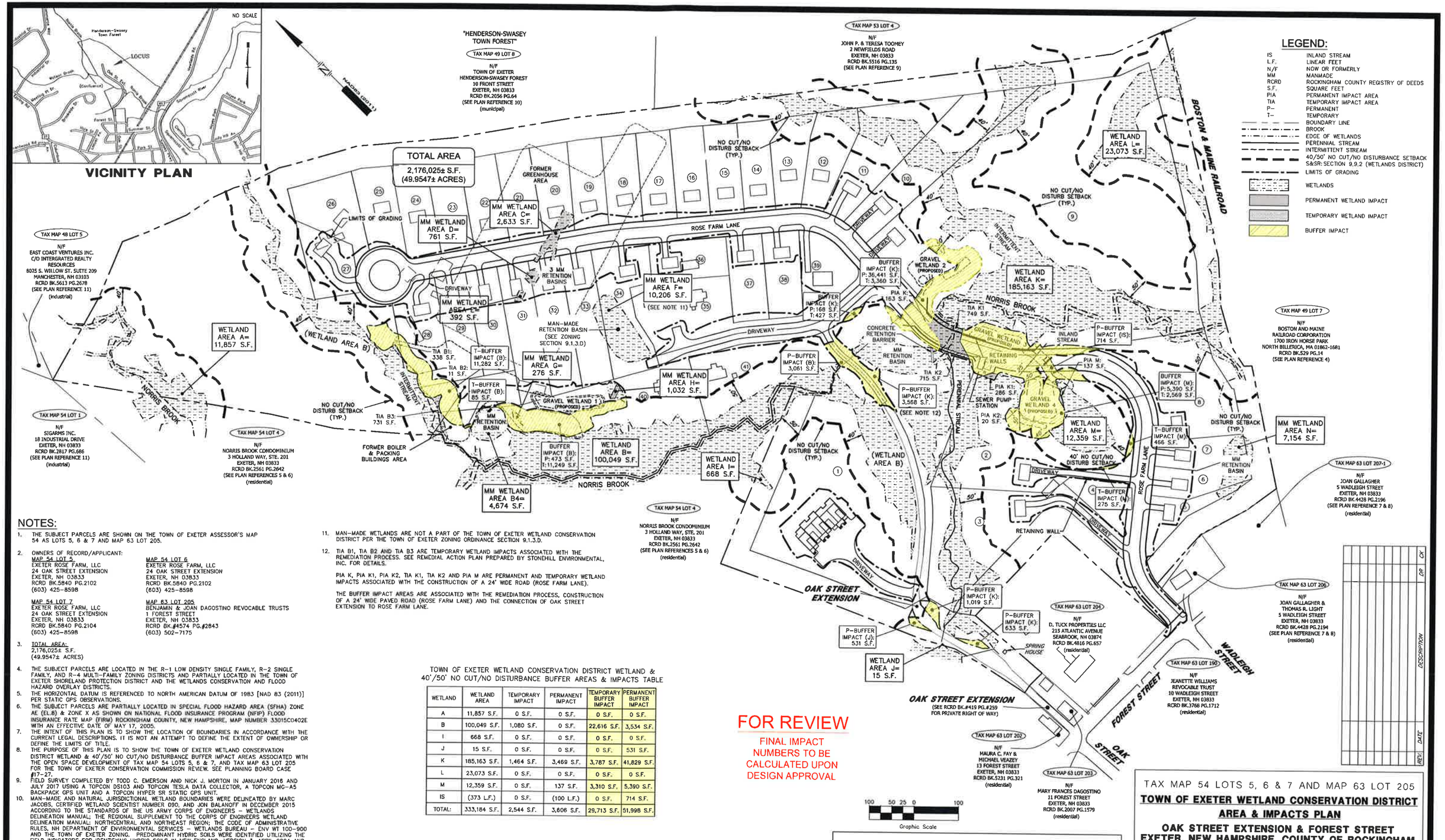
AUGUST 15, 2017

REV	DATE	DESCRIPTION	DR	CK
4	06/29/18	NO REVISIONS THIS SHEET	BMK	JCC
3	2/20/18	NO REVISIONS THIS SHEET	BMK	JCC
2	10/31/17	NO REVISIONS THIS SHEET	BMK	JCC
1	9/26/17	REVISED PER TRC COMMENTS	NJM	BMK

TFM
MSC
A division of TFMoran, Inc
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.mscengineers.com

FILE	DR	CK	FB	CADFILE	
47175.00	BMK	JCC	-	47175.00_EC-D1	C-02

VICINITY PLAN



NOTES:

1. THE SUBJECT PARCELS ARE SHOWN ON THE TOWN OF EXETER ASSESSOR'S MAP 54 AS LOTS 5, 6 & 7 AND MAP 63 LOT 205.
2. OWNERS OF RECORD/APPLICANT:

   MAP 54 LOT 5
   EXETER ROSE FARM, LLC
   24 OAK STREET EXTENSION
   EXETER, NH 03833
   RCRD BK.5840 PG.2102
   (603) 425-8598

   MAP 54 LOT 6
   EXETER ROSE FARM, LLC
   24 OAK STREET EXTENSION
   EXETER, NH 03833
   RCRD BK.5840 PG.2102
   (603) 425-8598

   MAP 54 LOT 7
   EXETER ROSE FARM, LLC
   24 OAK STREET EXTENSION
   EXETER, NH 03833
   RCRD BK.5840 PG.2104
   (603) 425-8598

   MAP 63 LOT 205
   BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS
   1 FOREST STREET
   EXETER, NH 03833
   RCRD BK.#4574 PG.#2843
   (603) 502-7175
3. TOTAL AREA:
   2,176,025± S.F.
   (49.9547± ACRES)
4. THE SUBJECT PARCELS ARE LOCATED IN THE R-1 LOW DENSITY SINGLE FAMILY, R-2 SINGLE FAMILY, AND R-4 MULTI-FAMILY ZONING DISTRICTS AND PARTIALLY LOCATED IN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT AND THE WETLANDS CONSERVATION AND FLOOD HAZARD OVERLAY DISTRICTS.
5. THE HORIZONTAL DATUM IS REFERENCED TO NORTH AMERICAN DATUM OF 1983 [NAD 83 (2011)] PER STATIC GPS OBSERVATIONS.
6. THE SUBJECT PARCELS ARE PARTIALLY LOCATED IN SPECIAL FLOOD HAZARD AREA (SFHA) ZONE AE (EL.8) & ZONE X AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP NUMBER 33015C0402E WITH AN EFFECTIVE DATE OF MAY 17, 2005.
7. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
8. THE PURPOSE OF THIS PLAN IS TO SHOW THE TOWN OF EXETER WETLAND CONSERVATION DISTRICT WETLAND & 40'/50' NO CUT/NO DISTURBANCE BUFFER IMPACT AREAS ASSOCIATED WITH THE OPEN SPACE DEVELOPMENT OF TAX MAP 54 LOTS 5, 6 & 7, AND TAX MAP 63 LOT 205 FOR THE TOWN OF EXETER CONSERVATION COMMISSION REVIEW. SEE PLANNING BOARD CASE #17-27.
9. FIELD SURVEY COMPLETED BY TODD C. EMERSON AND NICK J. MORTON IN JANUARY 2016 AND JULY 2017 USING A TOPCON DS103 AND TOPCON TESLA DATA COLLECTOR, A TOPCON MG-A5 BACKPACK GPS UNIT AND A TOPCON HYPER SR STATIC GPS UNIT.
10. MAN-MADE AND NATURAL JURISDICTIONAL WETLAND BOUNDARIES WERE DELINEATED BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, AND JON BALANOFF IN DECEMBER 2015 ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS – WETLANDS DELINEATION MANUAL; THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES – WETLANDS BUREAU – ENV WT 100-900 AND THE TOWN OF EXETER ZONING. PREDOMINANT HYDRIC SOILS WERE IDENTIFIED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 3, APRIL 2004 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 7, 2010. THE INDICATOR STATUS OF HYDROPHYTIC VEGETATION WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS – NORTHCENTRAL AND NORTHEAST 2014 REGIONAL WETLAND PLANT LIST. POTENTIAL VERNAL POOLS WERE EVALUATED ACCORDING TO ENV-WT 101.106, ENV-WT 101.75 AND ENV-WT 101.86. COPIES OF SITE PLANS DEPICTING THE WETLAND DELINEATION WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS LOCATION.
11. MAN-MADE WETLANDS ARE NOT A PART OF THE TOWN OF EXETER WETLAND CONSERVATION DISTRICT PER THE TOWN OF EXETER ZONING ORDINANCE SECTION 9.1.3.D.
12. TIA B1, TIA B2 AND TIA B3 ARE TEMPORARY WETLAND IMPACTS ASSOCIATED WITH THE REMEDIATION PROCESS. SEE REMEDIAL ACTION PLAN PREPARED BY STONEHILL ENVIRONMENTAL, INC. FOR DETAILS.

    PIA K, PIA K1, PIA K2, TIA K1, TIA K2 AND PIA M ARE PERMANENT AND TEMPORARY WETLAND IMPACTS ASSOCIATED WITH THE CONSTRUCTION OF A 24' WIDE ROAD (ROSE FARM LANE).

    THE BUFFER IMPACT AREAS ARE ASSOCIATED WITH THE REMEDIATION PROCESS, CONSTRUCTION OF A 24' WIDE PAVED ROAD (ROSE FARM LANE) AND THE CONNECTION OF OAK STREET EXTENSION TO ROSE FARM LANE.

TOWN OF EXETER WETLAND CONSERVATION DISTRICT WETLAND & 40'/50' NO CUT/NO DISTURBANCE BUFFER AREAS & IMPACTS TABLE

WETLAND	WETLAND AREA	TEMPORARY IMPACT	PERMANENT IMPACT	TEMPORARY BUFFER IMPACT	PERMANENT BUFFER IMPACT
A	11,857 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.
B	100,049 S.F.	1,080 S.F.	0 S.F.	22,616 S.F.	3,534 S.F.
I	668 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.
J	15 S.F.	0 S.F.	0 S.F.	0 S.F.	531 S.F.
K	185,163 S.F.	1,464 S.F.	3,469 S.F.	3,787 S.F.	41,829 S.F.
L	23,073 S.F.	0 S.F.	0 S.F.	0 S.F.	0 S.F.
M	12,359 S.F.	0 S.F.	137 S.F.	3,310 S.F.	5,390 S.F.
IS	(373 L.F.)	0 S.F.	(100 L.F.)	0 S.F.	714 S.F.
TOTAL:	333,184 S.F.	2,544 S.F.	3,606 S.F.	29,713 S.F.	51,998 S.F.

FOR REVIEW
FINAL IMPACT NUMBERS TO BE CALCULATED UPON DESIGN APPROVAL

100 50 25 0 100
Graphic Scale

TFM / MSC
A division of TFMoran, Inc.
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.mscengineers.com

47175.00	DR		FB	531 & 539	C-10A
	CK		CADFILE	47175.00-WETLAND	

TAX MAP 54 LOTS 5, 6 & 7 AND MAP 63 LOT 205

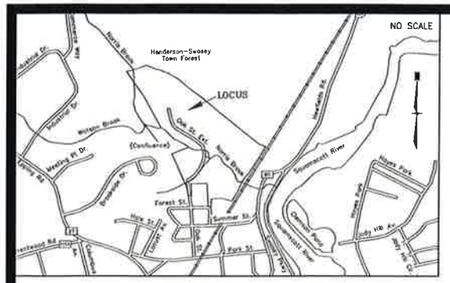
TOWN OF EXETER WETLAND CONSERVATION DISTRICT AREA & IMPACTS PLAN

OAK STREET EXTENSION & FOREST STREET
EXETER, NEW HAMPSHIRE, COUNTY OF ROCKINGHAM
OWNED BY
EXETER ROSE FARM, LLC & THE BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS
PREPARED FOR
EXETER ROSE FARM, LLC

SCALE: 1"=100' **JUNE 29, 2018**

REV.	DATE	DESCRIPTION
		DR
		CK

Jun 29, 2018 - 12:49pm
F:\MSC Projects\47175 - Oak Street Extension - Exeter\47175.00 - Baker Properties\47175.00 C3D\Survey\Drawings\OPEN SPACE\47175-00_C10A_Wetland CUP.dwg



VICINITY PLAN

"HENDERSON-SWASEY TOWN FOREST"

TAX MAP 49 LOT 8

N/F
TOWN OF EXETER
HENDERSON-SWASEY FOREST
10 FRONT STREET
EXETER, NH 03833
RCRD BK.2056 PG.64
(SEE PLAN REFERENCE 10)
(municipal)

TAX MAP 53 LOT 4

N/F
JOHN P. & TERESA TOOMEY
2 NEWFIELDS ROAD
EXETER, NH 03833
RCRD BK.5516 PG.135
(SEE PLAN REFERENCE 9)

TOTAL AREA
2,176,025± S.F.
(49.9547± ACRES)

TAX MAP 48 LOT 5

N/F
EAST COAST VENTURES INC.
C/O INTERGRATED REALTY RESOURCES
8025 S. WILLOW ST., SUITE 209
MANCHESTER, NH 03103
RCRD BK.5613 PG.2678
(SEE PLAN REFERENCE 11)
(industrial)

TAX MAP 54 LOT 1

N/F
SIGARMS INC.
18 INDUSTRIAL DRIVE
EXETER, NH 03833
RCRD BK.2817 PG.686
(SEE PLAN REFERENCE 11)
(industrial)

TAX MAP 54 LOT 4

N/F
NORRIS BROOK CONDOMINIUM
3 HOLLAND WAY, STE. 201
EXETER, NH 03833
RCRD BK.2561 PG.2642
(SEE PLAN REFERENCES 5 & 6)
(residential)

TAX MAP 49 LOT 7

N/F
BOSTON AND MAINE RAILROAD CORPORATION
1700 IRON HORSE PARK
NORTH BILLERICA, MA 01862-1681
RCRD BK.529 PG.14
(SEE PLAN REFERENCE 4)

TAX MAP 63 LOT 207-1

N/F
JOAN GALLAGHER
5 WADLEIGH STREET
EXETER, NH 03833
RCRD BK.4428 PG.2196
(SEE PLAN REFERENCE 7 & 8)
(residential)

TAX MAP 63 LOT 206

N/F
JOAN GALLAGHER &
THOMAS R. LIGHT
5 WADLEIGH STREET
EXETER, NH 03833
RCRD BK.4428 PG.2194
(SEE PLAN REFERENCE 7 & 8)
(residential)

TAX MAP 63 LOT 204

N/F
D. TUCK PROPERTIES LLC
215 ATLANTIC AVENUE
SEABROOK, NH 03874
RCRD BK.4816 PG.657
(residential)

TAX MAP 63 LOT 190

N/F
JEANETTE WILLIAMS REVOCABLE TRUST
10 WADLEIGH STREET
EXETER, NH 03833
RCRD BK.3768 PG.1712
(residential)

TAX MAP 63 LOT 202

N/F
MAURA C. FAY &
MICHAEL VEAZEY
13 FOREST STREET
EXETER, NH 03833
RCRD BK.5231 PG.321
(residential)

TAX MAP 63 LOT 203

N/F
MARY FRANCES DAGOSTINO
11 FOREST STREET
EXETER, NH 03833
RCRD BK.2007 PG.1579
(residential)

LEGEND:

N/F	NOW OR FORMERLY
MM	MANMADE
RCRD	ROCKINGHAM COUNTY REGISTRY OF DEEDS
S.F.	SQUARE FEET
	BOUNDARY LINE
	BROOK
	EDGE OF WETLANDS
	PERENNIAL STREAM
	INTERMITTENT STREAM
	EXETER SHORELAND PROTECTION DISTRICT (ZO: SECTION 9.3.1.C)
	100'/150' BUILDING SETBACK (ZO: SECTION 9.3.4.C)
	75' VEGETATIVE BUFFER (ZO: SECTION 9.3.4.E)
	LIMITS OF GRADING
	WETLANDS
	IMPACT AREA 1
	IMPACT AREA 2
	IMPACT AREA 3
	IMPACT AREA 4
	IMPACT AREA 5

IMPACT 1A =19,181 S.F. (PIA: 4,253 S.F. TIA: 14,928 S.F.)
IMPACT 1B =67,432 S.F. (PIA: 59,265 S.F. TIA: 8,167 S.F.)
IMPACT 1C =379 S.F. (PERMANENT)
IMPACT 1D =1,253 S.F. (PERMANENT)
IMPACT 1E =563 S.F. (PERMANENT)
IMPACT 1F =632 S.F. (PERMANENT)
IMPACT 2A =3,072 S.F. (PIA: 2,214 S.F. TIA: 858 S.F.)
IMPACT 2B =114 S.F. (PERMANENT)
IMPACT 3A =13,987 S.F. (PIA: 959 S.F. TIA: 13,028 S.F.)
IMPACT 3B =42,772 S.F. (PERMANENT)
IMPACT 3C =11,032 S.F. (PIA: 8,179 S.F. TIA: 2,853 S.F.)
IMPACT 3D =75 S.F. (PERMANENT)
IMPACT 3E =2,249 S.F. (PERMANENT)
IMPACT 4A =887 S.F. (TEMPORARY)
IMPACT 4B =2,852 S.F. (PERMANENT)
IMPACT 4C =2,466 S.F. (PERMANENT)
IMPACT 4D =2,892 S.F. (PERMANENT)
IMPACT 5A =5,951 S.F. (TEMPORARY)
IMPACT 5B =3,741 S.F. (PERMANENT)
IMPACT 5C =7,665 S.F. (PERMANENT)
IMPACT 5D =46,486 S.F. (PERMANENT)
IMPACT 5E =24,156 S.F. (PIA: 22,253 S.F. TIA: 1,903 S.F.)
IMPACT 5F =19,430 S.F. (PERMANENT)

GRAVEL WETLAND 1 (PROPOSED)
GRAVEL WETLAND 2 (PROPOSED)
GRAVEL WETLAND 3 (PROPOSED)
GRAVEL WETLAND 4 (PROPOSED)
NORRIS BROOK
INTERMITTENT STREAM
PERENNIAL STREAM
EXETER SHORELAND PROTECTION DISTRICT
BOSTON & MAINE RAILROAD
LIMITS OF GRADING
ROSE FARM LANE
FORMER GREENHOUSE AREA
FORMER BOILER & PACKING BUILDINGS AREA
DRIVEWAY
RETAINING WALL
RETAINING WALLS
100' BUILDING SETBACK
150' BUILDING SETBACK
150' BUILDING SETBACK (TYP.)
75'
NON-CONTIGUOUS WETLAND (SEE ZO: SECTION 9.3.2.B)
OAK STREET EXTENSION
SPRING HOUSE
WADLEIGH STREET
FOREST STREET
OAK STREET
OAK STREET EXTENSION
(SEE RCRD BK.#419 PG.#259 FOR PRIVATE RIGHT OF WAY)

NOTES:

1. THE SUBJECT PARCELS ARE SHOWN ON THE TOWN OF EXETER ASSESSOR'S MAP 54 AS LOTS 5, 6 & 7 AND MAP 63 LOT 205.
2. OWNERS OF RECORD/APPLICANT:

MAP 54 LOT 5
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2102
(603) 425-8598

MAP 54 LOT 6
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2102
(603) 425-8598

MAP 54 LOT 7
EXETER ROSE FARM, LLC
24 OAK STREET EXTENSION
EXETER, NH 03833
RCRD BK.5840 PG.2104
(603) 425-8598

MAP 63 LOT 205
BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS
1 FOREST STREET
EXETER, NH 03833
RCRD BK.#4574 PG.#2843
(603) 502-7175

3. TOTAL AREA:
2,176,025± S.F.
(49.9547± ACRES)
4. THE SUBJECT PARCELS ARE LOCATED IN THE R-1 LOW DENSITY SINGLE FAMILY, R-2 SINGLE FAMILY, AND R-4 MULTI-FAMILY ZONING DISTRICTS AND PARTIALLY LOCATED IN THE TOWN OF EXETER SHORELAND PROTECTION DISTRICT AND THE WETLANDS CONSERVATION AND FLOOD HAZARD OVERLAY DISTRICTS.
5. THE HORIZONTAL DATUM IS REFERENCED TO NORTH AMERICAN DATUM OF 1983 [NAD 83 (2011)] PER STATIC GPS OBSERVATIONS.
6. THE SUBJECT PARCELS ARE PARTIALLY LOCATED IN SPECIAL FLOOD HAZARD AREA (SFHA) ZONE AE (EL.8) & ZONE X AS SHOWN ON NATIONAL FLOOD INSURANCE PROGRAM (NFIP) FLOOD INSURANCE RATE MAP (FIRM) ROCKINGHAM COUNTY, NEW HAMPSHIRE, MAP NUMBER 33015C0402E WITH AN EFFECTIVE DATE OF MAY 17, 2005.
7. THE INTENT OF THIS PLAN IS TO SHOW THE LOCATION OF BOUNDARIES IN ACCORDANCE WITH THE CURRENT LEGAL DESCRIPTIONS. IT IS NOT AN ATTEMPT TO DEFINE THE EXTENT OF OWNERSHIP OR DEFINE THE LIMITS OF TITLE.
8. THE PURPOSE OF THIS PLAN IS TO SHOW THE EXTENT OF THE TOWN OF EXETER SHORELAND DISTRICT (SPD) AREAS AND IMPACTS ASSOCIATED WITH THE OPEN SPACE DEVELOPMENT OF TAX MAP 54 LOTS 5, 6 & 7, AND TAX MAP 63 LOT 205 FOR THE TOWN OF EXETER CONSERVATION COMMISSION REVIEW. SEE PLANNING BOARD CASE #17-27.
9. FIELD SURVEY COMPLETED BY TODD C. EMERSON AND NICK J. MORTON IN JANUARY 2016 AND JULY 2017 USING A TOPCON DS103 AND TOPCON TESLA DATA COLLECTOR, A TOPCON MG-A5 BACKPACK GPS UNIT AND A TOPCON HYPER SR STATIC GPS UNIT.
10. MANMADE AND NATURAL JURISDICTIONAL WETLAND BOUNDARIES WERE DELINEATED BY MARC JACOBS, CERTIFIED WETLAND SCIENTIST NUMBER 090, AND JON BALANOFF IN DECEMBER 2015 ACCORDING TO THE STANDARDS OF THE US ARMY CORPS OF ENGINEERS – WETLANDS DELINEATION MANUAL; THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION; THE CODE OF ADMINISTRATIVE RULES, NH DEPARTMENT OF ENVIRONMENTAL SERVICES – WETLANDS BUREAU – ENV WT 100-900 AND THE TOWN OF EXETER ZONING. PREDOMINANT HYDRIC SOILS WERE IDENTIFIED UTILIZING THE FIELD INDICATORS FOR IDENTIFYING HYDRIC SOILS IN NEW ENGLAND, VERSION 3, APRIL 2004 AND THE FIELD INDICATORS OF HYDRIC SOILS IN THE UNITED STATES, VERSION 7, 2010. THE INDICATOR STATUS OF HYDROPHYTIC VEGETATION WAS DETERMINED ACCORDING TO THE U.S. ARMY CORPS OF ENGINEERS – NORTHCENTRAL AND NORTHEAST 2014 REGIONAL WETLAND PLANT LIST. POTENTIAL VERNAL POOLS WERE EVALUATED ACCORDING TO ENV-WT 101.106, ENV-WT 101.75 AND ENV-WT 101.86. COPIES OF SITE PLANS DEPICTING THE WETLAND DELINEATION WHICH HAVE BEEN REVIEWED BY THE WETLAND SCIENTIST ARE INDIVIDUALLY STAMPED, SIGNED AND DATED. THIS NOTE HAS BEEN CUSTOMIZED FOR THIS LOCATION.
11. IMPACTS 1A, 3A & 5A ARE ASSOCIATED WITH THE REMEDIATION PROCESS. SEE REMEDIAL ACTION PLAN PREPARED BY STONEHILL ENVIRONMENTAL, INC. FOR DETAILS.

THE REMAINING IMPACTS ARE ASSOCIATED WITH THE CONSTRUCTION OF A 24' WIDE PAVED ROAD, THE CONNECTION OF OAK STREET EXTENSION AND THE DEVELOPMENT OF RESIDENTIAL HOUSE LOTS.

TOWN OF EXETER SHORELAND PROTECTION DISTRICT (SPD) AREAS AND IMPACTS TABLE

SPD	0-75' VEGETATIVE BUFFER (AREA 1)	75-100' BUILDING SETBACK (AREA 2)	75-150' BUILDING SETBACK (AREA 3)	100-150' SPD (AREA 4)	150-300' SPD (AREA 5)	TOTAL
AREA	586,230 S.F.	36,074 S.F.	216,989 S.F.	60,077 S.F.	420,802 S.F.	1,320,172 S.F.
PERMANENT IMPACT	86,345 S.F.	3,730 S.F.	54,234 S.F.	8,210 S.F.	99,575 S.F.	232,094 S.F.
TEMPORARY IMPACT	23,095 S.F.	858 S.F.	15,881 S.F.	887 S.F.	7,854 S.F.	48,575 S.F.

FOR REVIEW
FINAL IMPACT NUMBERS TO BE CALCULATED UPON DESIGN APPROVAL

100 50 25 0 100
Graphic Scale

TFM
MSC
A division of TFMoran, Inc.
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
170 Commerce Way, Suite 102
Portsmouth, NH 03801
Phone (603) 431-2222
Fax (603) 431-0910
www.mscengineers.com

47175.00	DR	ETP	FB	531 & 539	C-10B
	CK	BMK	CADFILE	47175.00-SHORELAND	

DESCRIPTION	DATE	REV.
		DR
		CK

TAX MAP 54 LOTS 5, 6 & 7 AND MAP 63 LOT 205

TOWN OF EXETER SHORELAND PROTECTION DISTRICT AREA & IMPACTS PLAN

OAK STREET EXTENSION & FOREST STREET
EXETER, NEW HAMPSHIRE, COUNTY OF ROCKINGHAM

OWNED BY

EXETER ROSE FARM, LLC & THE BENJAMIN & JOAN DAGOSTINO REVOCABLE TRUSTS

PREPARED FOR

EXETER ROSE FARM, LLC

SCALE: 1"=100' JUNE 29, 2018

Jun 29, 2018 - 12:52pm
F:\MSC Projects\47175 - Oak Street Extension - Exeter\47175.00 - Baker Properties\47175.00 C3D\Survey\Drawings\OPEN SPACE\47175-00_C10B_Shoreland CUP.dwg

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Exeter Conservation Commission
Site Walk Exeter Rose Farm
Tax Map 54, Lot 5, 6, 7 and Map 63, Lot 205.
June 12, 2018
5:00 pm

Members in attendance: Bill Campbell, Carlos Guindon, Sally Ward, Drew Koff, Todd Piskovitz and BOS Representative Anne Surman.

Also Present: Kristen Murphy, applicant's representative and members of the public. See the attached sign in sheet.

On June 12th the Conservation Commission conducted a site walk at the aforementioned property to review a proposal for conservation land associated with an Open Space Development. The group met at the end of Oak Street extension. After a brief presentation from the applicant and their representatives, the group walked along a proposed trail line from the point of where the cul-de-sac on the proposed development plans would be located to the area offered as conservation land. From there the group followed existing trails to the railroad right of way. They returned via a proposed trail route to the proposed lot 9 to the original meeting spot.

The walk concluded at 6:15 pm.

Kristen Murphy
Natural Resource Planner

ECC 06/12/18 Rose Farm

Marc Jacobs [signature]
Carlos Guindon [signature]
Eileen Flockhart
Andrew Koff
BILL CAMPBELL
Rich DeVaughn
Joe O'Donnell
Sally Ward
Amy Pattison
Kate Pattison
Brenda Kolbow
Kristen Murphy
Esther Olson-Murphy
Pete Steckler
Todd Piskovitz
Jen Briggs
Matt & Emma Grazier
Anne L. Surman

Conservation Commission

Draft Minutes

6/12/18

Call to Order:

1. Introduction of Members Present

Present at the meeting were Anne Surman, Todd Piskovitz, Carlos Guindon, Bill Campbell, Andrew Koff, Sally Ward, Kristin Murphy, Ginny Raub. The meeting was called to order at 7:00PM by Chairman Campbell.

2. Public Comment

There was no public comment brought forth at this meeting.

Action Items

1. Exeter Rose Farm – Conservation Easement Submittal, associated with the Exeter Rose Farm Open Space Subdivision Plan at Tax Map 54 Lot 5, 6, 7 and Tax Map 63, Lot 205 (Brenda Kolbow, MSC)

Todd Baker from the Rose Farm development introduced this topic, where Rose Farm is proposing to put a conservation easement on 13.44 acres of land on the property. They believe it meets all of the conservation criteria. In the proposed easement area, there is lots of mature tree growth and wetlands, and existing trails (for which the HOA will provide trail maintenance). The easement abuts the Henderson-Swasey town forest and Norris Brook.

Marc Jacobs, the wetland and soil scientist for the project, went through each of the easement criteria for Exeter and explained why they believe the proposed area meets these criteria. For example, the land would protect water quality in addition to providing a habitat for wildlife. It would also provide an opportunity for public enjoyment because of the trails and natural areas. In addition, the land provides a link between the Henderson-Swasey forest and Norris Brook. The land proposed also has a plan for long-term management and a survey plan, and the development would be open to a discussion on a stewardship fee.

Mr. Jacobs explained that, of the 13.44 acres, 10.7 acres is upland and 2.75 is wetland. In one area, Norris Brook is the property line. At the top of the easement is about 1,600ft of shared border with Henderson-Swasey in a narrow strip. One reason for the odd shape of the easement is to avoid infrastructural issues as part of easement, such as drainage and granite slabs. He said they used guidance from Ms. Murphy to determine the area of the easement.

Ms. Ward asked what would happen to Jailhouse Brook, which wasn't included in the easement area. Mr. Jacobs explained that it would be part of the open space area which would fall under the control of the HOA. He also said that they are preparing HOA documents that state it is the intention to maintain open access. Every homeowner in the division will have a voice in the protection of the open space. Chairman Campbell asked where the detention pond drains into. Mr. Jacobs said that there is

drainage to the wetlands and towards Norris Brook. Chairman Campbell then asked about the refuge that was seen on the site walk, and it was confirmed that any trash would be removed.

Another concern from the commission was that the HOA owns the land, while the town would own the easement - who would be building the bridges and responsible for the trails? Mr. Baker said that the HOA would be responsible for maintaining the trails. The trail crossings are fairly simple and narrow, and wouldn't be expensive to build. Chairman Campbell said that he was worried that the land protection policies did not apply to the upper east side of the proposed easement, and that he did not want the commission to take on too many easements to monitor well.

Ms. Surman clarified that if the easement is approved, the developers would get an additional density bonus of 10%. Mr. Baker said that the upper lots are much narrower lots versus if they tried to maximize space. They have 41 lots and 46 units. Mr. Guindon agreed with Chairman Campbell about the east side, because it has a lot of invasive species and also extends the space that needs to be monitored. The west side would be easier because it's next to the Henderson Swasey property. The upper strip provides more of a buffer, but would need to be monitored too. He was also concerned about the wetland area because a lot of refuse has been dumped and it has a lot of invasives too. Ms. Ward asked about points of public access. Baker pointed out the handful of spots on the map. Also, there are some areas for street parking as well.

The first public comment was from Pete Steckler who cautioned the commission against taking up easement land that was not high in conservation value. He encouraged the commission to take their stewardship responsibilities seriously. He pointed out that the northern strip has about 20 lots abutting it, and already has a 100-foot buffer in place maintained by the HOA. In addition, he did not think that the water quality protection was enough.

Steve Hallert said he didn't think the easement as presented would be beneficial because much of the land being protected is already not buildable. The discussion of an easement seems premature in absence of an approved plan. Also, the upper strip has about 20 lots which provide opportunity for mistreatment. The easement would require monitoring by commission, which seems too risky and time-consuming. He suggested that restrictions on landowner's deed could be sufficient for protection.

Suzanne Iverson wanted to clarify that the commission would consider the impact on the Henderson Swasey forest. She was also concerned that the builders said that the trails would be preserved anyway, but now they need the easement for that. Her opinion was that the developers are using the easement to get the density bonus. She also felt that monitoring the land would be too much of a burden.

Jen Brackett-Piskovitz confirmed from the commission that if this was voted through, it would only be an approval of the easement. She said that she didn't think the environmental issues of the project had been addressed. Norris Brook flows through an area on property as being high safety concern and is vulnerable to inundation. The sewer pump station also sits in that high-risk area, and is surrounded on three sides to wetlands and adjacent to a perennial stream feeding into Great Bay. She was worried about what would happen if pump station fails. The town also does not know the quality of the wetlands surrounding the land. She was also concerned about the impervious surface when combined with development on Epping Road.

Chairman Campbell said that the pump station was not being considered tonight as part of the easement, but the planning board will ask for a recommendation from conservation commission where that will be discussed and the evaluation of the wetlands as well. He explained that recommendation would be in conjunction with conditional use permit. Ms. Ward stated that tonight, the commission only needs to make a decision on the easement and not the overall project.

Chairman Campbell said that there would have to be a deed written up that would also need to be approved. He thinks the commission should ask that, if it's approved, the HOA would fund the monitoring of the property. The town has hired people in the past over the summer to do monitoring.

Mr. Koff asked how much of the land in easement would be buildable. Mr. Jacobs said that they could calculate that number. Mr. Baker said that some of the land covered under the easement would be very sought after if put on the market. There was some confusion and discussion among the commission about the requirements of the open space for their density bonus.

Ms. Murphy clarified that the proposed easement before the commission is only the highlighted green area in their map. She said that the density bonus is based off of 50% of open space accepted as conservation or recreation purposes. For the project's category, they are required to provide 5 acres of open space. In order for them to receive a density bonus, they would need to offer half of that open space as conservation/recreation land.

Mr. Piskovitz recused himself from further discussion and from the final vote. Ms. Ward asked if they could determine what they want to accept as the easement, and the power of the HOA. The commission in general did not see the purpose of the upper strip or the east side of the easement. The upper strip would already be protected by a no-cut buffer. There was then discussion about making the land an easement, or a fee-owned property. It was decided that fee-owned would be simpler.

MOTION: Mr. Guindon moved to approve the concept of having a fee-owned property on the western part of the Exeter Rose Farm property, not including the buffer shown. Ms. Ward seconded the motion, and it passed unanimously.

2. Adoption of Land Trust Alliance Standards and Practices

Ms. Murphy said that, in order to apply for the LCHIP Grant, applicants must adopt the Land Trust standards and practices, the 12 guiding principles of the alliance. In the packet is the list, and how to interpret the principles.

MOTION: Ms. Ward moved that the conservation commission adopt and commit to implementing Standards 1-12 set by the Land Trust Alliance. Mr. Guindon seconded the motion, and it passed unanimously.

3. Committee Reports

a. Property Management

i. Raynes LCHIP Grant Application

Chairman Campbell brought up the LCHIP Grant application, and said that the commission would need to ask the Select Board to support the application. They are in process of getting the

application together. The deadline to submit is 6/22/18. He also said that the process this year is very competitive.

MOTION: Mr. Koff moved to ask the Select Board to support the application. Ms. Ward seconded the motion, and it passed unanimously.

ii. Raynes Farm Event Application Form Update

The Select Board wants to get a uniform application form for all events. They are in the process of creating this form, and the conservation commission will modify it for use for Raynes Farm. The Select Board will have a work session about it on 6/25/18.

iii. Exeter Country Club Climate Resiliency Planning Project

Ms. Murphy said that the conservation commission has a conservation easement on part of the Exeter Country Club land, and that some of the land is also owned by the commission by fee. The shoreline along Wheelwright Creek is encroaching along the golf course, and the marsh is moving towards the golf course. Alyson Eberhardt found a grant opportunity for a coastal resiliency-based project. They met with the golf course and explained the prediction for sea level rise. Both the tee and green areas of the golf course are predicted to be underwater. It would be too expensive to move the golf course.

Instead, they are proposing a grant to design a climate resilient buffer in partnership with the golf course. This would meet the needs of the golf course and preserve conservation. They met with the Country Club's board of directors, who were supportive. The next steps are figuring out the cost of the design, and finding out if the golf course is able to match the funding. The application is due around the next conservation commission meeting date in July.

Mr. Campbell asked about the other side of the property. Ms. Murphy said that it has a higher bank, but that it will still likely be affected by sea level rise. The prediction used would be a worst-case scenario of extreme sea level rise with storm surge. She has not looked at the homes around the property. The grant must be used for something that is for public benefit, and could not be used on private land like homes. The board was interested in this idea, and was supportive on moving forward.

iv. Invasive Study Report

Mr. Guindon said that the invasives team applied two ways of marking and locating invasive species. The first method used is paint, which is faster but messier. The land had a lot of invasive species. Another method used was flagging tape, which is slower but more precise. The paint seemed to disappear because the invasives are growing so quickly. The flagging may also disappear soon too. The upper area of the property seemed like there was not evidence of invasives.

Students might be interested in getting involved to monitor and gather data. Any species removal would be volunteer-based in the fall. Chairman Campbell suggested meeting in the landing with a lot of invasives, and working in that area. Mr. Guindon said that if they were to collect data, they would not remove them to see the difference in species and timing. He would like to get people together and find a common time to work on the land.

b. Trails

Dave Short has rerouted a trial by the new landing because it was too steep, to prevent people from making their own trail.

c. Outreach

i. Raynes Farm Fall Event in collaboration with Parks and Rec

Chairman Campbell and Ms. Murphy met with Josh Cilley and Greg Bisson to pick October 12th - 14th as the date for the disc golf event. Parks and Rec will work with Mr. Cilley in finding sponsorship. The commission's role will be to help setup the event, and to include educational aspects of the barn. A portion of the funds would be a donation to the conservation fund to support Raynes repairs. Chairman Campbell brought up the idea of bringing the Mini Maker Fair to Exeter, which could be set up in the barn. It is a fair for handmade crafts. A potential date would be after the golf event, and could be October 19th.

4. Election of Clerk

Chairman Campbell explained the role of the clerk, which includes taking minutes and drafting correspondence for the commission if the staff members are not there.

MOTION: Mr. Koff nominated Mr. Piskovitz to be elected as the clerk. Mr. Guindon seconded the motion, and it passed unanimously.

5. Treasurers Report

Mr. Koff updated the commission on their budget so far. They haven't spent a lot to date, and most of the money spent went towards the spring tree program and the sapling plantings in Henderson Swasey, as well as some membership dues. He said that the CC should begin to line up mowing contract and other bigger expenses for the year.

MOTION: Ms. Ward moved that the commission accept the treasurer's report. Mr. Piskovitz seconded the motion, and it passed unanimously.

6. Approval of Minutes: May 8th Meeting

MOTION: Mr. Piskovitz moved to accept the minutes of 5/8/18 as submitted. Mr. Koff seconded the motion, and it passed unanimously.

7. Other Business

Mr. Koff talked about the first annual Alewife Film Festival which had recently occurred. He thanked Bob Glowacky and EXTV for putting it on, and commented that it was well-attended and very professional. The festival ended with a panel discussion and had a lot of good films shown.

There is an upcoming EPA event at Exeter High School, which is a public conference on PFAS (per-and-polyfluoroalkyl substances) in drinking water. This is becoming a hot topic, and EPA had a national summit recently and are now doing regional workshops. The event in Exeter is the New England wide conference. It is taking place on 6/25/18 and 6/26/18.

8. Next Meeting: Date Scheduled (7/10/18), Submission Deadline (6/29/18)

MOTION: Ms. Raub moved to adjourn the conservation commission meeting at 9:15PM. Mr. Piskovitz seconded the motion, and it passed unanimously.

Respectfully submitted by recording secretary Samantha Cave.