



**LEBANON CONSERVATION COMMISSION
DECEMBER 8, 2022 - 6:30 PM
COUNCIL CHAMBERS, CITY HALL OR
REMOTE VIA VIRTUAL PLATFORM
LEBANONNH.GOV/LIVE**

-
- 1. Call to Order**
 - 2. Approval of Minutes**
 - A. October 13, 2022
 - 3. Permit Review**
 - A. **The Timken Company c/o Timken Aerospace, 336 Mechanic Street, Tax Map 104, Lot 2** - Review and Comment on NHDES Wetland Standard Dredge and Fill Application (Minor Impact) to repair stormwater erosion observed at the outfall of the Timken Aerospace facility. The proposed work would involve 4,580 square feet of temporary impacts to wetlands to facilitate construction of an open drainage channel that can effectively convert stormwater from the outfall to the wetland in a non-erosive manner. **CC2022-03**
 - 4. Study Items**
 - A. Zoning Amendments - Review of proposed amendments to the Zoning Ordinance and Zoning Map
 - B. Master Plan Chapter Update
 - C. Discussion re: Potential disposition of city-owned parcels for housing
 - 5. Committee Reports**
 - A. **Reports from other committees:**
 - Conservation Lands Monitors (10 Minutes)
 - Lebanon Biodiversity Group (10 Minutes)
 - Workshops & Educational Opportunities (10 Minutes)
 - 6. Other Business**
 - 7. Future Agenda Items**
 - 8. Open to the Public**
 - 9. Adjournment**

The order of agenda items is subject to change.

Meetings are open for in-person and remote attendance. Members of the public that wish to attend remotely may do so by going to LebanonNH.gov/Live where you will find instructions on how to enter the meeting. Members of the public will be able to participate and ask questions through the City's virtual platform or by phone. Please note: Should technical difficulties occur during the meeting that disrupts virtual or phone connection(s), the meeting will continue without remote access capabilities.

**Agenda
Conservation Commission
December 8, 2022**

**Agenda Item #2A
Approval of Minutes**

October 13, 2022

DRAFT

CONSERVATION COMMISSION
REGULAR MEETING MINUTES

Remote Via Microsoft Teams

LebanonNH.gov/Live

October 13, 2022

6:30 PM

MEMBERS PRESENT: Sarah Riley (Chair), Bruce James (Vice Chair), Erling Heistad, Donald Lacey, Chris Johnson, Sean Dittrich (Alt.) (remote), Barbara Hirai (Alt.)

MEMBERS ABSENT: Ernst Oidtmann, Susan Almy

STAFF PRESENT: Mark Goodwin (GIS Coordinator)

1. **CALL TO ORDER** – Chair Riley called the meeting to order at 6:32 PM.

Ms. Hirai was appointed to sit for Ernst Oidtmann.

2. **APPROVAL OF MINUTES: September 8, 2022**

Mr. Lacey MOVED to approve the September 8, 2022 minutes, as amended.

Seconded by Ms. Hirai.

- *Remove Bruce James from the meeting attendance and subsequent votes*
- *Remove Darla Bruno from the meeting attendance*
- *Under Study Items, A. – amend to read “this land ranks as supporting habitat...” and strike “to Signal Hill”*
- *Page 1, Line 25 – strike “through a conservation easement”*
- *Page 1, Line 26 – change “City” to “Commission”*
- *Page 2, Line 11 – “the Signal Hill easement” and “but such a provision could be added to the easement if the proposed property is added to the Signal Hill easement.”*

** The Vote on the MOTION was approved (6-0-0).*

3. **OPEN TO PUBLIC**

None at this time.

4. **PERMIT REVIEW**

A. None

5. **STUDY ITEMS**

A. **Strategic Plan Prioritization**

Mr. Goodwin explained that the City Manager has requested that the Commission whittle down the list it submitted for Strategic Plan items. The Commission should be reviewing items in terms of a one-year operating plan. If items are already in the Master Plan, these are likely already on the City’s radar. Ideally, items should be included that action can be taken on this year.

1
2 Ms. Hirai suggested removing the Wild About Lebanon item, as this is dealt with directly by the
3 Commission. She noted that some items on the list are not include on the Master Plan and asked
4 if they could be placed on it.

5
6 Mr. Goodwin suggested that the Commission remove the item "Continue to support volunteer
7 stewardship for conservation lands," as it is handled in-house.

8
9 Mr. Lacey stated that the item regarding contacting a forester regarding a plan for the Ticknor
10 property is a specific item which could be accomplished in a year. Updating maps is also an item
11 which could be accomplished this year. Other long-term items that could at least begin this year,
12 include resurrecting the trail behind the Route 12A properties, and working on the Market Street
13 wastewater treatment road item. Mr. Goodwin agreed that the Route 12A item is good one for
14 the Strategic Plan because it involves more than just the Commission. He stated that he believes
15 the forester one could be done in-house.

16
17 Mr. Goodwin noted that the Commission should likely include 6-7 items. Ms. Riley noted that
18 other groups have included more than that. Mr. Johnson suggested that, if the Commission
19 includes too many items, this may weaken the strength of some of them.

20
21 Mr. Johnson suggested that all items listed as agricultural be removed because they are not
22 yearlong projects. Ms. Riley noted that she would then like to see some of these updated in the
23 Master Plan.

24
25 Ms. Hirai stated that her primary item to include is to create a Climate Action Plan for the City.
26 The Commission agreed this is a high-priority item.

27
28 Mr. Goodwin stated that, regarding the updating maps item, he can only think of two property
29 maps that need be updated and included. He questioned if this item needs to be included on the
30 list. Ms. Riley stated that she believes visibility of the maps on the website could be better. There
31 are other maps that also need updating.

32
33 Ms. Riley stated that she believes the item "Expand awareness of and access to natural and
34 conservation areas" is important. This item requires the coordination of other groups in the City,
35 such as the DPW for mowing. The Commission agreed to keep this on the short list.

36
37 Ms. Hirai suggested that all items under the invasives management section could be included
38 under a new item to, "Coordinate with the DPW to manage invasives." The Commission agreed
39 to keep this on the short list.

40
41 The Commission agreed to leave an item regarding, "Encourage the nature economy," on the
42 short list.

43
44 Mr. Goodwin suggested that the Commission could choose one specific property or project to
45 include from the land conservation items section, but should not include broad, vague items.

1 The Commission broke down the list into Tier 1 and Tier 2 items, as follows:

2 Tier 1:

- 3 • Encourage the nature economy of the Market Street floodplain
- 4 • Encourage the nature economy by reactivating the trail behind 12A businesses
- 5 • Encourage Lebanon to become a municipal partner in the Soak Up the Rain program
- 6 • The riverkeeper item
- 7 • Incorporate aquatic organism passage and wildlife-friendly designs into City-wide culvert
- 8 replacement projects, in line with the New Hampshire Stream Crossing Initiative
- 9 • Incorporate green infrastructure and wildlife crossings into the Exit 18 redesign
- 10 • Examine the applicability of a Vernal Pool Overlay District
- 11 • Examine the impacts of potential future water uses and sources on aquifers and on
- 12 existing wells
- 13 • Work with DPW to reduce road salt use near sensitive habitat areas

14
15 Tier 2:

- 16 • Create a Climate Action Plan for the City
- 17 • Encourage the nature economy by reclaiming the lower parking lot for nature paths and
- 18 riparian habitat
- 19 • Coordinate invasive management between the Conservation Commission and DPW
- 20 • Update subdivision regulations to incorporate stormwater retention practices
- 21 • Enforce or otherwise increase compliance, with an understanding of water use restrictions
- 22 • Review existing lighting standards and modify as needed to minimize skyglow and glare,
- 23 in line with the Dark Sky program
- 24 • Reduce exterior light energy consumption at, and light pollution from, all municipal
- 25 buildings

26 27 **B. Memorial Tribute Process**

28 The Commission discussed the potential of creating a policy to review additional memorial
29 tribute proposals, such as benches.

30
31 Mr. Goodwin stated that these requests should be handled at an operational level, not on a case-
32 by-case discussion at a meeting, as these can often be sensitive topics for families involved. He
33 often scrutinizes these requests to make sure that materials and locations are appropriate.

34
35 Ms. Hirai suggested that a policy could state that requested memorials, such as birdhouses and
36 benches, could be considered for placement in ecological areas by the Commission, as not all
37 areas are appropriate for this.

38
39 Ms. Riley suggested that the Commission may want to be more in the loop regarding these
40 requests in the future, at least at a broad level. Mr. Goodwin stated that he would still
41 recommend being the point person for the families of these requests. This is the first time he has
42 brought a request forward to the Chair for a review of the process.

43
44 The Commission agreed to keep the process as it has been, with Mr. Goodwin as the point
45 person for these requests.

1
2 **Mr. Johnson MOVED to extend the meeting for 15 minutes.**

3 **Seconded by Ms. Hirai.**

4 *** The Vote on the MOTION was approved (6-0-0).**

5
6 The Commission agreed to discuss how to inform and educate people that remove natural items,
7 such as Princess pines, from conservation properties at a future meeting.

8
9 **6. OTHER BUSINESS**

10 None at this time.

11
12 **7. COMMITTEE REPORTS**

13 **A. Reports from other committees:**

14 **--Conservation Lands Monitors (Various Members)**

15 Ms. Hirai stated that there was a workday at East Wilder Conservation Area on September 10th.
16 This was very successful. She noted that DPW cleared the campsites which were at Two Rivers
17 Conservation Area. As part of the Connecticut River's Source of the Sea program, she
18 participated in a cleanup effort for some of the nearby trails.

19
20 Ms. Riley noted that trail work has been completed at the Ticknor property. A new trail has been
21 built with a bridge that she was unaware of. She believed the Commission was still in
22 discussions as to what kind of a trail network it wants on this property. She believes a site visit is
23 in order. The Commission agreed to discuss this item further at its next meeting.

24
25 Ms. Riley noted that the next Wild About Lebanon will be held on the 29th 10am at Goodwin.
26 She suggested a workday the week before to take apart the old fire ring and wooden structures
27 and pull buckthorn along the Link Trail.

28
29 Mr. James stated that the bridge proposal across Great Brook previously prepared for the
30 Recreational Trails Program was fully funded at \$67,000. This has to be built between June and
31 December and will likely be completed by outside parties. He suggested outside parties, such as
32 an engineer and contractor, to help shepherd this project along.

33
34 **--Lebanon Biodiversity Group (D. Lacey)**

35
36 **--Workshops & Educational Opportunities (Various Members)**

37 *This item was not addressed at this time.*

38
39 **8. FUTURE AGENDA ITEMS – these items were not addressed at this time.**

40
41 **A. Continued Review of Chapter 52 – Conservation Land Regulations**

42
43 **B. Continued Review of the Con Com's Rules of Procedure**

44
45 **9. ADJOURNMENT:**

1 **The meeting was adjourned at 9:15 PM.**

2

3 Respectfully submitted,

4 Kristan Patenaude

5 Recording Secretary

**Agenda
Conservation Commission
December 8, 2022**

**Agenda Item #3A
Permit Review**

**The Timken Company c/o Timken
Aerospace – 336 Mechanic Street,
Tax Map 104, Lot 2
CC2022-03**

Standard Dredge and Fill Wetlands Permit Application

Timken Stormwater Outfall Erosion Repair Project

Prepared For

Timken Aerospace
336 Mechanic Street
Lebanon, NH 03766

Prepared By

Normandeau Associates, Inc.
25 Nashua Road
Bedford, NH 03110
(603) 472-5191
www.normandeau.com

and

Sanborn, Head & Associates, Inc.
20 Foundry Street
Concord, NH 03301
(603) 229-1900
www.sanbornhead.com

November 2022

Table of Contents

Standard Dredge and Fill Wetlands Permit Application Form and Copy of Fee Check

Attachment A: Project Introduction and Alternatives Narrative

Attachment B: NHDES Attachment A: Minor and Major Projects Form

Attachment C: NHDES Avoidance and Minimization Written Narrative Form

Attachment D: NHDES Wetlands Functional Assessment Worksheet

Attachment E: US Army Corps of Engineers Appendix B Checklist and Required Information

NHDES OneStop Impaired Water Map

NHDES OneStop Drinking Water and Aquifer/Groundwater Map

USFWS IPaC Species List

NHDES WAP Ranked Habitat Map

NHDES WPPT FEMA Floodplain Map

NHDHR Request for Project Review (RPR) Form

Attachment F: USGS Topographic Project Location Map (1"=2000' Scale)

Attachment G: Final Plans

Attachment H: Parcel and Abutter Map and List of Abutters with Mailing Addresses and Proof of Mailing (Certified Mail Slips)

Attachment I: Normandeau Associates Wetland Delineation Summary Report

Mapping

Photographs

Wetland Data Forms

Function and Value Forms

Brief Review of Historical Mapping

Review of Historical Mapping

Attachment J: Construction Sequence Narrative

Attachment K: NH NHB Datacheck Letter

Attachment L: A statement of whether the applicant has received comments from the local Board of Selectmen, local Conservation Commission, Local River Advisory Council, or Federal Agencies and, if so, how the applicant has addressed the comments

Standard Dredge and Fill Wetlands Permit Application Form and Copy of Fee Check



**STANDARD DREDGE AND FILL
WETLANDS PERMIT APPLICATION**
Water Division/Land Resources Management
Wetlands Bureau
[Check the Status of your Application](#)



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

APPLICANT'S NAME: Timken Aerospace, Attn. Aaron Mills

TOWN NAME: Lebanon

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

A person may request a waiver of the requirements in Rules Env-Wt 100-900 to accommodate situations where strict adherence to the requirements would not be in the best interest of the public or the environment but is still in compliance with RSA 482-A. A person may also request a waiver of the standards for existing dwellings over water pursuant to RSA 482-A:26, III(b). For more information, please consult the [Waiver Request Form](#).

SECTION 1 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05; RSA 482-A:3, I(d)(2))

Please use the [Wetland Permit Planning Tool \(WPPT\)](#), the Natural Heritage Bureau (NHB) [DataCheck Tool](#), the [Aquatic Restoration Mapper](#), or other sources to assist in identifying key features such as: [priority resource areas \(PRAs\)](#), [protected species or habitats](#), coastal areas, designated rivers, or designated prime wetlands.

Has the required planning been completed?	☒ Yes ☐ No
Does the property contain a PRA? If yes, provide the following information:	☐ Yes ☒ No
Does the project qualify for an Impact Classification Adjustment (e.g. NH Fish and Game Department (NHF&G) and NHB agreement for a classification downgrade) or a Project-Type Exception (e.g. Maintenance or Statutory Permit-by-Notification (SPN) project)? See Env-Wt 407.02 and Env-Wt 407.04.	☐ Yes ☒ No
- Protected species or habitat? - If yes, species or habitat name(s): None identified - NHB Project ID #: NHB22-1407	☐ Yes ☒ No
Bog?	☐ Yes ☒ No
Floodplain wetland contiguous to a tier 3 or higher watercourse?	☐ Yes ☒ No
Designated prime wetland or duly-established 100-foot buffer?	☐ Yes ☒ No
Sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone?	☐ Yes ☒ No
Is the property within a Designated River corridor? If yes, provide the following information:	☒ Yes ☐ No
- Name of Local River Management Advisory Committee (LAC): Mascoma River LAC - A copy of the application was sent to the LAC on Month: Day: Year:	

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

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

www.des.nh.gov

For dredging projects, is the subject property contaminated? • If yes, list contaminant: N/A	☐ Yes ☐ No
Is there potential to impact impaired waters, class A waters, or outstanding resource waters?	☐ Yes ☒ No
For stream crossing projects, provide watershed size (see WPPT or Stream Stats): N/A	
SECTION 2 - PROJECT DESCRIPTION (Env-Wt 311.04(i))	
Provide a brief description of the project and the purpose of the project, outlining the scope of work to be performed and whether impacts are temporary or permanent. DO NOT reply "See attached"; please use the space provided below.	
The goal/purpose of the proposed project is to repair stormwater erosion observed at the outfall of the Timken Aerospace Facility in Lebanon, New Hampshire. The proposed work would involve 4,580 square feet of temporary impacts to wetlands to facilitate construction of an open drainage channel that can effectively convey stormwater from the outfall to the wetland in a non-erosive manner. Over the course of several years, stormwater runoff that is concentrated at the outfall has created an erosion gully that has exposed the subsurface soil strata and pushed eroded soils into the wetland. In June 2022, the dimensions of the eroded gully varied between 3 and 10 feet at its base, up to 4 feet deep, and approximately 290 feet long. The erosion has resulted in a sediment deposition area measuring approximately 3,500 square feet that is within a wetland. Construction will involve shaping the erosion gully into a more uniform drainage channel and installing an erosion resistant turf reinforced matting (TRM) material to armor the bottom and sides of the channel. The TRM was selected for the erosion repair due to access limitations which make it difficult to bring large quantities of materials, such as large stone riprap, into the work area. The use of TRM is expected to reduce the number of trips in and out of the work area and reduce the overall duration of the work in and around wetlands. The eroded gully will need to be reshaped and raked smooth for effective TRM deployment. Large rocks, sticks, and/or other natural debris will need to be cleared from the channel to allow the TRM to make contact the subgrade soil. No soils will be added or removed during the project so that there are no impacts to the 100-year floodplain. The TRM will be shingled from upstream to downstream and anchored using twist pins to prevent movement after installation.	
SECTION 3 - PROJECT LOCATION	
Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.	
ADDRESS: 336 Mechanic Street	
TOWN/CITY: Lebanon, NH	
TAX MAP/BLOCK/LOT/UNIT: 104-2	
US GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME: near Mascoma River	
☒ N/A	
(Optional) LATITUDE/LONGITUDE in decimal degrees (to five decimal places):	
	43.639936° North
	-72.283289° West

SECTION 4 - APPLICANT (DESIRED PERMIT HOLDER) INFORMATION (Env-Wt 311.04(a))

If the applicant is a trust or a company, then complete with the trust or company information.

NAME: The Timken Company c/o Timken Aerospace, Attn: Aaron Mills

MAILING ADDRESS: 336 Mechanic Street

TOWN/CITY: Lebanon

STATE: NH

ZIP CODE: 03766

EMAIL ADDRESS: aaron.mills@timken.com

FAX: [NEED]

PHONE: 603-422-6929

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

SECTION 5 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c))☐ N/A

LAST NAME, FIRST NAME, M.I.: Clay, Ryan, L

COMPANY NAME: Sanborn Head & Associates, Inc.

MAILING ADDRESS: 20 Foundry Street

TOWN/CITY: Concord

STATE: NH

ZIP CODE: 03301

EMAIL ADDRESS: rclay@sanbornhead.com

FAX: N/A

PHONE: 603-415-6111

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

SECTION 6 - PROPERTY OWNER INFORMATION (IF DIFFERENT THAN APPLICANT) (Env-Wt 311.04(b))

If the owner is a trust or a company, then complete with the trust or company information.

☒ Same as applicant

NAME:

MAILING ADDRESS:

TOWN/CITY:

STATE:

ZIP CODE:

EMAIL ADDRESS:

FAX:

PHONE:

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

SECTION 7 - RESOURCE-SPECIFIC CRITERIA ESTABLISHED IN Env-Wt 400, Env-Wt 500, Env-Wt 600, Env-Wt 700, OR Env-Wt 900 HAVE BEEN MET (Env-Wt 313.01(a)(3))

Describe how the resource-specific criteria have been met for each chapter listed above (please attach information about stream crossings, coastal resources, prime wetlands, or non-tidal wetlands and surface waters):

Env-Wt 516.06 Maintenance and Repair of Intake and Outflow appears to be the best match in terms of Env-Wt 500. The project has been designed and engineered to address an eroded stormwater outfall to improve water quality and prevent further erosion of surrounding upland and wetland areas.

Env-Wt 400: the jurisdictional areas have been delineated and characterized based on the required methods and best practices; See Attachment H and other materials for additional information

Env-Wt 600: Coastal Lands and Tidal Waters/Wetlands - Not Applicable for Lebanon, NH

Env-Wt 700: Prime Wetlands - Not Applicable

Env-Wt 800: Compensatory Mitigation - No Required

Env-Wt 900: Stream Crossings - Nor Applicable

SECTION 8 - AVOIDANCE AND MINIMIZATION

Impacts within wetland jurisdiction must be avoided to the maximum extent practicable (Env-Wt 313.03(a)).* Any project with unavoidable jurisdictional impacts must then be minimized as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#) and the [Wetlands Permitting: Avoidance, Minimization and Mitigation Fact Sheet](#). For minor or major projects, a functional assessment of all wetlands on the project site is required (Env-Wt 311.03(b)(10)).*

Please refer to the application checklist to ensure you have attached all documents related to avoidance and minimization, as well as functional assessment (where applicable). Use the [Avoidance and Minimization Checklist](#), the [Avoidance and Minimization Narrative](#), or your own avoidance and minimization narrative.

**See Env-Wt 311.03(b)(6) and Env-Wt 311.03(b)(10) for shoreline structure exemptions.*

SECTION 9 - MITIGATION REQUIREMENT (Env-Wt 311.02)

If unavoidable jurisdictional impacts require mitigation, a mitigation [pre-application meeting](#) must occur at least 30 days but not more than 90 days prior to submitting this Standard Dredge and Fill Permit Application.

Mitigation Pre-Application Meeting Date: Month: 9 Day: 20 Year: 2022

☒ N/A - Mitigation is not required

SECTION 10 - THE PROJECT MEETS COMPENSATORY MITIGATION REQUIREMENTS (Env-Wt 313.01(a)(1)c)

Confirm that you have submitted a compensatory mitigation proposal that meets the requirements of Env-Wt 800 for all permanent unavoidable impacts that will remain after avoidance and minimization techniques have been exercised to the maximum extent practicable: ☐ I confirm submittal.

☒ N/A – Compensatory mitigation is not required

SECTION 11 - IMPACT AREA (Env-Wt 311.04(g))

For each jurisdictional area that will be/has been impacted, provide square feet (SF) and, if applicable, linear feet (LF) of impact, and note whether the impact is after-the-fact (ATF; i.e., work was started or completed without a permit).

For intermittent and ephemeral streams, the linear footage of impact is measured along the thread of the channel. *Please note, installation of a stream crossing in an ephemeral stream may be undertaken without a permit per Rule Env-Wt 309.02(d), however other dredge or fill impacts should be included below.*

For perennial streams/ivers, the linear footage of impact is calculated by summing the lengths of disturbances to the channel and banks.

Permanent impacts are impacts that will remain after the project is complete (e.g., changes in grade or surface materials).

Temporary impacts are impacts not intended to remain (and will be restored to pre-construction conditions) after the project is completed.

JURISDICTIONAL AREA		PERMANENT			TEMPORARY		
		SF	LF	ATF	SF	LF	ATF
Wetlands	Forested Wetland						
	Scrub-shrub Wetland						
	Emergent Wetland						
	Wet Meadow	0			4580		
	Vernal Pool						
	Designated Prime Wetland						
	Duly-established 100-foot Prime Wetland Buffer						
Surface Water	Intermittent / Ephemeral Stream						
	Perennial Stream or River						
	Lake / Pond						
	Docking - Lake / Pond						
	Docking - River						
Banks	Bank - Intermittent Stream						
	Bank - Perennial Stream / River						
	Bank / Shoreline - Lake / Pond						
Tidal	Tidal Waters						
	Tidal Marsh						
	Sand Dune						
	Undeveloped Tidal Buffer Zone (TBZ)						
	Previously-developed TBZ						
	Docking - Tidal Water						
TOTAL		0	0		4580	0	

SECTION 12 - APPLICATION FEE (RSA 482-A:3, I)

☐ **MINIMUM IMPACT FEE:** Flat fee of \$400.

☐ **NON-ENFORCEMENT RELATED, PUBLICLY-FUNDED AND SUPERVISED RESTORATION PROJECTS, REGARDLESS OF IMPACT CLASSIFICATION:** Flat fee of \$400 (refer to RSA 482-A:3, 1(c) for restrictions).

☒ **MINOR OR MAJOR IMPACT FEE:** Calculate using the table below:

Permanent and temporary (non-docking):	4580 SF	× \$0.40 =	\$ 1832
Seasonal docking structure:	SF	× \$2.00 =	\$
Permanent docking structure:	SF	× \$4.00 =	\$
Projects proposing shoreline structures (including docks) add \$400 =			
			\$ 0
Total =			\$ 1832
The application fee for minor or major impact is the above calculated total or \$400, whichever is greater =			
\$ 1832			

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

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

www.des.nh.gov

DIRECTIONS FOR TOWN/CITY CLERK:

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

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

DIRECTIONS FOR APPLICANT:

Submit the original permit application form bearing the signature of the Town/City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery at the address at the bottom of this page. Make check or money order payable to "Treasurer – State of NH".

120186

SANBORN, HEAD & ASSOCIATES, INC.20 FOUNDRY STREET
CONCORD, NH 03301
P (603) 229-1900**People's United
Bank**

51-7218/2211

CHECK DATE November 23, 2022

PAY One Thousand Eight Hundred Thirty Two and 00/100 Dollars

TO Treasurer, State of NH

AMOUNT 1,832.00

*Mad L. Pain*

AUTHORIZED SIGNATURE

⑈ 120186 ⑈ ⑆ 221172186 ⑆ 1015770812 ⑈

SANBORN, HEAD & ASSOCIATES, INC.

120186

Check Date: 11/23/2022

Invoice Number	Date	Voucher	Amount	Discounts	Previous Pay	Net Amount
5165.00WetlandPermit	11/18/2022	0133550	1,832.00			1,832.00
Treasurer, State of NH			TOTAL			1,832.00
People's United Bank -	12	TRENH				

120186

Attachment A. Project Introduction and Alternatives Narrative

PROJECT INTRODUCTION

Sanborn Head & Associates, Inc. (Sanborn Head) and Normandeau Associates, Inc. (Normandeau) prepared this wetlands disturbance permit application on behalf of The Timken Company (Timken) for the Timken Aerospace Facility at 336 Mechanic Street in Lebanon, New Hampshire. Timken is seeking approval from the New Hampshire Department of Environmental Services (NHDES) to install corrective measures needed to repair an erosion issue that is observed to be impacting an existing wetland on the facility property. Normandeau provided wetlands consulting and wetlands delineation services during preparation of this application. Sanborn Head designed the proposed corrective measures in consultation with Normandeau and Timken. The proposed repairs, if implemented, will result in a total of 4,580 square feet of temporary impact to delineated wetlands.

SITE AND PROJECT DESCRIPTION

The Timken Aerospace facility in Lebanon, New Hampshire has been manufacturing precision ball and roller bearings for the aerospace industry since about 1958. The facility is located on the northern side of Routes 4 and 10 (Mechanic Street), near Interstate 89 in Lebanon, New Hampshire. A Site Location Map is provided in Attachment F.

The main building at facility at the site measures approximately 190,000 square feet and is located on the western end of the property. A paved parking area is located north and east of the main building with grassy areas to the west and south. The Timken parcel is abutted by a community rail trail and forested areas to the north and northeast. The locations of site features are shown on the Site Plan provided as Attachment G.

Stormwater runoff from the existing building roof drains and parking areas drains to a series of catch basins which convey stormwater to a single outfall located approximately 630 feet west of the Mascoma River. A wetland area exists between the outfall and the edge of the river. The boundaries of the wetland were delineated by Normandeau during a site visit on May 2, 2022. A copy of the Wetland Delineation Summary Report is provided as Attachment I.

Stormwater discharges to the outfall via a 24-inch diameter polyvinyl chloride (PVC) culvert. The date of installation of the culvert is unknown. A riprap-lined plunge pool was installed to dissipate energy from the stormwater where it exits the culvert; however, stormwater exiting the plunge pool has resulted in the slow formation of an erosion gully that has steadily increased in size over time. In June 2022, the dimensions of the eroded gully varied between 3 feet and 10 feet wide at its base, up to 4 feet deep, and approximately 290 feet long.



Image 1: Plunge Pool at Outlet of 24-inch Diameter Culvert (Outfall No. 1)



Image 2: Erosion Gully (Looking East)

Concentrated stormwater has slowly exposed the subsurface soil strata that primarily consists of granular soils and has pushed the eroded soils downstream into the existing wetland. The erosion has resulted in a sediment deposition area measuring approximately 3,500 square feet. The sediment deposition area is located approximately 310 feet from the edge of the Mascoma River. The existing wetland vegetation appears to be capturing the eroded sediment and preventing the sediment from reaching the Mascoma River.



Image 3: Sediment Deposition in Wetland (Looking East)

The Timken Facility maintains coverage under the USEPA's National Pollutant Discharge Elimination System Multi-Sector General Permit (MSGP). As part of MSGP compliance, Timken maintains and implements a Stormwater Pollution Prevention Plan (SWPPP) that addresses potential stormwater impacts related to facility operations. As part of routine inspections associated with the SWPPP, Timken personnel regularly inspect the stormwater outfall. The observations of Timken personnel in recent years have led to the discovery of the erosion issue and noted worsening over time. Timken recognizes the importance of repairing the erosion issue to protect the existing wetland area and the Mascoma River from sedimentation. The following narrative presents the proposed corrective measures, describes the rationale for selection the corrective measures, and provides a summary of proposed temporary impacts to wetlands.

PROPOSED CORRECTIVE ACTIONS

Options for implementing corrective actions is complicated by the access limitations of the work area. As part of analysis of different repair alternatives, three main access options were considered and are described as follows:

1. Access Path from Parking Lot to Outfall – An existing gravel path is used by Timken to allow for inspection and maintenance of the existing stormwater outfall. The path is notably steep (grade varies 25% to 30%) as the existing parking lot is approximately 40 feet higher in elevation than the outfall.



Image 4: Access Path to Outfall (Looking Uphill to South)

2. Rail Trail - A paved community rail trail is located to the north of the outfall. The trail is not owned by Timken and is regularly used by town residents for recreation. In the vicinity of the erosion area, the trail is 15 feet higher than the elevation of the outfall meaning a ramp would need to be constructed from the rail trail to the outfall if it were to be used for access.



Image 5: Lebanon Rail Trail (Image Source: AllTrails.com)

3. Access Path along Mascoma River – A grassed path exists along the edge of the Mascoma River on a property not owned by Timken. While the path is at an elevation that is convenient for access, using the road for access would require brush clearing and temporary wetlands disturbance within the shoreland zone (within 250 feet) of the Mascoma River.



Image 6: Access Path along Mascoma River (Looking South)

Of the three access options described above, Option 1 (Access Path from Parking Lot to Outfall), was selected as the least impactful access option as it would reduce the amount of wetland disturbance and prevent the need for shoreland impacts. The main limitation with Option 1 is that, due to its steep grade and narrow width, it will be difficult and costly to safely bring equipment and materials down the existing access path to the proposed work area. As such, the proposed erosion repair measures were designed and selected with the intent to limit the amount of machinery and materials needed to complete the erosion repair work.

SELECTED REPAIR METHOD

A Turf-Reinforcement Mat (TRM) is proposed to be installed to armor the bottom and sides of the eroded channel. The TRM was selected for the erosion repair mainly due to the difficulty in bringing in hard armoring materials, such as large stone riprap, into the work area safely via the existing access path and speed with which it can be installed. The TRM is expected to reduce the number of trips needed up and down the access path and ultimately reduce the duration of the work in and around wetlands. The TRM was selected in consideration of the expected flow rate and velocity of the stormwater at the outfall.

The eroded channel will need to be reshaped and raked smooth for effective TRM deployment. Large rocks, sticks, and/or other natural debris will need to be cleared from the channel to allow the TRM to make contact the subgrade soil. No soils will be added or removed during the channel reshaping to avoid impacts on the 100-year floodplain. The TRM will be shingled from

upstream to downstream and anchored using twist pins to prevent movement after installation. Seeding will occur prior to TRM deployment so that vegetation will eventually grow through the TRM and provide additional stabilization of the matting.

Temporary disturbance will occur in upgradient wetland areas when accessing the eroded channel. We understand that the eroded channel (gully) would not be considered a jurisdictional wetland or stream feature by NHDES, as evidenced by the fact that the gully was created by concentrated stormwater runoff from a manmade stormwater outfall from the facility/parking lot and the gully does not exhibit traditional wetland indicators such as hydric soils or wetland plantings. The soils in the gully are primarily sandy and granular soils that have been exposed due to ongoing erosion. The gully would not exist without the concentrated stormwater from the outfall.

The following construction sequence is proposed for the project:

1. Mobilize to Site.
2. Install Filter Logs for Sediment Control in locations shown on design drawings.
3. Rough Grade Channel and Prepare Subgrade Along Channel for TRM deployment.
4. Rough Grade Channel Outlet Apron and Prepare Subgrade Beneath Apron.
5. Fine Grade Channel and Remove Debris And Rocks.
6. Perform Subgrade Inspection with Engineer Present.
7. Seed Soil Along Channel.
8. Install TRM.
9. Install 10 oz/yd² Nonwoven Geotextile for Channel Outlet Apron.
10. Install NHDOT Class III Riprap for Channel Outlet Apron.
11. Rake and Remove Sediments from Sediment Deposition Area.
12. Stabilize Disturbed Areas.
13. Survey As-built Limits of Channel and Apron.
14. Perform Final Inspection with Engineer and Owner Present.
15. De-mobilize from Site.

The proposed repair work will be completed during dry periods to avoid the need for timber matting, which would be difficult to bring into the work area safely. Following completion of the TRM installation, wetland areas will be seeded with a wetland mix that is appropriate for the natural condition of the wetland.

LONG TERM MAINTENANCE

Timken personnel inspect the stormwater outfall on a monthly basis as a requirement of the SWPPP for the site. The inspections will allow for periodic review of the condition of the TRM and documentation of the need for any maintenance. Maintenance of the TRM is expected to involve re-anchoring or the matting with twist anchors using hand-tools to prevent movement. No heavy machinery is expected to be needed.

Attachment B: NHDES Attachment A: Minor and Major Projects Form



STANDARD DREDGE AND FILL WETLANDS PERMIT APPLICATION ATTACHMENT A: MINOR AND MAJOR PROJECTS



Water Division/Land Resources Management

Wetlands Bureau

[Check the Status of your Application](#)

RSA/ Rule: RSA 482-A/ Env-Wt 311.10; Env-Wt 313.01(a)(1); Env-Wt 313.03

APPLICANT'S NAME: Timken Aerospace

TOWN NAME: Lebanon

Attachment A is required for *all minor and major projects*, and must be completed *in addition* to the [Avoidance and Minimization Narrative](#) or [Checklist](#) that is required by Env-Wt 307.11.

For projects involving construction or modification of non-tidal shoreline structures over areas of surface waters having an absence of wetland vegetation, only Sections I.X through I.XV are required to be completed.

PART I: AVOIDANCE AND MINIMIZATION

In accordance with Env-Wt 313.03(a), the Department shall not approve any alteration of any jurisdictional area unless the applicant demonstrates that the potential impacts to jurisdictional areas have been avoided to the maximum extent practicable and that any unavoidable impacts have been minimized, as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#).

SECTION I.I - ALTERNATIVES (Env-Wt 313.03(b)(1))

Describe how there is no practicable alternative that would have a less adverse impact on the area and environments under the Department's jurisdiction.

SEVERAL ALTERNATIVES FOR SITE ACCESS AND METHODS/MATERIALS FOR REPAIRING THE EROSION WERE CONSIDERED. THE PREFERRED ALTERNATIVE UTILIZES AN EXISTING ACCESS TRAIL TO THE OUTFALL AND WILL EMPLOY TURF-REINFORCED MATTING (TRM) TO REPAIR THE ERODED GULLY. THIS COMBINATION IS THE LEAST IMPACTFUL BECAUSE IT DOES NOT REQUIRE THE ESTABLISHMENT OF A NEW ACCESS ROUTE TO AND ACROSS THE WETLAND AREA TO ACCESS THE WORK AREAS, IT AVOIDS THE SHORELAND ZONES, DOES NOT REQUIRE TREE CLEARING, AND IT IS COMPLETELY LOCATED WITHIN THE TIMKEN PARCEL. THE PREFERRED ALTERNATIVE WILL RESULT IN TEMPORARY IMPACTS ONLY FOR CONSTRUCTION AND WILL ACHIEVE THE PROJECT'S PURPOSE OF REPAIRING THE EROSION WITH A DURABLE TRM THAT IS DESIGNED FOR THIS TYPE OF APPLICATION. THE REPAIR OF THE ERODED GULLY WILL ALSO REDUCE THE LIKELIHOOD OF FUTURE EROSION OF UPLAND AND WETLAND AREA AND DEPOSITION OF SEDIMENT INTO WETLAND AREAS. IT IS ANTICIPATED THAT THE PROJECT WILL RESULT IN WATER QUALITY IMPROVEMENTS AND THE EXISTING SEDIMENT DEPOSITS WILL BE REMOVED FROM THE WETLAND.

ADDITIONAL DETAILS ARE INCLUDED IN THE PROJECT INTRODUCTION AND ALTERNATIVES NARRATIVE (ATTACHMENT A).

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SECTION I.II - MARSHES (Env-Wt 313.03(b)(2))

Describe how the project avoids and minimizes impacts to tidal marshes and non-tidal marshes where documented to provide sources of nutrients for finfish, crustacean, shellfish, and wildlife of significant value.

No marshes are present within the project area. The portions of the delineated wetland where impacts are proposed is more consistent with a wet meadow than a consistently, or periodically flooded marsh. Permanent impacts have been avoided and all impacts are expected to be temporary in nature. The wetland areas where impacts are proposed do not support finfish, crustacean, shellfish or other wildlife of significant value.

SECTION I.III - HYDROLOGIC CONNECTION (Env-Wt 313.03(b)(3))

Describe how the project maintains hydrologic connections between adjacent wetland or stream systems.

The proposed project will not alter the existing hydrologic connections between adjacent wetland or stream systems. The purpose of the project is to repair an eroded gully located below an existing stormwater outfall. The gully is located adjacent to a wetland, and the repair project will repair prior erosion caused by periodic high flows of stormwater and result in a stable channel designed and engineered to accommodate current and predicted stormwater flows without resulting in additional erosion of the adjacent wetland and upland areas and associated deposition of sediment in downslope wetland areas. The hydrology will not be altered or redirected; and water quality improvements should be noticed due to lack of erosion and sedimentation during high flow events.

SECTION I.IV - JURISDICTIONAL IMPACTS (Env-Wt 313.03(b)(4))

Describe how the project avoids and minimizes impacts to wetlands and other areas of jurisdiction under RSA 482-A, especially those in which there are exemplary natural communities, vernal pools, protected species and habitat, documented fisheries, and habitat and reproduction areas for species of concern, or any combination thereof.

Wetland impacts have been avoided and minimized where possible. The existing outfall, located adjacent to wetland areas will be retained with no permanent wetland impacts proposed. The remaining impacts will be temporary in nature. No exemplary natural communities, vernal pools, protected species/habitats, fisheries or other habitat of concern are not present or known to exist at the project site.

SECTION I.V - PUBLIC COMMERCE, NAVIGATION, OR RECREATION (Env-Wt 313.03(b)(5))

Describe how the project avoids and minimizes impacts that eliminate, depreciate or obstruct public commerce, navigation, or recreation.

The project will not have a detrimental impact on public commerce, navigation or recreation. The project is located on private land, does not involve navigable waters and does not support recreation uses. A nearby rail trail will not be impacted in any way as a result of the project, nor will the nearby (>250 feet) Mascoma River.

SECTION I.VI - FLOODPLAIN WETLANDS (Env-Wt 313.03(b)(6))

Describe how the project avoids and minimizes impacts to floodplain wetlands that provide flood storage.

A portion of the delineated wetland is located within a mapped 100-year FEMA floodplain; however, no changes to the floodplain that would result in the floodplain's ability to detain and accept flood waters are anticipated because no fill is proposed in these areas. The mapped wetlands are connected to the Mascoma River via a culvert and ditch; and the majority of work will be outside and upslope of the mapped floodplain areas. Signs of recent or frequent flooding were not observed at the site and the floodplain is well above the normal elevation of the Mascoma River; such that it's likely the area only floods meaningfully during the highest flood events. The repaired gully will provide stormwater input to the lower, or eastern portion of the wetland; however there will be no change in the quantity of stormwater input over current conditions and the repaired channel will not erode or diminish the quality of the wetland into which it discharges.

SECTION I.VII - RIVERINE FORESTED WETLAND SYSTEMS AND SCRUB-SHRUB – MARSH COMPLEXES (Env-Wt 313.03(b)(7))

Describe how the project avoids and minimizes impacts to natural riverine forested wetland systems and scrub-shrub – marsh complexes of high ecological integrity.

No riverine forested wetland systems or scrub-shrub-marsh complexes are present within the proposed impact areas and no detrimental effects are anticipated. The forested and shrubby portions of the delineated wetland have been avoided.

SECTION I.VIII - DRINKING WATER SUPPLY AND GROUNDWATER AQUIFER LEVELS (Env-Wt 313.03(b)(8))

Describe how the project avoids and minimizes impacts to wetlands that would be detrimental to adjacent drinking water supply and groundwater aquifer levels.

There are no mapped aquifers, public water supply sources, public water wells, or water supply intake protection areas present within the project area. A large, regional source water protection area is mapped at the project site. No adverse impacts to drinking water supplies or aquifers are anticipated. The project will repair an eroded stormwater gully and prevent future erosion or sedimentation; previously deposited sediment will be removed from the wetland area and a net benefit to surface and ground water quality is anticipated.

SECTION I.IX - STREAM CHANNELS (Env-Wt 313.03(b)(9))

Describe how the project avoids and minimizes adverse impacts to stream channels and the ability of such channels to handle runoff of waters.

No stream channels will be impacted by the proposed repair project; no streams are present and the nearby Mascoma River will be avoided. The project is expected to result in an improvement of surface water quality due to the repair of the eroded stormwater conveyance to downslope areas, including the Mascoma River. No detrimental impacts to the receiving wetland or Mascoma River are anticipated; and no change to the ability of these areas to handle runoff is expected. The repair will stabilize the stormwater conveyance and prevent future erosion of adjacent wetland and upland areas during high flow storm events.

SECTION I.X - SHORELINE STRUCTURES - CONSTRUCTION SURFACE AREA (Env-Wt 313.03(c)(1))

Describe how the project has been designed to use the minimum construction surface area over surface waters necessary to meet the stated purpose of the structures.

Not applicable.

SECTION I.XI - SHORELINE STRUCTURES - LEAST INTRUSIVE UPON PUBLIC TRUST (Env-Wt 313.03(c)(2))

Describe how the type of construction proposed is the least intrusive upon the public trust that will ensure safe docking on the frontage.

Not applicable.

SECTION I.XII - SHORELINE STRUCTURES – ABUTTING PROPERTIES (Env-Wt 313.03(c)(3))

Describe how the structures have been designed to avoid and minimize impacts on ability of abutting owners to use and enjoy their properties.

Not applicable.

SECTION I.XIII - SHORELINE STRUCTURES – COMMERCE AND RECREATION (Env-Wt 313.03(c)(4))

Describe how the structures have been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation.

Not applicable.

SECTION I.XIV - SHORELINE STRUCTURES – WATER QUALITY, AQUATIC VEGETATION, WILDLIFE AND FINFISH HABITAT (Env-Wt 313.03(c)(5))

Describe how the structures have been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat.

Not applicable.

SECTION I.XV - SHORELINE STRUCTURES – VEGETATION REMOVAL, ACCESS POINTS, AND SHORELINE STABILITY (Env-Wt 313.03(c)(6))

Describe how the structures have been designed to avoid and minimize the removal of vegetation, the number of access points through wetlands or over the bank, and activities that may have an adverse effect on shoreline stability.

Not applicable.

PART II: FUNCTIONAL ASSESSMENT**REQUIREMENTS**

Ensure that project meets the requirements of Env-Wt 311.10 regarding functional assessment (Env-Wt 311.04(j); Env-Wt 311.10).

FUNCTIONAL ASSESSMENT METHOD USED:

Highway Methodology

NAME OF CERTIFIED WETLAND SCIENTIST (FOR NON-TIDAL PROJECTS) OR QUALIFIED COASTAL PROFESSIONAL (FOR TIDAL PROJECTS) WHO COMPLETED THE ASSESSMENT: WILLIAM MCCLOY, NHCWS # 268

DATE OF ASSESSMENT: MAY 2, 2022

Check this box to confirm that the application includes a NARRATIVE ON FUNCTIONAL ASSESSMENT:



For minor or major projects requiring a standard permit without mitigation, the applicant shall submit a wetland evaluation report that includes completed checklists and information demonstrating the RELATIVE FUNCTIONS AND VALUES OF EACH WETLAND EVALUATED. Check this box to confirm that the application includes this information, if applicable:



Note: The Wetlands Functional Assessment worksheet can be used to compile the information needed to meet functional assessment requirements.

Attachment C: NHDES Avoidance and Minimization Written Narrative Form



**AVOIDANCE AND MINIMIZATION
WRITTEN NARRATIVE**
Water Division/Land Resources Management
Wetlands Bureau
[Check the Status of your Application](#)



RSA/ Rule: RSA 482-A/ Env-Wt 311.04(j); Env-Wt 311.07; Env-Wt 313.01(a)(1)b; Env-Wt 313.01(c)

APPLICANT'S NAME: Timken Aerospace

TOWN NAME: Lebanon

An applicant for a standard permit shall submit with the permit application a written narrative that explains how all impacts to functions and values of all jurisdictional areas have been avoided and minimized to the maximum extent practicable. This attachment can be used to guide the narrative (attach additional pages if needed). Alternatively, the applicant may attach a completed [Avoidance and Minimization Checklist \(NHDES-W-06-050\)](#) to the permit application.

SECTION 1 - WATER ACCESS STRUCTURES (Env-Wt 311.07(b)(1))

Is the primary purpose of the proposed project to construct a water access structure?

No

SECTION 2 - BUILDABLE LOT (Env-Wt 311.07(b)(1))

Does the proposed project require access through wetlands to reach a buildable lot or portion thereof?

No

SECTION 3 - AVAILABLE PROPERTY (Env-Wt 311.07(b)(2))*

For any project that proposes permanent impacts of more than one acre, or that proposes permanent impacts to a PRA, or both, are any other properties reasonably available to the applicant, whether already owned or controlled by the applicant or not, that could be used to achieve the project's purpose without altering the functions and values of any jurisdictional area, in particular wetlands, streams, and PRAs?

**Except as provided in any project-specific criteria and except for NH Department of Transportation projects that qualify for a categorical exclusion under the National Environmental Policy Act.*

Not applicable. Minimal impacts, no PRAs and no other logical area because there are not suitable alternatives other than the existing stormwater system; and this is a repair project.

SECTION 4 - ALTERNATIVES (Env-Wt 311.07(b)(3))

Could alternative designs or techniques, such as different layouts, different construction sequencing, or alternative technologies be used to avoid impacts to jurisdictional areas or their functions and values as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization?](#)

SEVERAL ALTERNATIVES FOR SITE ACCESS AND METHODS/MATERIALS FOR REPAIRING THE EROSION WERE CONSIDERED. THE PREFERRED ALTERNATIVE UTILIZES AN EXISTING ACCESS TRAIL TO THE OUTFALL AND WILL EMPLOY TURF-REINFORCED MATTING (TRM) TO REPAIR THE ERODED GULLY. THIS COMBINATION IS THE LEAST IMPACTFUL BECAUSE IT DOES NOT REQUIRE THE ESTABLISHMENT OF A NEW ACCESS ROUTE TO AND ACROSS THE WETLAND AREA TO ACCESS THE WORK AREAS, IT AVOIDS THE SHORELAND ZONES, DOES NOT REQUIRE TREE CLEARING, AND IT IS COMPLETELY LOCATED WITHIN THE TIMKEN PARCEL. THE PREFERRED ALTERNATIVE WILL RESULT IN TEMPORARY IMPACTS ONLY FOR CONSTRUCTION AND WILL ACHIEVE THE PROJECT'S PURPOSE OF REPAIRING THE EROSION WITH A DURABLE TRM THAT IS DESIGNED FOR THIS TYPE OF APPLICATION. THE REPAIR OF THE ERODED GULLY WILL ALSO REDUCE THE LIKELIHOOD OF FUTURE EROSION OF UPLAND AND WETLAND AREA AND DEPOSITION OF SEDIMENT INTO WETLAND AREAS. IT IS ANTICIPATED THAT THE PROJECT WILL RESULT IN WATER QUALITY IMPROVEMENTS AND THE EXISTING SEDIMENT DEPOSITS WILL BE REMOVED FROM THE WETLAND.

ADDITIONAL DETAILS ARE INCLUDED IN THE PROJECT INTRODUCTION AND ALTERNATIVES NARRATIVE (ATTACHMENT A).

SECTION 5 - CONFORMANCE WITH Env-Wt 311.10(c) (Env-Wt 311.07(b)(4))**

How does the project conform to Env-Wt 311.10(c)?

***Except for projects solely limited to construction or modification of non-tidal shoreline structures only need to complete relevant sections of Attachment A.*

The project team evaluated several alternatives and the preferred alternative avoids permanent impacts to the delineated wetland by ending the repaired stormwater gully at the wetland edge rather than extending it into the wetland area. The preferred alternative will only result in temporary impacts to wetlands and will remove sediment deposits from wetland areas. This alternative is the least impactful on the wetlands functions and values/services and should result in an improvement of water quality and will prevent future erosion of upland and wetland areas below the existing outfall.

Attachment D: NHDES Wetlands Functional Assessment Worksheet

Also see Attachment I for additional details.



WETLANDS FUNCTIONAL ASSESSMENT WORKSHEET

Water Division/Land Resource Management
Wetlands Bureau



[Check the Status of your Application](#)

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

APPLICANT LAST NAME, FIRST NAME, M.I.: **Timken Aerospace**

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

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

SECTION 1 - LOCATION (USACE HIGHWAY METHODOLOGY)

ADJACENT LAND USE: **Industrial/Commercial, Forest, Utility ROW, Rail Trail**

CONTIGUOUS UNDEVELOPED BUFFER ZONE PRESENT? ☐ Yes ☒ No

DISTANCE TO NEAREST ROADWAY OR OTHER DEVELOPMENT (in feet): **230 feet**

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

CERTIFIED WETLAND SCIENTIST (if in a non-tidal area) or QUALIFIED COASTAL PROFESSIONAL (if in a tidal area) who prepared this assessment: **William McCloy, NHCWS # 268**

DATE(S) OF SITE VISIT(S): **5/2/2022**

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

CONFIRM THAT THE EVALUATION IS BASED ON:

- ☒ Office and
☒ Field examination.

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

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

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SECTION 3 - WETLAND RESOURCE SUMMARY (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
WETLAND ID: LW1	LOCATION: (LAT/ LONG) 43.6399123/-72.2812255
WETLAND AREA: 1.44 acres	DOMINANT WETLAND SYSTEMS PRESENT: PFO1/EM1E
HOW MANY TRIBUTARIES CONTRIBUTE TO THE WETLAND? 0	COWARDIN CLASS: PFO1/EM1E
IS THE WETLAND A SEPARATE HYDRAULIC SYSTEM? ☐ Yes ☒ No if not, where does the wetland lie in the drainage basin? Lower	IS THE WETLAND PART OF: ☒ A wildlife corridor or ☐ A habitat island? IS THE WETLAND HUMAN-MADE? ☐ Yes ☒ No
IS THE WETLAND IN A 100-YEAR FLOODPLAIN? ☒ Yes ☐ No	ARE VERNAL POOLS PRESENT? ☐ Yes ☒ No (If yes, complete the Vernal Pool Table)
ARE ANY WETLANDS PART OF A STREAM OR OPEN-WATER SYSTEM? ☐ Yes ☒ No	ARE ANY PUBLIC OR PRIVATE WELLS DOWNSTREAM/ DOWNGRADIENT? ☒ Yes ☐ No
PROPOSED WETLAND IMPACT TYPE: Temp/Perm	PROPOSED WETLAND IMPACT AREA: TBD
SECTION 4 - WETLANDS FUNCTIONS AND VALUES (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)	
The following table can be used to compile data on wetlands functions and values. The reference numbers indicated in the "Functions/ Values" column refer to the following functions and values: 1. Ecological Integrity (from RSA 482-A:2, XI) 2. Educational Potential (from USACE Highway Methodology: Educational/Scientific Value) 3. Fish & Aquatic Life Habitat (from USACE Highway Methodology: Fish & Shellfish Habitat) 4. Flood Storage (from USACE Highway Methodology: Floodflow Alteration) 5. Groundwater Recharge (from USACE Highway Methodology: Groundwater Recharge/Discharge) 6. Noteworthiness (from USACE Highway Methodology: Threatened or Endangered Species Habitat) 7. Nutrient Trapping/Retention & Transformation (from USACE Highway Methodology: Nutrient Removal) 8. Production Export (Nutrient) (from USACE Highway Methodology) 9. Scenic Quality (from USACE Highway Methodology: Visual Quality/Aesthetics) 10. Sediment Trapping (from USACE Highway Methodology: Sediment /Toxicant Retention) 11. Shoreline Anchoring (from USACE Highway Methodology: Sediment/Shoreline Stabilization) 12. Uniqueness/Heritage (from USACE Highway Methodology) 13. Wetland-based Recreation (from USACE Highway Methodology: Recreation) 14. Wetland-dependent Wildlife Habitat (from USACE Highway Methodology: Wildlife Habitat) First, determine if a wetland is suitable for a particular function and value ("Suitability" column) and indicate the rationale behind your determination ("Rationale" column). Please use the rationale reference numbers listed in Appendix A of USACE <i>The Highway Methodology Workbook Supplement</i>. Second, indicate which functions and values are principal ("Principal Function/value?" column). As described in <i>The Highway Methodology Workbook Supplement</i>, "functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society, from a local, regional, and/or national perspective". "Important Notes" are to include characteristics the evaluator used to determine the principal function and value of the wetland.	

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FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☒ Yes ☐ No	N/A	☐ Yes ☒ No	Score: 5.4
2	☐ Yes ☒ No		☐ Yes ☒ No	
3	☐ Yes ☒ No		☐ Yes ☒ No	
4	☒ Yes ☐ No	3,4,7,10	☒ Yes ☐ No	part of wetland in FEMA floodplain; details stormwater
5	☒ Yes ☐ No	2,4,15	☐ Yes ☒ No	some low, sandy soils; no mapped aquifers
6	☐ Yes ☒ No		☐ Yes ☒ No	
7	☒ Yes ☐ No	3,7,8	☐ Yes ☒ No	
8	☒ Yes ☐ No	1,7	☐ Yes ☒ No	
9	☐ Yes ☒ No		☐ Yes ☒ No	
10	☒ Yes ☐ No	1,2,3	☒ Yes ☐ No	wetland recives stormwater from adjacent commercial/ind facility; erosion
11	☒ Yes ☐ No	2,3	☐ Yes ☒ No	
12	☐ Yes ☒ No		☐ Yes ☒ No	
13	☐ Yes ☒ No		☐ Yes ☒ No	limited, near rail trail but wetland not crossed by trail
14	☒ Yes ☐ No	6,7,13,17	☐ Yes ☒ No	limited sign, near trail and development and highway/roads

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

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

www.des.nh.gov

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

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

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

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

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

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

VERNAL POOL ID NUMBER	DATE(S) OBSERVED	PRIMARY INDICATORS PRESENT (LIST)	SECONDARY INDICATORS PRESENT (LIST)	LENGTH OF HYDROPERIOD	IMPORTANT NOTES
1	NO	Vernal	Pools	Present	
2					
3					
4					
5					

SECTION 6 - STREAM RESOURCES SUMMARY

DESCRIPTION OF STREAM: No Streams Present

STREAM TYPE (ROSGEN):

HAVE FISHERIES BEEN DOCUMENTED?

☐ Yes ☐ No

DOES THE STREAM SYSTEM APPEAR STABLE?

☐ Yes ☐ No

OTHER KEY ON-SITE FUNCTIONS OF NOTE:

The following table can be used to compile data on stream resources. “Important Notes” are to include characteristics the evaluator used to determine principal function and value of each stream. The functions and values reference number are defined in Section 4.

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

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

www.des.nh.gov

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	☐ Yes ☐ No		☐ Yes ☐ No	
2	☐ Yes ☐ No		☐ Yes ☐ No	
3	☐ Yes ☐ No		☐ Yes ☐ No	
4	☐ Yes ☐ No		☐ Yes ☐ No	
5	☐ Yes ☐ No		☐ Yes ☐ No	
6	☐ Yes ☐ No		☐ Yes ☐ No	
7	☐ Yes ☐ No		☐ Yes ☐ No	
8	☐ Yes ☐ No		☐ Yes ☐ No	
9	☐ Yes ☐ No		☐ Yes ☐ No	
10	☐ Yes ☐ No		☐ Yes ☐ No	
11	☐ Yes ☐ No		☐ Yes ☐ No	
12	☐ Yes ☐ No		☐ Yes ☐ No	
13	☐ Yes ☐ No		☐ Yes ☐ No	
14	☐ Yes ☐ No		☐ Yes ☐ No	

SECTION 7 - ATTACHMENTS (USACE HIGHWAY METHODOLOGY; Env-Wt 311.10)

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

Attachment E: US Army Corps of Engineers Appendix B Checklist and Required Information

NHDES OneStop Impaired Water Map

NHDES OneStop Drinking Water and Aquifer/Groundwater Map

USFWS IPaC Species List

NHDES WAP Ranked Habitat Map

NHDES WPPT FEMA Floodplain Map

NHDHR Request for Project Review (RPR) Form



US Army Corps of Engineers®

New England District

Appendix B New Hampshire General Permits Required Information and USACE Section 404 Checklist

Required Information

In order for USACE to properly evaluate your application, applicants must submit the following information for all projects along with the NHDES Wetlands Bureau application or permit notification forms. Some projects may require more information. Check with USACE at (978) 318-8832 for project-specific requirements. For your convenience, this Appendix B is also attached to the NHDES Wetlands Bureau application and Permit by Notification forms.

- NHDES Wetlands Permit Application.
- Request for Project Review Form by the NH DHR: <https://www.nh.gov/nhdhr/review/rpr.htm>.
- Photographs of wetland/waterway to be impacted.
- Purpose of the project.
- Legible, reproducible plans no larger than 11"x17" with bar scale. Provide locus map and plan views of the entire property.
- Typical cross-section views of all wetland and waterway fill areas and wetland replication areas.
- In navigable waters, show MLW and MHW elevations. Show the HTL elevations when fill is involved. In other waters, show the OHW elevation.
- On each plan, show the following for the project:
 - Vertical datum and the NAVD 1988 equivalent with the vertical units as U.S. feet. In coastal waters this may be mean higher high water (MHHW), MHW, MLW, mean lower low water (MLLW) or other tidal datum with the vertical units as U.S. feet. MLLW and MHHW are preferred. Provide the correction factor detailing how the vertical datum (e.g., MLLW) was derived using the latest National Tidal Datum Epoch for that area, typically 1983 - 2001.
 - Horizontal state plane coordinates in U.S. survey feet based on the Traverse Mercator Grid system for the State of New Hampshire (Zone 2800) NAD 83.
 - Project limits with existing and proposed conditions.
 - Limits of any FNP in the vicinity of the project area and horizontal State Plane Coordinates in U.S. survey feet for the limits of the proposed work closest to the FNP.
 - Volume, type, and source of fill material to be discharged into waters and wetlands, including the area(s) (in square feet or acres) of fill in wetlands, below the OHW in inland waters and below the HTL in coastal waters.
 - Delineation of all waterways and wetlands on the project site.
- Use Federal delineation methods and include USACE wetland delineation data sheets (GC 2).
- For activities involving discharges of dredged or fill material into waters of the U.S., include a statement describing how impacts to waters of the U.S. are to be avoided and minimized, and either a statement describing how impacts to waters of the U.S. are to be compensated for (or a conceptual or detailed mitigation plan) or a statement explaining why compensatory mitigation should not be required for the proposed impacts. Please contact USACE for guidance.



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New England District

Appendix B
New Hampshire General Permits
Required Information and USACE Section 404 Checklist

USACE Section 404 Checklist

1. Attach any explanations to this checklist. Lack of information could delay a USACE 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 3 for information on single and complete projects.
4. Contact USACE at (978) 318-8832 with any questions.
5. The information requested below is generally required in the NHDES Wetland Application. See page 61 for NHDES references and Admin Rules as they relate to the information below.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See the following to determine if there is an impaired water in the vicinity of your work area. * https://nhdes-surface-water-quality-assessment-site-nhdes.hub.arcgis.com/ https://www.des.nh.gov/water/rivers-and-lakes/water-quality-assessment https://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx	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 tidal SAS, prime wetlands, or priority resource areas? 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://www4.des.state.nh.us/NHB-DataCheck/ .		X
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	X	
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?	unknown, minimal	
2.7 What is the area of the proposed fill in wetlands?	0 sf Perm, 4580 sf Temp	
2.8 What % of the overall project sire will be previously and proposed filled wetlands?	<1%	
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://www4.des.state.nh.us/NHB-DataCheck/ . USFWS IPAC website: https://ipac.ecosphere.fws.gov/	X IPaC Only, See Attach & Att K	

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: https://wildlife.state.nh.us/wildlife/wap-high-rank.html. • 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 31?	N/A	
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?	No	Loss
5. Historic/Archaeological Resources		
For a minimum, minor or major impact project - a copy of the 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 37 GC 14(d) of the GP document**	X	
6. Minimal Impact Determination (for projects that exceed 1 acre of permanent impact)	Yes	No
Projects with greater than 1 acre of permanent impact must include the following: • Functional assessment for aquatic resources in the project area. • On and off-site alternative analysis. • Provide additional information and description for how the below criteria are met.	<1 acre	
6.1 Will there be complete loss of aquatic resources on site?		X
6.2 Have the impacts to the aquatic resources been avoided and minimized to the greatest extent practicable?	X	
6.3 Will all aquatic resource function be lost?		X
6.4 Does the aquatic resource (s) have regional significance (watershed or ecoregion)?		X
6.5 Is there an on-site alternative with less impact?		X
6.6 Is there an off-site alternative with less impact?		X
6.7 Will there be a loss to a resource dependent species?		X
6.8 Are indirect impacts greater than 1 acre within and adjacent to the project area?		X
6.9 Does the proposed mitigation replace aquatic resource function for direct, indirect, and cumulative impacts?	N/A	

*Although this checklist utilizes state information, its submittal to USACE is a federal requirement.

** If your project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.



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New England District

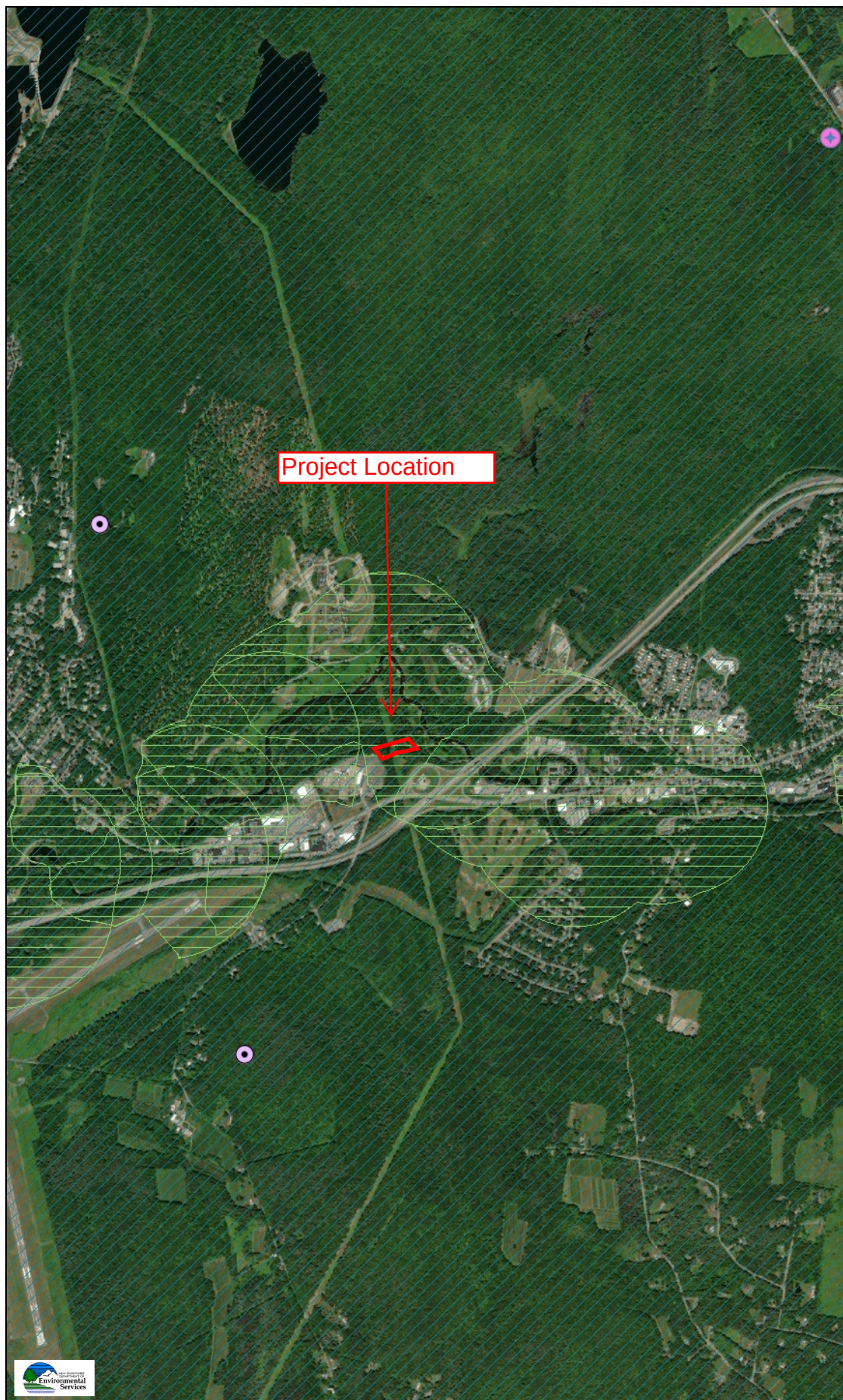
**Appendix B
New Hampshire General Permits
Required Information and USACE Section 404 Checklist**

NHDES Rule Citations

Appendix B Requirements	NHDES Citation	NHDES Resource, Form & BMP
1. Impaired Waters		
1.1	See Env-Wt 307.03 Protection of Water Quality Required & Env-Wt 306.05 a) 7	https://nhdes-surface-water-quality-assessment-site-nhdes.hub.arcgis.com/ https://www.des.nh.gov/water/rivers-and-lakes/water-quality-assessment https://www4.des.state.nh.us/onestopdatamapper/onestopmapper.aspx
2. Wetlands		
2.1	N/A	N/A
2.2	Env 307.06; Env- Wt 311.01(a)(b) (c)	NH Online Forms System - Coastal Resource Worksheet. Version 2.0 Wetlands Permitting: Protected Species and Habitat (nh.gov) Wetlands Permitting: Priority Resource Area (nh.gov) https://www4.des.state.nh.us/NHB-DataCheck/ .
2.3	Env-Wt 313.03(b)(3); Env-Wt 313.03(b)(4)(7); Env-Wt 307.06	See Chapter 7, Stream & Wetland Crossings: <i>Wetlands Best Management Practice Techniques for Avoidance and Minimiz</i> Wetlands-BMP-Manual-2019.pdf (neiwppcc.org) (& Env-Wt 900 for Stream Crossings)
2.4	Env-Wt 604.02 (Tidal buffer zone); Env-Wt 704 (prime buffers)	
2.5	N/A	N/A
2.6	N/A	N/A
2.7	Env-Wt 311.04(g)	Standard application Section 11- NH Online Forms System - Standard Dredge and Fill Wetlands Permit Application . Version 3.5
2.8	N/A	N/A
3. Wildlife		
3.1	Env-Wt 103.69 "Protected species or habitat"; Env-Wt 307.06, 311.01	NHB DataCheck Tool: https://www4.des.state.nh.us/NHB-DataCheck/ . Wetlands Permitting: Protected Species and Habitat (nh.gov) Wetlands Permitting: Priority Resource Area (nh.gov)
3.2	Env-Wt 311.02; 313.03(b)(2), (4), (7)(16); Env-Wt 313.03(b)(6) & See Env-Wt 808.19(g), Env-Wt 808.20	Wetlands Permitting: Protected Species and Habitat (nh.gov) Wetlands Permitting: Priority Resource Area (nh.gov)
3.3	N/A	N/A
3.4	NA	N/A
3.5	(Env-Wt 900) Microsoft Word - Env-Wt 900 as of 10-2020.docx (nh.gov)	New Hampshire Stream Crossing Guidelines (nh.gov) (2009 UNH) NH Online Forms System - Wetland Permit Application Stream Crossing Worksheet. Version 1.8 Stream Crossing Design (nh.gov) : https://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/documents/RR_V.9_FINAL_3-14-19.pdf Best Management Practices for Routine Roadway Maintenance Activities in New Hampshire. 2019. New Hampshire Department of Transportation.
4. Flooding/Floodplain Values		
4.1	Env-Wt 311.05; Env-Wt 103.66 517.03(b); 517.06(a)(6);	Wetlands Permitting: Priority Resource Area (nh.gov) NH Online Forms System - Coastal Resource Worksheet. Version 2.0 New Hampshire Coastal Flood Risk Summary NH Department of

	527.02(e); 527.04(d); Env-Wt 600 Env-Wt 900	Environmental Services (cited in Env-Wt 603.05) NH Online Forms System - Wetland Permit Application Stream Crossing Worksheet. Version 1.8 hydraulic-vulnerability-handout.pdf (nh.gov)
4.2	Env-Wt 527.02 & 527.04 & 313.04 & Env-Wt 800; Wt 605.03 & 605.04	Yes, for permanent impacts to a PRA, impacts from public highway projects, & those projects where flood storage functions are lost when the mitigation threshold is reached. Wetlands Mitigation NH Department of Environmental Services
5. Historical/Archeological Resources		
5.0	Env-Wt 311.02(f)(6)	
6. Minimal Impact Determination		
6.0	F/V assessment: (Env-Wt 311.10); Env-Wt 603.04 (Coastal Functional Assessment) Alternatives: (Env-Wt 311.07(b)(2))	NH Online Forms System - Wetlands Functional Assessment Worksheet. Version 1.3 NH Online Forms System - Coastal Resource Worksheet. Version 2.0
6.1		Wetlands Permitting: Avoidance, Minimization, and Mitigation (nh.gov)
6.2	Env-Wt 102.12 ("Avoidance"), Env-Wt 102.13 ("Avoidance, minimization, mitigation"), Env-Wt 102.14 ("Avoid and minimize"), Env-Wt 311.01, Env-Wt 313.03 ("Avoidance & Minimization") Env-Wt 311.07	See <i>Wetlands Best Management Practice Techniques for Avoidance and Minimization</i> - Wetlands-BMP-Manual-2019.pdf (neiwpcc.org) referenced in Env-Wt 313.03(a); A/M written narrative (NH Online Forms System - Avoidance and Minimization Written Narrative. Version 2.0); Avoidance and Minimization Checklist: NH Online Forms System - Avoidance and Minimization Checklist. Version 3.1
6.3	Env-Wt 311.10, 603.04	See Functional Assessment worksheets above
6.4	Env-Wt 311.02, Env-Wt 312.04, Env-Wt 306.05, 307.06, 311.01	See Protected Species or Habitat (including exemplary natural communities)
6.5	Env-Wt 311.01, Env-Wt 311.07, Env-Wt 311.10 & 313.01 c)1)	See Avoidance & Minimization cites above & BMPs
6.6	(Env-Wt 313.01c) (1) & Env-Wt 311.07(b)(2))	
6.7	Env-Wt 311.10, Env-Wt 103.69, Env-307.06, see Avoidance & minimization cites	NH Online Forms System - Wetlands Functional Assessment Worksheet. Version 1.3 ; Wetlands Permitting: Priority Resource Area (nh.gov) NH Online Forms System - Coastal Resource Worksheet. Version 2.0
6.8	Env-Wt 102.05 (Water quality BMPs)	Practices to minimize or prevent direct or indirect discharge of sediment or other pollutants into surface waters and wetlands, listed in Env-Wt 307
6.9	Env-Wt 800	

Timken Aerospace



Legend

- Surface Waters with Impairment 2016 with Quarter Mile Buffer
- Public_Water_Supply_Entiti
- Public Water Supply Wells
- Source Water Protection Area

Map Scale

1: 25,977

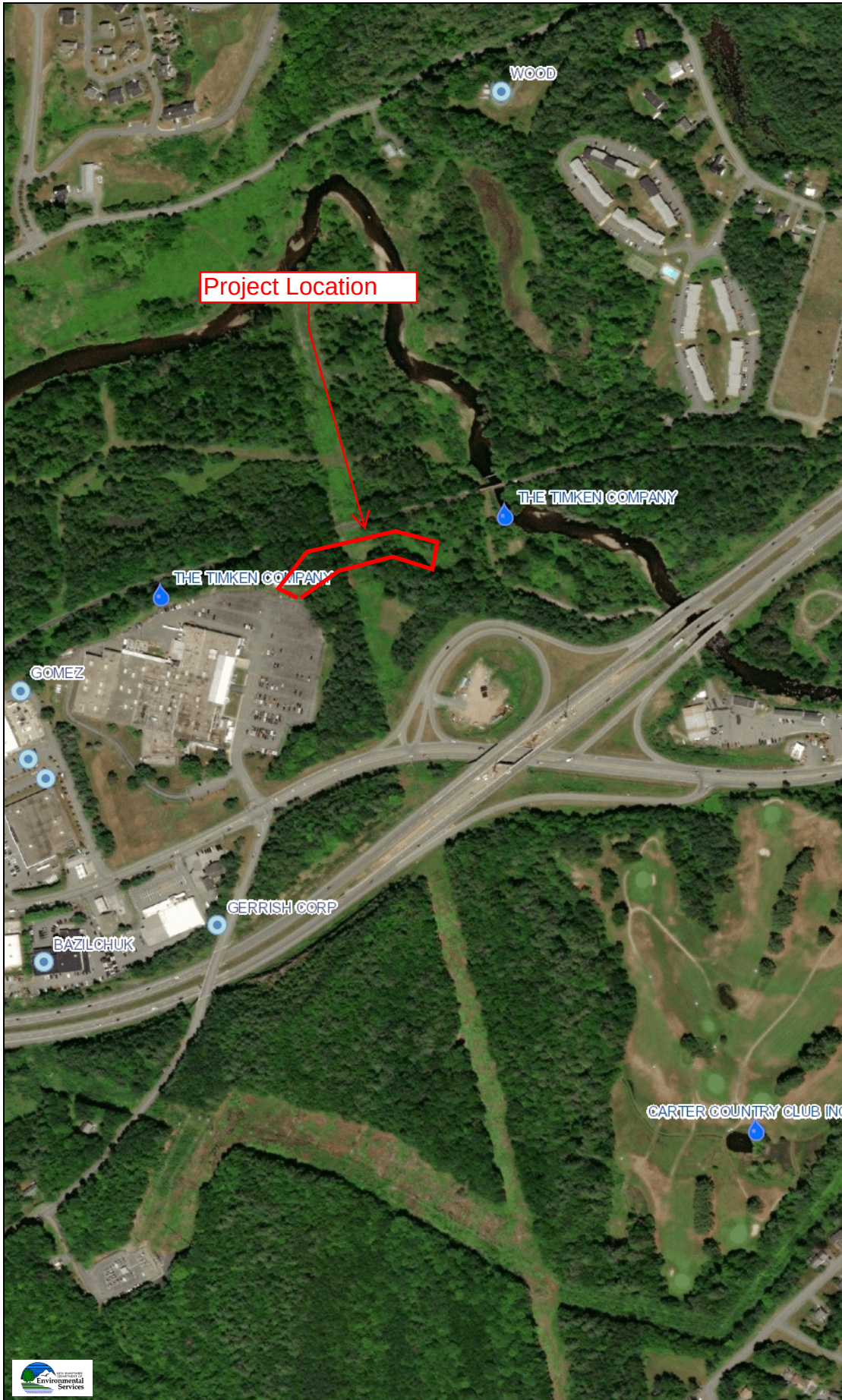
© NH DES, <http://des.nh.gov>

Map Generated: 11/15/2022



Notes

Timken Aerospace



Legend

- Wellhead Protection Areas
- Public_Water_Supply_Entiti
- Groundwater Classification / GAA
- Public Water Supply Wells
- Registered Water Users
- Water Supply Intake Protect Areas
- Water Well Inventory
- Groundwater Classification / GA1
- Groundwater Classification / GA2

Map Scale

1: 6,494

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Map Generated: 11/15/2022



Notes



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104



In Reply Refer To:
Project Code: 2023-0015330
Project Name: Timken Stormwater Outfall Repair Project

November 14, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Please review this letter each time you request an Official Species List, we will continue to update it with additional information and links to websites may change.

About Official Species Lists

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Federal and non-Federal project proponents have responsibilities under the Act to consider effects on listed species.

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested by returning to an existing project's page in IPaC.

Endangered Species Act Project Review

Please visit the “**New England Field Office Endangered Species Project Review and Consultation**” website for step-by-step instructions on how to consider effects on listed

species and prepare and submit a project review package if necessary:

<https://www.fws.gov/office/new-england-ecological-services/endangered-species-project-review>

NOTE Please do not use the **Consultation Package Builder** tool in IPaC except in specific situations following coordination with our office. Please follow the project review guidance on our website instead and reference your **Project Code** in all correspondence.

Northern Long-eared Bat Update - Additionally, please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to be addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.

Additional Info About Section 7 of the Act

Under section 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether projects may affect threatened and endangered species and/or designated critical habitat. If a Federal agency, or its non-Federal representative, determines that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Federal agency also may need to consider proposed species and proposed critical habitat in the consultation. 50 CFR 402.14(c)(1) specifies the information required for consultation under the Act regardless of the format of the evaluation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/service/section-7-consultations>

In addition to consultation requirements under Section 7(a)(2) of the ESA, please note that under sections 7(a)(1) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Please contact NEFO if you would like more information.

Candidate species that appear on the enclosed species list have no current protections under the

ESA. The species' occurrence on an official species list does not convey a requirement to consider impacts to this species as you would a proposed, threatened, or endangered species. The ESA does not provide for interagency consultations on candidate species under section 7, however, the Service recommends that all project proponents incorporate measures into projects to benefit candidate species and their habitats wherever possible.

Migratory Birds

In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

<https://www.fws.gov/program/migratory-bird-permit>

<https://www.fws.gov/library/collections/bald-and-golden-eagle-management>

Please feel free to contact us at **newengland@fws.gov** with your **Project Code** in the subject line if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Attachment(s): Official Species List

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Project Summary

Project Code: 2023-0015330

Project Name: Timken Stormwater Outfall Repair Project

Project Type: Drainage Project

Project Description: Repair an eroded gully associated with a stormwater outfall

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.639903149999995,-72.28307073937981,14z>



Counties: Grafton County, New Hampshire

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Normandeau Associates, Inc.

Name: William McCloy

Address: PO Box 205

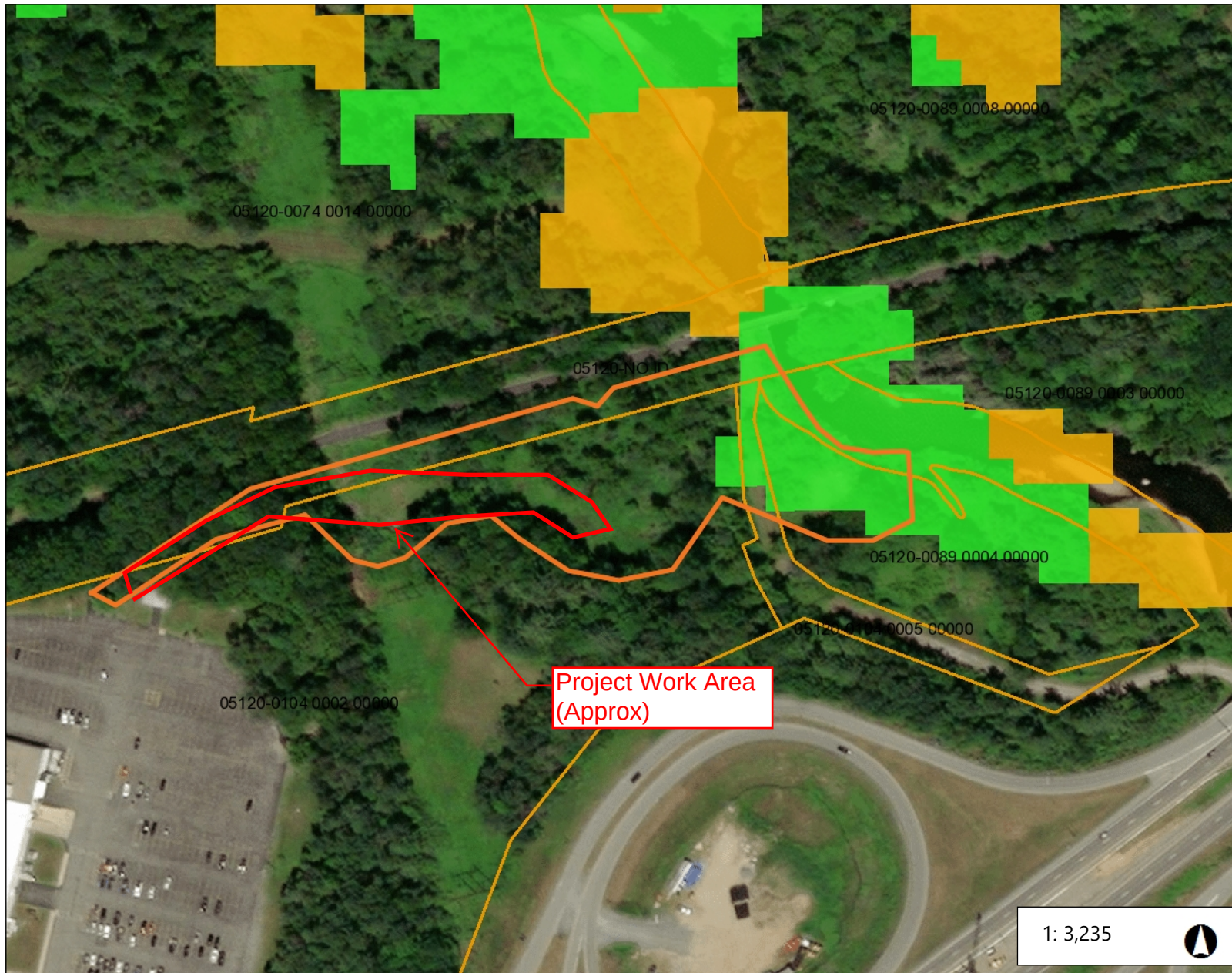
City: Rutland

State: VT

Zip: 05701

Email: wmccloy@normandeau.com

Phone: 8028617038



Legend

Parcel Polygons

- Parcel Polygons
- Attributes for Additional Lines

Parcel Lines

Highest Ranked Wildlife Habitat

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

World Imagery

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

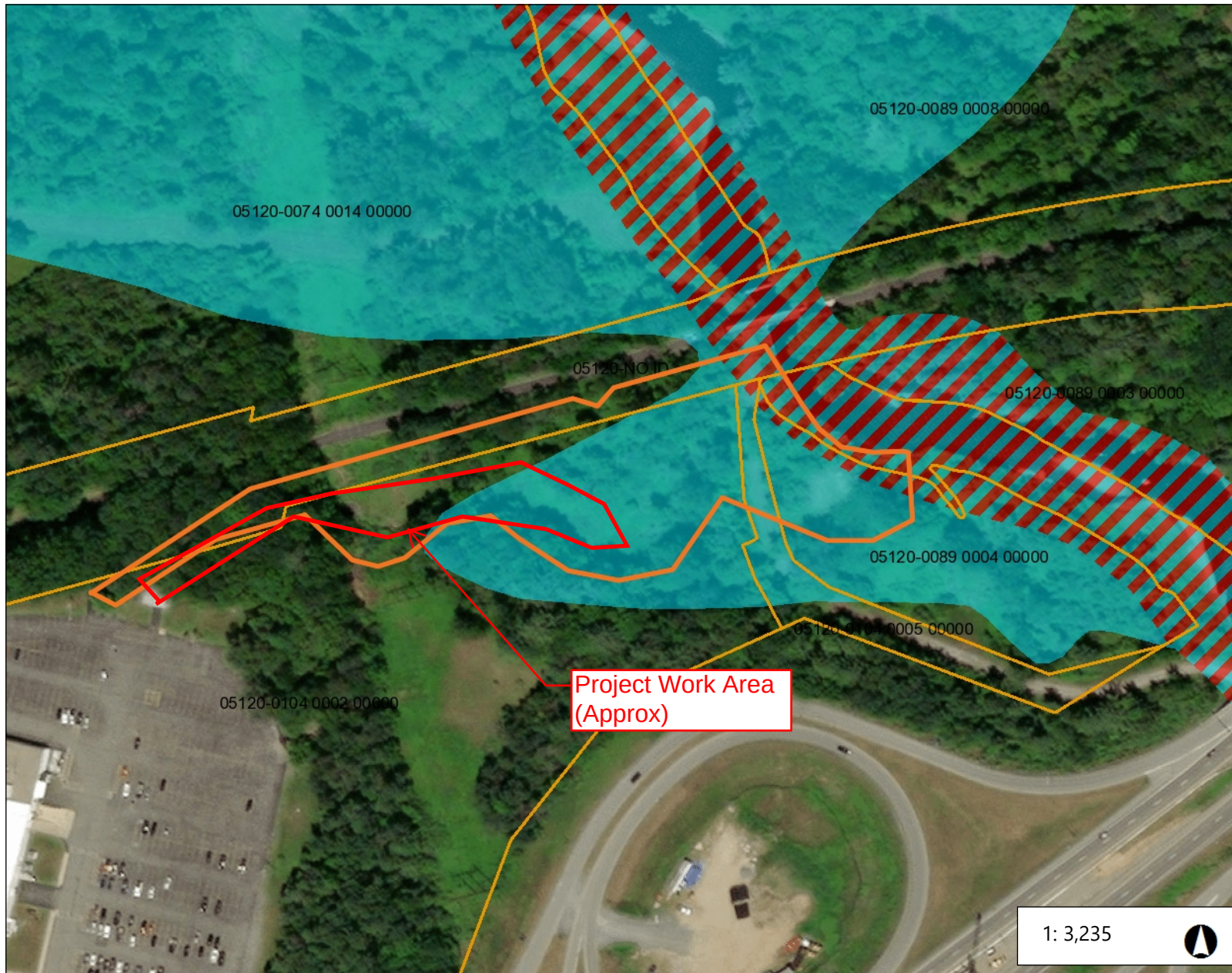
Notes

0.1 0 0.05 0.1 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
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Legend

Parcel Polygons

- Parcel Polygons
- Attributes for Additional Lines

Parcel Lines

FEMA Floodplains

- 1 pct. Annual Chance Flood Hazard
- Floodway
- 0.2 pct. Annual Chance Flood Hazard
- Area of Undetermined Flood Hazard
- Area Protected by Levee

World Imagery

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

Notes

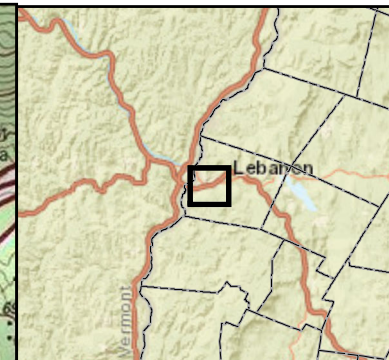
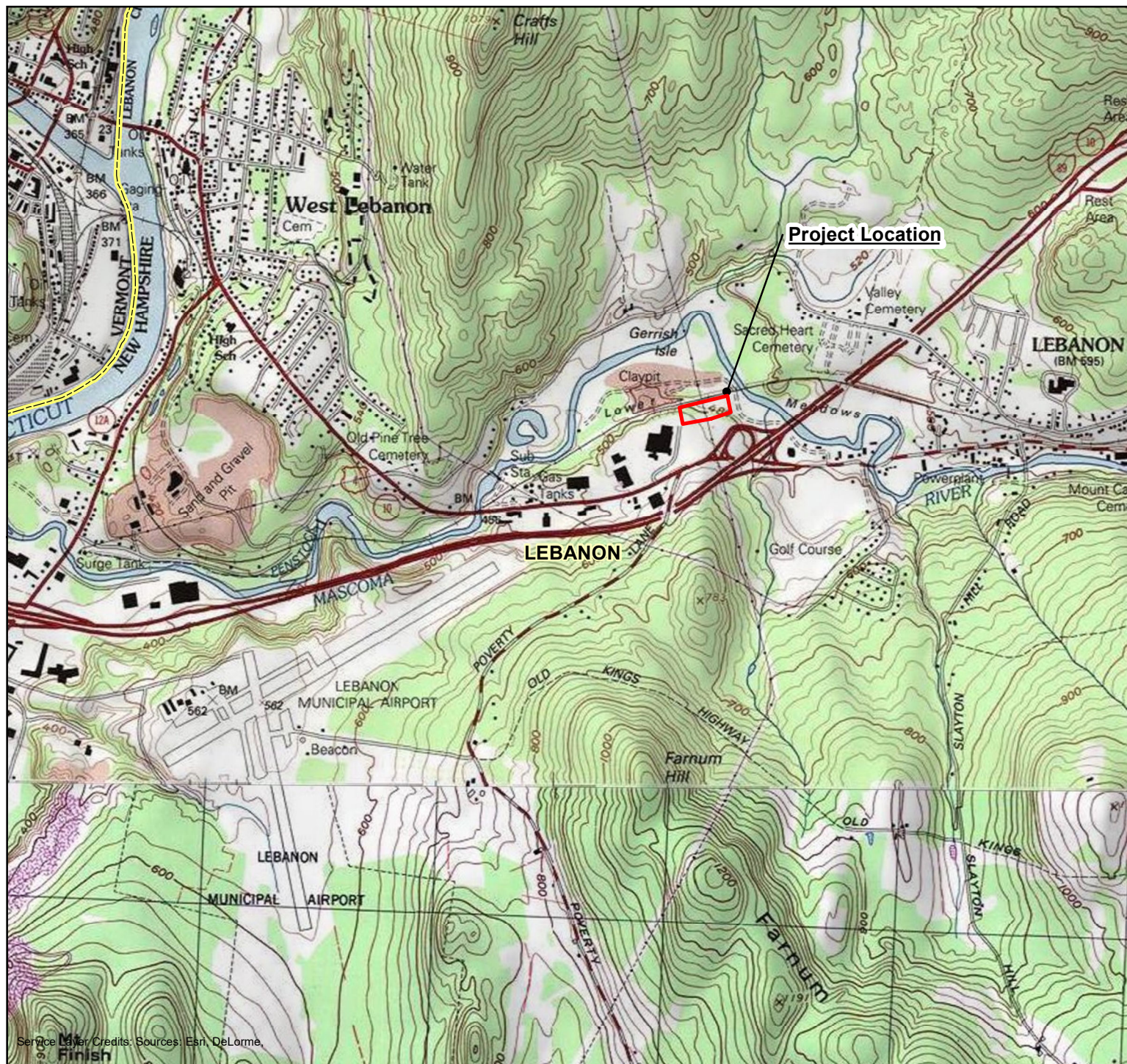
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Attachment F: USGS Topographic Project Location Map (1"=2000' Scale)



**USGS Overview Map
Timken Aerospace
Stormwater Outfall
Erosion Repair Project
Lebanon, NH**

Date: 11/14/2022



1 in equals 2,000 feet

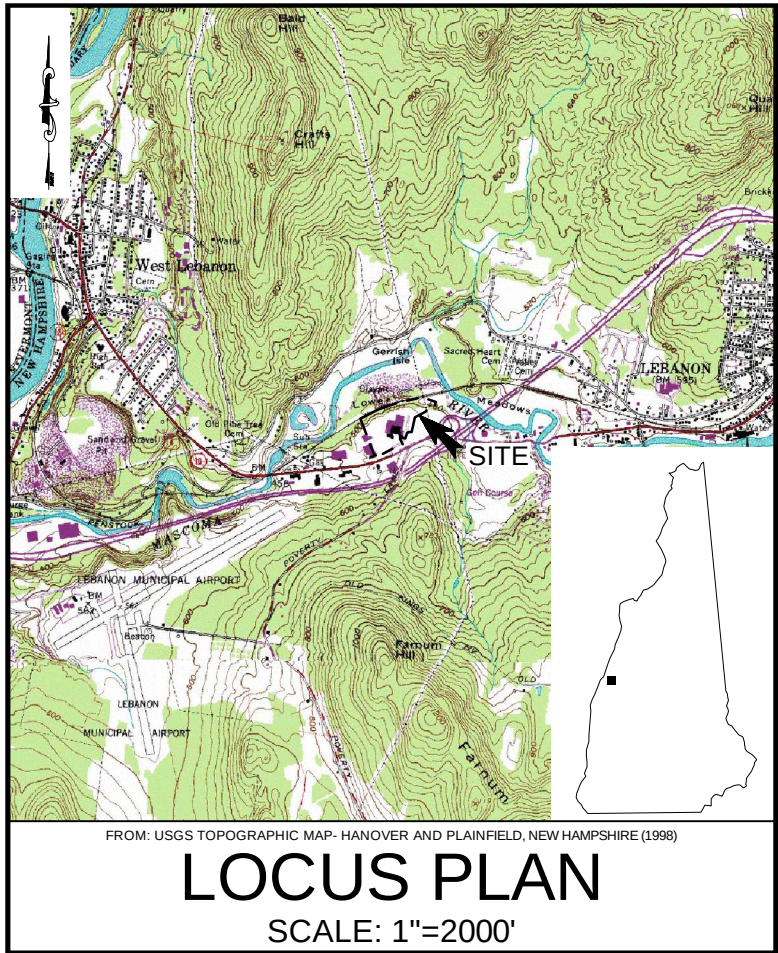
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Attachment G: Final Plans

STORMWATER OUTFALL EROSION REPAIRS ENGINEERING DRAWINGS TIMKEN AEROSPACE

LEBANON, NEW HAMPSHIRE
NOVEMBER 2022



SHEET INDEX

SHEET 1	OVERALL SITE PLAN
SHEET 2	EXISTING CONDITIONS PLAN
SHEET 3	PROPOSED CONDITIONS PLAN
SHEET 4	TURF REINFORCEMENT MAT DETAILS
SHEET 5	EROSION CONTROL DETAILS AND SPECIFICATIONS



ISSUED FOR WETLANDS
PERMIT APPLICATION REVIEW
NOT FOR CONSTRUCTION

PREPARED FOR:

TIMKEN
TIMKEN AEROSPACE
LEBANON, NEW HAMPSHIRE

PREPARED BY:

SANBORN  HEAD

20 FOUNDRY STREET, CONCORD, NEW HAMPSHIRE 03301
(603) 229-1900 FAX (603) 229-1919

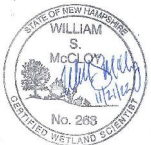
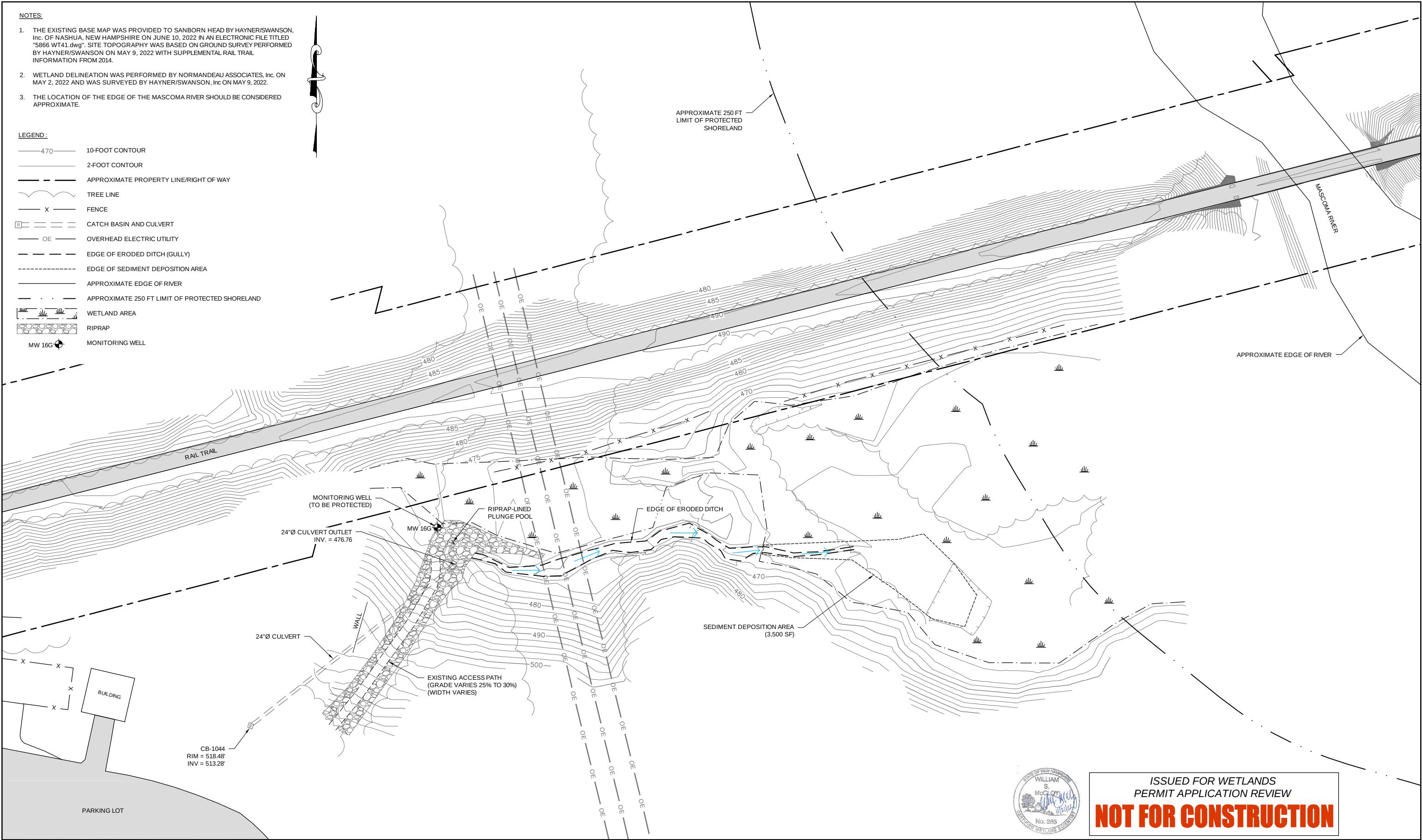
© 2022 SANBORN HEAD & ASSOCIATES, INC.
MAKES: P:\3030\3030.dwg DATE: 11/09/2022 BY: E. STEINHAUSER
XREF: P:\3030\3030.dwg DATE: 11/09/2022 BY: E. STEINHAUSER
FILE: P:\3030\3030.dwg DATE: 11/09/2022 BY: E. STEINHAUSER
LAYOUT: 02 - Existing Conditions
PLOT DATE: 11/23/22 10:04 AM

NOTES:

1. THE EXISTING BASE MAP WAS PROVIDED TO SANBORN HEAD BY HAYNER/SWANSON, Inc. OF NASHUA, NEW HAMPSHIRE ON JUNE 10, 2022 IN AN ELECTRONIC FILE TITLED "5866 WT41.dwg". SITE TOPOGRAPHY WAS BASED ON GROUND SURVEY PERFORMED BY HAYNER/SWANSON ON MAY 9, 2022 WITH SUPPLEMENTAL RAIL TRAIL INFORMATION FROM 2014.
2. WETLAND DELINEATION WAS PERFORMED BY NORMANDEAU ASSOCIATES, Inc. ON MAY 2, 2022 AND WAS SURVEYED BY HAYNER/SWANSON, Inc. ON MAY 9, 2022.
3. THE LOCATION OF THE EDGE OF THE MASCOMA RIVER SHOULD BE CONSIDERED APPROXIMATE.

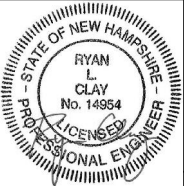
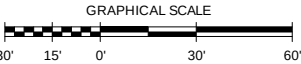
LEGEND:

- 10-FOOT CONTOUR
- 2-FOOT CONTOUR
- APPROXIMATE PROPERTY LINE/RIGHT OF WAY
- TREE LINE
- FENCE
- CATCH BASIN AND CULVERT
- OVERHEAD ELECTRIC UTILITY
- EDGE OF ERODED DITCH (GULLY)
- EDGE OF SEDIMENT DEPOSITION AREA
- APPROXIMATE EDGE OF RIVER
- APPROXIMATE 250 FT LIMIT OF PROTECTED SHORELAND
- WETLAND AREA
- RIPRAP
- MONITORING WELL



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SANBORN HEAD



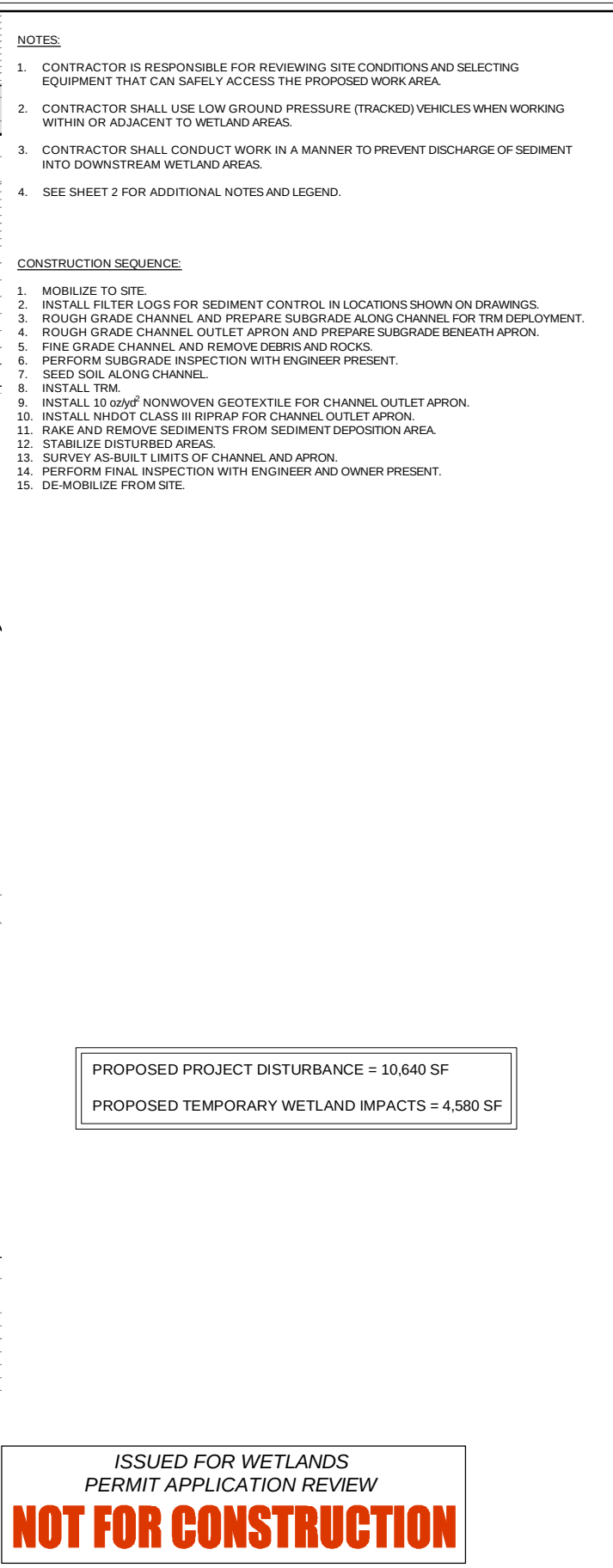
NO.	DATE	DESCRIPTION	BY

DRAWN BY: O. HERNANDEZ
DESIGNED BY: O. HERNANDEZ
REVIEWED BY: R. CLAY
PROJECT MGR: R. CLAY
PIC: E. STEINHAUSER
DATE: NOVEMBER 2022

STORMWATER OUTFALL EROSION REPAIRS
TIMKEN AEROSPACE
336 MECHANIC STREET
LEBANON, NEW HAMPSHIRE

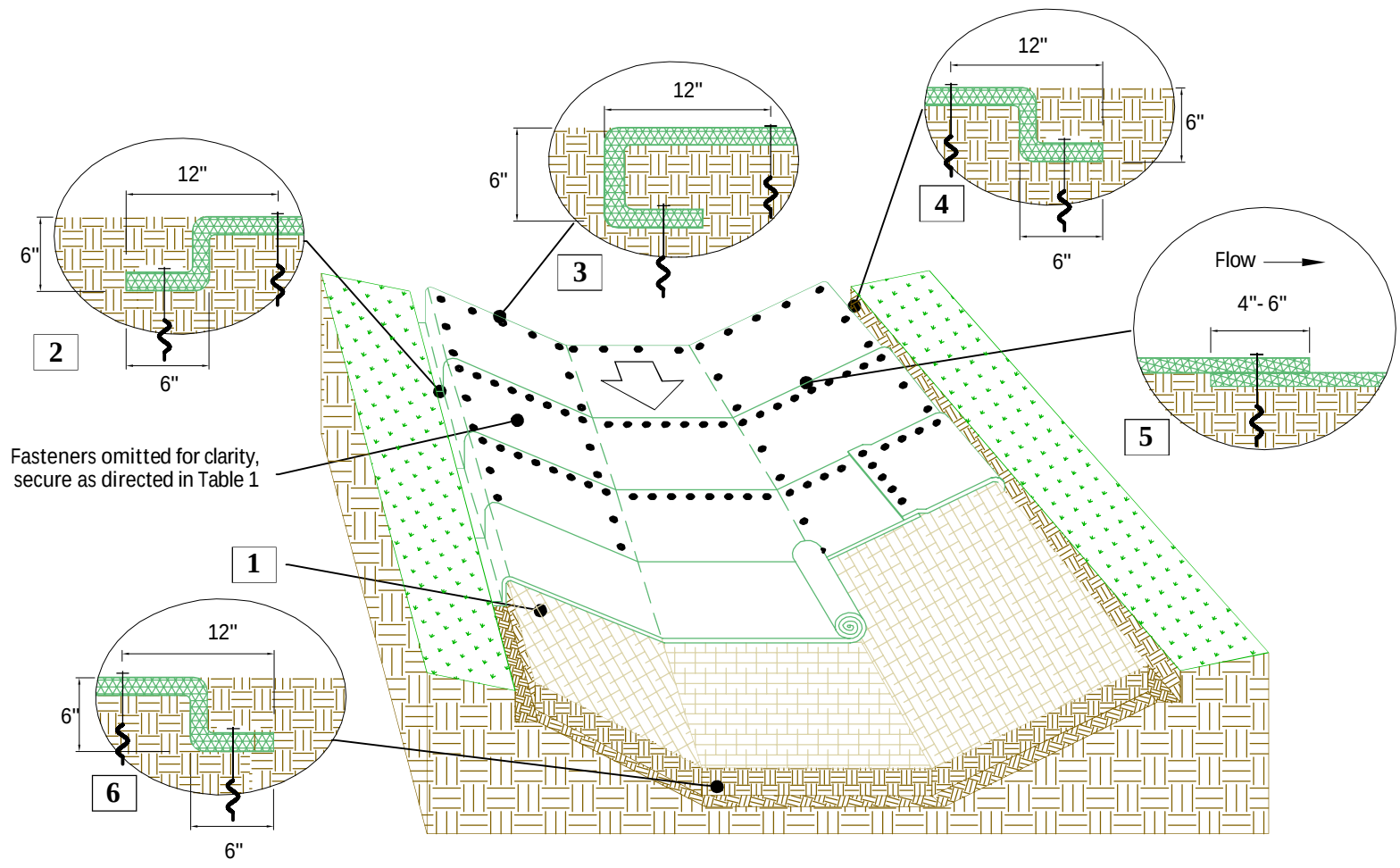
EXISTING CONDITIONS PLAN

PROJECT NUMBER:
5165.00
SHEET NUMBER:
2 OF 5



Page 69 of 170

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PLOT DATE: 11-21-22 10:04 AM
FILE: P:\1650\1650.dwg
LAYOUT: 294x4
PLOT DATE: 11-21-22 10:04 AM
X:\WPB - PROJECTS\1650\1650.dwg
LAYOUT: 294x4
PLOT DATE: 11-21-22 10:04 AM



Fasteners omitted for clarity, secure as directed in Table 1

TURF REINFORCEMENT MAT INSTALLATION

1
NOT TO SCALE

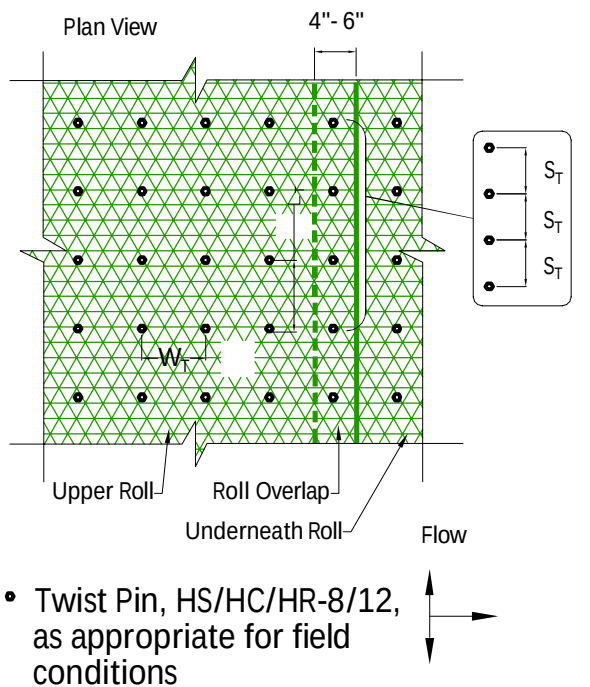
NOTES:

- Turf Reinforcement Mat details were provided by Western Green on September 14, 2022 in an electronic file titled "WG RECP Install Layouts R4.dwg".
- Turf Reinforcement Mat shall be 8-foot wide ROLLMAX P550 by North American Green or similar approved by engineer.
- Horizontal pin spacing should be altered if necessary to allow pins to secure the critical points along the channel surface.

Instructions

- Prepare soil (fig. 1) before installing Turf Reinforcement Mat (TRM), including any necessary application of lime, fertilizer, and seed. Ground surface must be free of debris, rocks, clay clods and raked smooth sufficient to allow intimate contact of the TRM with the soil over the entirety of the installation. Apply seed and amendments to the compacted soil.
- Dig anchor trench, 6" deep X 6" wide, at the upstream most edge of installation across the channel. Begin at the top of the channel by unrolling the TRM across the channel, perpendicular to the direction of flow, cut to fit. Carefully flip the TRM panel upstream, leaving it upside down. Place the upside down leading edge in the trench. Anchor the TRM panel with a row of twist pins spaced at S_T apart in the bottom of the trench. Backfill and compact the trench after fastening. With the TRM secured in the backfilled trench, flip the TRM panel over, right side up, over the backfill. The end result should mimic fig. 2. Secure TRM just downstream of trench with a row of twist pins located approximately 12" downstream from the trench, spaced at S_T .
- Roll subsequent TRM panels across the channel, fitting the downstream panel under the upstream panel. TRM shall be unrolled with appropriate side against the soil surface. All TRM must be securely fastened to soil surface by placing twist pins in appropriate locations as shown in the pin pattern guide.
- Place consecutive TRM end-over-end (Shingle style) with a 4" - 6" overlap, see fig.6. Secure overlaps as shown.
- Adjacent TRM must be overlapped approximately 4" - 6" and secured with twist pins at S_T .
- The terminal end of the TRM must be anchored with a row of twist pins spaced at S_T apart in a 6" deep X 6" wide trench (minimum). Backfill and compact the trench after stapling.
- Secure fasteners throughout the body of the mats. Fasteners should provide a minimum of sixty pounds of pullout resistance. Falcon HC-8 or HS-8 are typically adequate. In loose soils, longer twist pins may be necessary, HC-12 or HS-12. In hard or rocky soils, hardened spikes (12" Ardox) or Falcon HR-8 / HR- 12 pins may be used, assuming minimum pullout resistance is achieved. Bio-degradable fasteners shall not be used with TRM or HPTRM materials.

Pin Pattern Guide



- Twist Pin, HS/HC/HR-8/12, as appropriate for field conditions

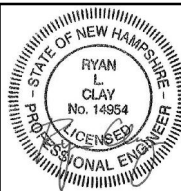
Table 1

Dimension	Pin Pattern
E	
W_T	20" (50 cm)
L_T	20" (50 cm)
S_T	18" (45 cm)
Nominal Frequency	3.8/SY (4.6/Sm)
Required Fastener	Min. 60# Pullout

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NOT FOR CONSTRUCTION



SCALE: AS NOTED



NO.	DATE	DESCRIPTION	BY

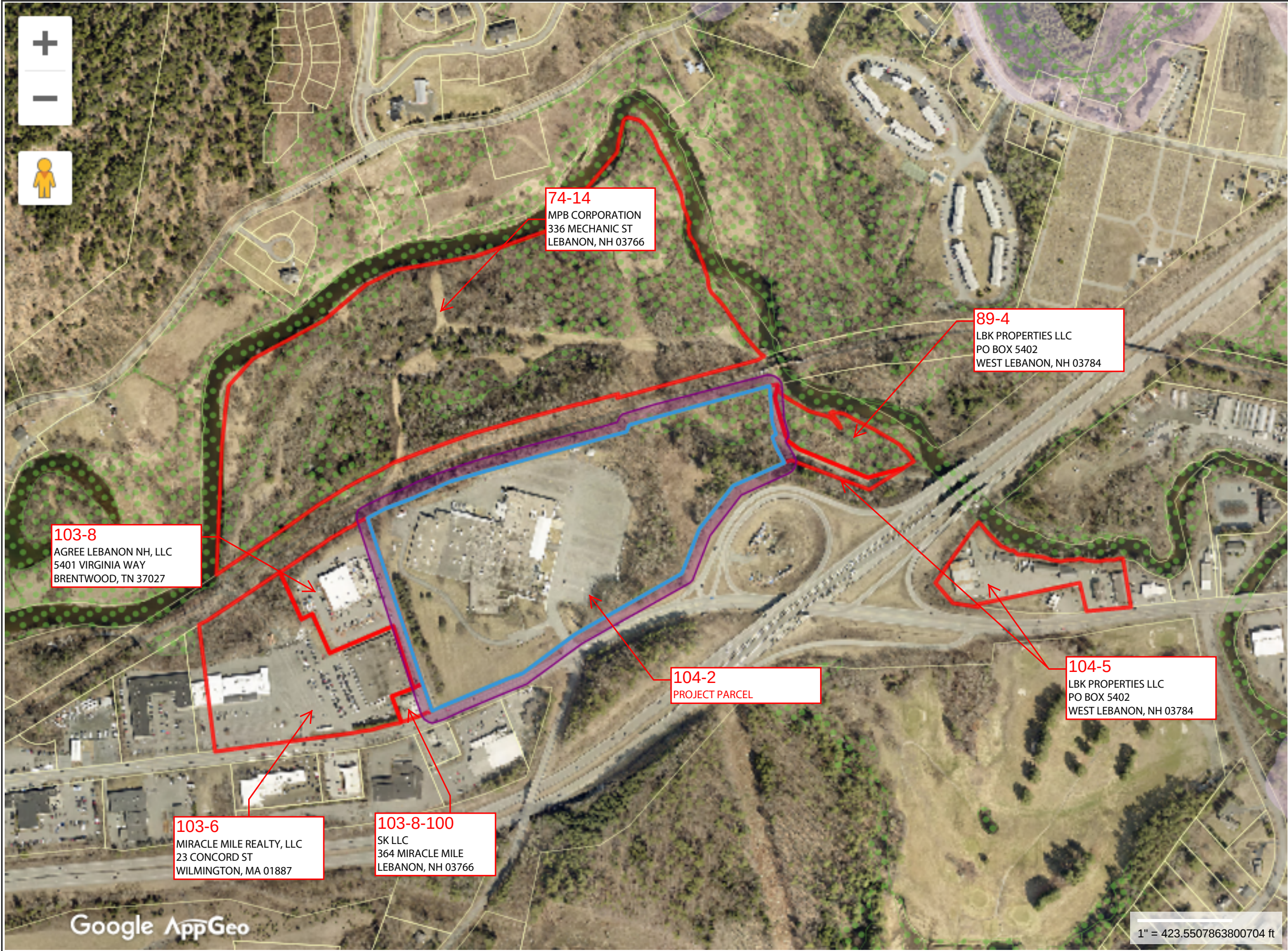
DRAWN BY: O. HERNANDEZ
DESIGNED BY: O. HERNANDEZ
REVIEWED BY: R. CLAY
PROJECT MGR: R. CLAY
PIC: E. STEINHAUSER
DATE: NOVEMBER 2022

STORMWATER OUTFALL EROSION REPAIRS
TIMKEN AEROSPACE
336 MECHANIC STREET
LEBANON, NEW HAMPSHIRE
TURF REINFORCEMENT MAT DETAILS

PROJECT NUMBER:
5165.00
SHEET NUMBER:
4 OF 5

Attachment H: Parcel and Abutter Map and List of Abutters with Mailing Addresses and Proof of Mailing (Certified Mail Slips)

Timken, Parcel Abutter Map v2



Property Information	
Property ID	104-2
Location	336 MECHANIC ST
Owner	SPLIT BALLBEARING

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

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

Geometry updated 12/29/2021
Data updated 11/18/2018

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

Map Theme Legends

Wetlands

-  Wetland
-  100 ft High Value Wetland Buffer

MPB CORPORATION
336 MECHANIC ST
LEBANON, NH 03766

LBK PROPERTIES LLC
PO BOX 5402
WEST LEBANON, NH 03784

MIRACLE MILE REALTY, LLC
23 CONCORD ST
WILMINGTON, MA 01887

AGREE LEBANON NH, LLC
5401 VIRGINIA WAY
BRENTWOOD, TN 37027

SK LLC
364 MIRACLE MILE
LEBANON, NH 03766

LBK PROPERTIES LLC
PO BOX 5402
WEST LEBANON, NH 03784

7022 0410 0000 4216 2555

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WILMINGTON, MA 01887

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LEBANON, NH 03766

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11/21/2022

Attachment I: Normandeau Associates Wetland Delineation Summary Report

Mapping

Photographs

Wetland Data Forms

Function and Value Forms

In addition to the report, we have included:

Brief Review of Historical Mapping

June 17, 2022

Mr. Ryan Clay, PE
Sanborn Head Inc.
20 Foundry St
Concord, NH 03301

Re: Wetland Delineation Summary Report
Timken Aerospace Site
336 Mechanic St, Lebanon, NH 03766
Normandeau Project # 24709.000

Dear Ryan:

At your request, Normandeau Associates, Inc. (Normandeau) conducted a wetland delineation at the site along 366 Mechanic St (see Site Location Map in Attachment 1) in Lebanon, New Hampshire (hereafter, the “site(s)” or “study area(s)”). The work was completed on May 2, 2022, to delineate the boundary of, and document existing conditions within any wetlands located downslope of the culvert where erosion control measures are being considered.

A summary of the site characteristics, methodology, and results of the wetland delineation are provided below.

SITE CHARACTERISTICS AND STUDY AREA

The study area was reviewed in the field and includes an existing stormwater outfall culvert where alterations intended to address erosion control issues are being considered. The study area also includes a gently terraced area within an existing powerline corridor, and a mapped floodplain area that extends in a northeasterly direction towards the Mascoma River. The study area is bounded to the north by a rail trail embankment and to the east by a ditched drainage that corresponds with the edge of the parcel within which the wetland delineation occurred. A steep gravel access path leads down from the Timken Aerospace parking lot directly above the culvert, which may be suitable for use as an access. Topography in the area generally slopes down west to east with steeper slopes east and gentler slopes west of the culvert.

The upland areas on site included a mixture of hardwood and softwood species including red maple (*Acer rubrum*), black cherry (*Prunus serotina*), white pine (*Pinus strobus*), and green ash (*Fraxinus pennsylvanica*). Herbaceous and shrubby species observed on site included extensive areas of the invasive shrub Morrow's honeysuckle (*Lonicera morrowii*) as well as pin cherry (*Prunus pensylvanica*), asters, goldenrods, intermediate woodfern (*Dryopteris intermedia*) and spotted touch-me-not (*Impatiens capensis*).

The Natural Resource Conservation Service (NRCS) has mapped the area as primarily Rippowam fine sandy loam¹. These soils are poorly drained and generally associated with floodplains. Another notable soil present was Windsor loamy sand 15-60 percent slopes, which is an excessively drained soil.

¹ U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey

WETLAND DELINEATION METHODOLOGY

William McCloy of Normandeau, a New Hampshire Certified Wetland Scientist (NHCWS #268) and Professional Wetland Scientist (PWS), reviewed the site for wetlands. Wetland boundaries were delineated according to the 1987 *Corps of Engineers Wetland Delineation Manual* and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)*, which utilize the three-parameter approach (i.e., evaluating the site for the presence of hydric soils, hydrophytic vegetation and wetland hydrology) for identifying wetlands and determining their jurisdictional limits^{2,3}. The 1987 Corps Manual and the Regional Supplement describe the methodology that is required for wetland delineations that are subject to review under the NHDES Wetland Rules (Env-Wt 406.01). The wetland boundaries were flagged with pink "Wetland Delineation" flagging. The flags for each wetland are sequentially numbered and remain at the site. Flags were GPS-surveyed at the time of delineation. Data from paired U.S. Army Corps of Engineers (USACE) data plots were collected to document representative wetland boundary information.

WETLAND CHARACTERISTICS

One wetland was delineated within the study area. A sketch map of the wetland area is included in Attachment 2. A brief description of the wetland is included below, and representative photos are included in Attachment 3. A pair of USACE data plots for selected wetland are included in Attachment 4 and Highway Methodology Function and Value forms for LW1 are included in Attachment 5.

Wetland LW1

The wetland is terraced, the upper part located underneath the power line alongside the eroded outfall and the lower terrace is a floodplain with relic channels. The wetland is classified as a palustrine, forested/emergent wetland with broad-leaved deciduous and emergent perennial species that is seasonally flooded, saturated (PFO1/EM1E, 50/50%) according to the 1979 Cowardin wetland classification system⁴. The upper portion is flanked and parallel to the south by an eroded ditch/gully, originating from the culvert outfall, along most of its length. The lower portion of the wetland drains towards LS1 which is a straightened ditch/drainage that leads via a culvert under a road/sewer ROW to the Mascoma River. Woody species observed in the wetland include boxelder maple (*Acer negundo*) and Morrow's honeysuckle. Common herbaceous species include spotted touch-me-not, woolgrass (*Scirpus cyperinus*), cattail (*Typha angustifolia*), sensitive fern (*Onoclea sensibilis*), smooth goldenrod (*Solidago gigantea*), and multiple sedges (*Carex* sp.) including what is likely *C. lacustris*. Soils observed within the wetland were hydric and included a dark A/O horizon underlain by a depleted, loamy B-horizon; some evidence of oxidation was present. Hydrology indicators included sediment deposits, oxidized rhizospheres on living roots, and water-stained leaves. The wetland provides floodflow alteration and sediment/toxicant retention; and is suitable for sediment/shoreline stabilization, functions, wildlife habitat (especially away from the developed areas), groundwater discharge, production export, and nutrient retention. A USACE wetland data form was completed in this wetland along with a form for the adjacent upland area (see Attachment 4).

DRAINAGE CHARACTERISTICS

² U.S. Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiments Station.

³ U.S. Army Corps of Engineers. 2011. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)*, ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

⁴ Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online. <http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm> (Version 04DEC1998).

Three drainages were mapped within the study area; none of these appear to be natural streams. These features were all likely the result of human interventions on the landscape and/or showed signs of human alterations. The primary human influence is the stormwater outfall (LS2) which has been heavily armored with rock and rip-rap and which has eroded a large gully through the upper terrace of wetland LW1. A second gully (LS3) originates in the upper terrace of LW1 and connects to the lower portion of the wetland. A third drainage feature (LS1) is a straightened ditch parallel to a road/sewer ROW that leads to a culvert with an outlet in the bank of the Mascoma River. Details are included below.

DRAINAGE LS1

LS1 appears to be a straightened and excavated drainage along the eastern edge of LW1 and serves as the outlet to the wetland; it is difficult to determine if it is natural or whether it was excavated in the past when the adjacent road/sewer ROW was established. It is characterized as ephemeral and likely only flows during flooding or following heavy rains or snowmelt events. No water or flow was present at the time of the delineation. This feature also may convey water back into LW1 during flood events along the Mascoma River and drains LW1 when it's flooded or when stormwater inputs are excessive.

DRAINAGE LS2

LS2 is the primary drainage feature in the study area and is currently the primary conveyance of stormwater from the outfall through and into LW1. This drainage is deeply eroded and incised with nearly vertical banks ranging from 4 to 5 feet high near the plunge pool/stormwater outlet and gradually dispersing until the channel dissipates at a delta of eroded sediment within the lower tier of wetland LW1. The drainage averages 12 feet in width, generally decreasing towards the end of the channel. It is characterized as ephemeral and likely only flows during flooding or following heavy rains or snowmelt events, carrying stormwater from the Timken Aerospace parking lot to the wetland terrace. No water or flow was present at the time of the delineation. The uppermost portions of the drainage are heavily armored with rock and rip-rap.

DRAINAGE LS3

LS3 is located within LW1 and connects the upper terrace of LW1 to the lower terrace. It appears to be an eroded gully likely associated with the stormwater outfall that is now bypassed by LS2 (see above). Evidence of a headcut is present and it exhibited steep banks; albeit less severe than those present within LS2. It does not appear that this drainage has conveyed surface water in the recent past. It is characterized as ephemeral and likely only flows during flooding or following heavy rains or snowmelt events. No water or flow was present at the time of the delineation.

OTHER OBSERVATIONS

No vernal pools or conspicuous wildlife or wildlife habitat were observed within the study area. Deer sign (tracks) and small mammals common to western New Hampshire, including squirrel and raccoon tracks, were observed.

Please let me know if you have any questions or need additional information.

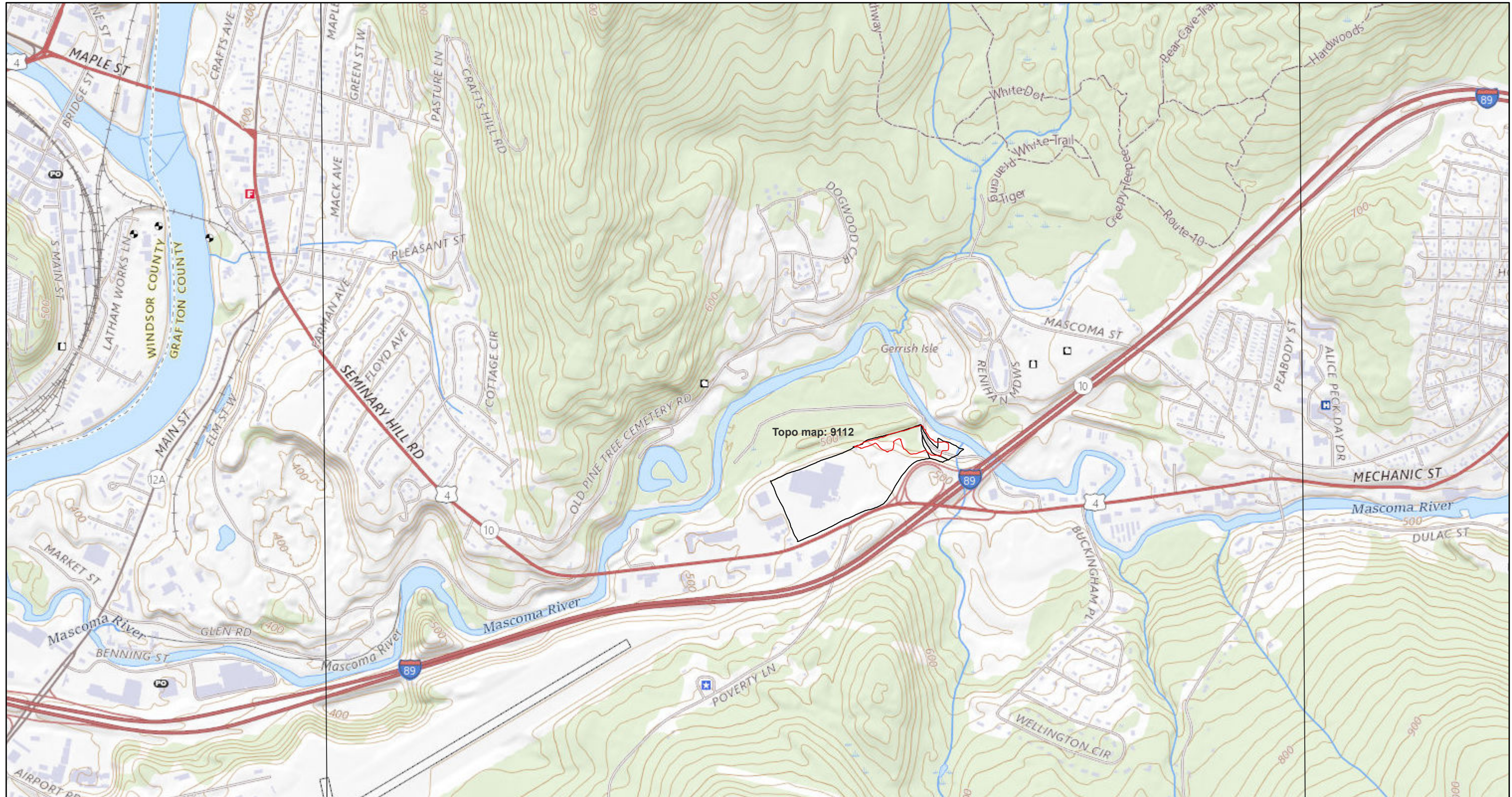
Sincerely,
NORMANDEAU ASSOCIATES INC.



Attachments.

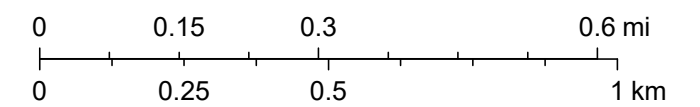
**Attachment 1.
USGS Location Map**

Timken Aerospace Property



May 27, 2022

1:18,056



USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS

**Attachment 2.
Wetland Delineation Sketch**



**Attachment 3.
Photographs**



Photo 1. LW1 outfall overview from trail.



Photo 2. LW1 overview from slope.



Photo 3. LW1 overview from slope, viewing towards outfall.



Photo 4. LW1, viewing northeast.



Photo 5. LW1, near F11, viewing south.



Photo 6. LW1, viewing east.



Photo 7. LW1 lower area.



Photo 8. LW1 lower area, sediment deposit at end of LS2.



Photo 9. LS1 outfall to Mascoma River (end).



Photo 10. LS2 at outfall.



Photo 11. LS2 mid-channel, upper.



Photo 12. LS2 mid-channel, lower.



Photo 13. LS2 end, sediment fan.



Photo 14. LS3 upper end.



Photo 15. LS3 lower end.



Photo 16. Mascoma shoreland, as seen from bridge trail.



Photo 17. Timken Aerospace parking lot, at beginning of steep gravel access trail to outfall.



Photo 18. Gravel path to outfall, directly off of Timken Aerospace parking lot.

**Attachment 4.
US Army Corps of Engineers Wetland Paired Plots**

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Timken Aerospace City/County: Lebanon, Grafton County Sampling Date: 5.2.22
 Applicant/Owner: Timken Aerospace LLC. State: NH Sampling Point: LW1 Wet
 Investigator(s): William McCloy, CWS. Section, Township, Range: _____

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope %: 1-3

Subregion (LRR or MLRA): LRR R Lat: 43.6399123 Long: -72.2812255 Datum: WGS-1984

Soil Map Unit Name: RIPPOWAM - Fine Sandy Loam Floodplain Soil NWI classification: PEM1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
_____ Surface Water (A1)	<u>X</u> Water-Stained Leaves (B9)	_____ Surface Soil Cracks (B6)	
_____ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Drainage Patterns (B10)	
_____ Saturation (A3)	_____ Marl Deposits (B15)	_____ Moss Trim Lines (B16)	
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Dry-Season Water Table (C2)	
<u>X</u> Sediment Deposits (B2)	<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	_____ Crayfish Burrows (C8)	
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Saturation Visible on Aerial Imagery (C9)	
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Stunted or Stressed Plants (D1)	
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ Geomorphic Position (D2)	
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	_____ Shallow Aquitard (D3)	
_____ Sparsely Vegetated Concave Surface (B8)		_____ Microtopographic Relief (D4)	
		<u>X</u> FAC-Neutral Test (D5)	

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: LW1 Wet

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>20</u></td> <td>x 1 = <u>20</u></td> </tr> <tr> <td>FACW species <u>71</u></td> <td>x 2 = <u>142</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>1</u></td> <td>x 4 = <u>4</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>92</u> (A)</td> <td><u>166</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.80</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>20</u>	x 1 = <u>20</u>	FACW species <u>71</u>	x 2 = <u>142</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>1</u>	x 4 = <u>4</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>92</u> (A)	<u>166</u> (B)	Prevalence Index = B/A = <u>1.80</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>20</u>	x 1 = <u>20</u>																			
FACW species <u>71</u>	x 2 = <u>142</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>1</u>	x 4 = <u>4</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>92</u> (A)	<u>166</u> (B)																			
Prevalence Index = B/A = <u>1.80</u>																				
=Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																				
1. <u>Prunus</u>	<u>1</u>	<u>No</u>	<u>FACU</u>																	
2. <u>Cornus sericea</u>	<u>1</u>	<u>No</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover																				
Herb Stratum (Plot size: <u>3'</u>)																				
1. <u>Solidago gigantea</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Impatiens capensis</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Scirpus cyperinus</u>	<u>10</u>	<u>No</u>	<u>OBL</u>																	
4. <u>Carex lacustris</u>	<u>10</u>	<u>No</u>	<u>OBL</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
=Total Cover																				
Woody Vine Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
=Total Cover																				
Hydrophytic Vegetation Present? Yes <u>X</u> No _____																				
Remarks: (Include photo numbers here or on a separate sheet.) Prunus and Cornus sericea, under saplings/shrubs, are both trace or less than 1 %. Early season conditions present, some plants difficult to identify to species.																				

Sampling Point LW1 Wet

Northcentral and Northeast Region – Version 2.0
Page 99 of 170

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Timken Aerospace City/County: Lebanon, Grafton County Sampling Date: 5.2.22
 Applicant/Owner: Timken Aerospace LLC. State: NH Sampling Point: LW1 UPL
 Investigator(s): William McCloy, CWS Section, Township, Range: _____

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): convex Slope %: 50-60

Subregion (LRR or MLRA): LRR R Lat: 43.6399123 Long: -72.2812255 Datum: WGS-1884

Soil Map Unit Name: RIPPOWAM - Fine Sandy Loam Floodplain Soil NWI classification: PEM1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)	
☐ Saturation (A3)	☐ Marl Deposits (B15)	☐ Moss Trim Lines (B16)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Dry-Season Water Table (C2)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Crayfish Burrows (C8)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Stunted or Stressed Plants (D1)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Geomorphic Position (D2)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)	
☐ Sparsely Vegetated Concave Surface (B8)		☐ Microtopographic Relief (D4)	
		☐ FAC-Neutral Test (D5)	

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? Yes _____ No X Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

None, steep slope

VEGETATION – Use scientific names of plants.

 Sampling Point: LW1 UPL

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Prunus serotina</i></u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. <u><i>Pinus strobus</i></u>	<u>15</u>	<u>No</u>	<u>FACU</u>																	
3. <u><i>Acer rubrum</i></u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u><i>Fraxinus pennsylvanica</i></u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>95</u>	=Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>51</u></td> <td>x 2 = <u>102</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>131</u> (A)</td> <td><u>402</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.07</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>51</u>	x 2 = <u>102</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>131</u> (A)	<u>402</u> (B)	Prevalence Index = B/A = <u>3.07</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>51</u>	x 2 = <u>102</u>																			
FAC species <u>20</u>	x 3 = <u>60</u>																			
FACU species <u>60</u>	x 4 = <u>240</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>131</u> (A)	<u>402</u> (B)																			
Prevalence Index = B/A = <u>3.07</u>																				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																				
1. <u><i>Fraxinus pennsylvanica</i></u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u><i>Prunus serotina</i></u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>10</u>	=Total Cover	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u>Problematic Hydrophytic Vegetation¹ (Explain)</u> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Herb Stratum (Plot size: <u>3'</u>)																				
1. <u><i>Dryopteris intermedia</i></u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u><i>Impatiens capensis</i></u>	<u>1</u>	<u>No</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>26</u>	=Total Cover	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
Woody Vine Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____	=Total Cover																	
Remarks: (Include photo numbers here or on a separate sheet.) Impatiens capensis, under the herb stratum, is designated as 1% cover, but is actually less than 1%, or trace.																				

SOIL

Sampling Point LW1 UPL

[illegible]

**Attachment 5.
US Army Corps of Engineers Highway Methodology
Function and Value Forms**

Wetland Functions and Values Data Sheet

Timken

Lebanon, NH

Wetland ID:	LW1	Delineator(s):	Bill McCloy
Cowardin Classification:	PFO1/EM1E, 50/50%	Survey Date:	May 2, 2022
Number of Flags:	49	Open Water:	No
Wetland Open/Closed	Closed	Wetland Open Details	
Associated Stream:	Yes	Stream ID:	
Vernal Pool/Potential	No	VP/PVP ID:	
Vernal Pool Identified:			
Wetland Description:	Terraced wetland, upper part under powerline with eroded outfall, lower terrace a floodplain with relic channels,		

Functions and Values:

Groundwater Recharge/Discharge	Suitable
Floodflow Alteration	Principal
Fish/Shellfish Habitat	No
Sediment/Toxicant Retention	Principal
Nutrient Removal/Retention	Suitable
Production Export	Suitable
Sediment/Shoreline Stabilization	Suitable
Wildlife Habitat	Suitable
Recreation	No
Education/Scientific Value	No
Uniqueness/Heritage	No
Visual Quality/Aesthetics	No
Rare/Threatened and Endangered Species	No
Other	no

Dominant Plants:

Tree

Acer negundo

Sapling/ Shrub

Lonicera morrowii

Herb/Seedling

Scirpus cyperinus Typha angustifolia Onoclea sensibilis Impatiens capensis Calamagrostis canadensis Solidago gigantea

Woody Vine

Vitis riparia

Invasives

Lonicera morrowii Berberis thunbergii

Soils:

Texture: Loamy
Parent Material: Alluvium
Restrictive Layer: No
Hydric Soil Indicator(s): A11. Depleted below dark surface
Soil Notes:

Location:



,

Special wetland type/Unique Swamp:

Wetland Comments:

NHDES Priority Resource Area / USACE Special Aquatic Site?

Wildlife:

List of observed wildlife: Deer, ticks

List of Potential Wildlife Typical species for area

Evidence of wildlife: Tracks

Wildlife and Habitat Comments: Tracks

Photos:



Photo 1. LW1 viewing east towards Mascoma River.



Photo 2. LW1 viewing west in general direction of outfall.

Wetland Function- Value Evaluation Form

Total area of wetland? 1.44 acres Human made? No Is wetland part of a wildlife corridor? ☒ or a "habitat island"? ☐

Adjacent land use Industrial, rail trail, woodland, river Distance to nearest roadway or other development 150"

Dominant wetland systems present PFO1/EM1E Contiguous undeveloped buffer zone present No

Wetland ID LW1

Latitude 43.6399123 Longitude -72.2812255

Prepared by: wmcclloy_NA Date 05/02/2022

Wetland Impact:

Type Area

Evaluation based on:

Office ☒ Field ☒

Corps manual wetland delineation

completed? Y ☒ N ☐

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

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

Function/Value	Suitability Y/N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
 Groundwater Recharge/Discharge	Y	2,4,15	☐	
 Floodflow Alteration	Y	3,4,7,10	☒	Takes heavy parking lot runoff during storm events
 Fish and Shellfish Habitat	N		☐	
 Sediment/Toxicant Retention	Y	1,2,3	☒	Takes heavy parking lot runoff during storm events
 Nutrient Removal	Y	3,7,8	☐	
 Production Export	Y	1,7	☐	
 Sediment/Shoreline Stabilization	Y	2,3	☐	
 Wildlife Habitat	Y	6,7,13,17	☐	
 Recreation	N		☐	Limited, near rail trail but private prop
 Educational/Scientific Value	N		☐	
 Uniqueness/Heritage	N		☐	
 Visual Quality/Aesthetics	N		☐	
 ES Endangered Species Habitat	N		☐	
Other	no			

Notes:

* Refer to backup list of numbered considerations.

FUNCTIONS/ VALUES	SUITABILITY (Y/N)	RATIONALE (Reference #)	PRINCIPAL FUNCTION/VALUE? (Y/N)	IMPORTANT NOTES
1	5.4			
2	N		☐	
3	N		☐	
4	Y	3,4,7,10	☒	Takes heavy parking lot runoff during storm events
5	Y	2,4,15	☐	
6	N		☐	
7	Y	3,7,8	☐	
8	Y	1,7	☐	
9	N		☐	
10	Y	1,2,3	☒	Takes heavy parking lot runoff during storm events
11	Y	2,3	☐	
12	N		☐	
13	N		☐	Limited, near rail trail but private prop
14	Y	6,7,13,17	☐	

Notes:

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

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

www.des.nh.gov

Review of Historical Mapping

Normandeau reviewed historical topographic maps to determine whether a stream existed at the location of the eroded stormwater gully/outfall. Aerial photos back to 1992 were reviewed on Google Earth and were not of high enough resolution to see any substantial changes over time other than a general reforestation of the surrounding area. The project area is marked with an **X**. No historical stream channels are present on the historical maps; therefore, we assume that the eroded gully is man-made as a result of erosion from high flow stormwater discharge to the area.

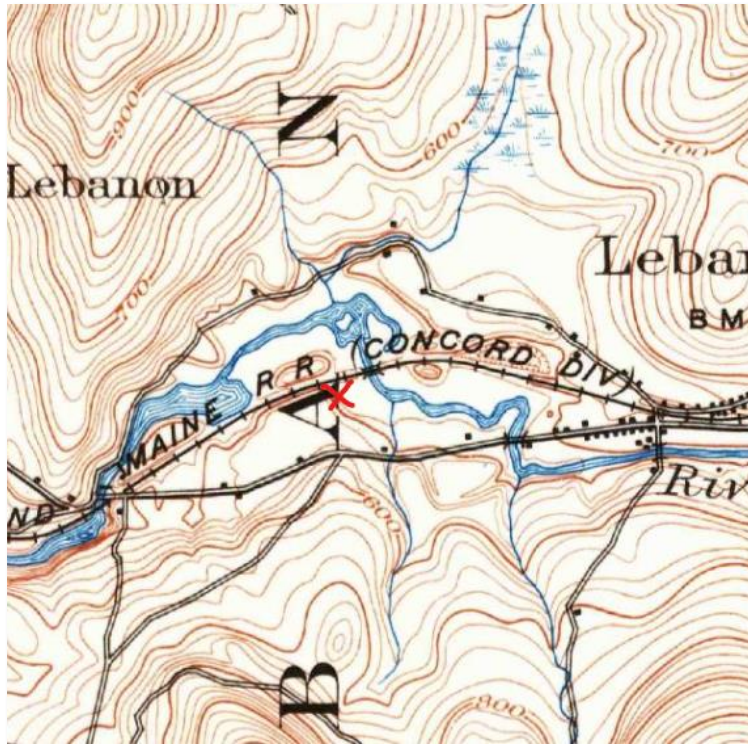


Figure 1. 1906 Map

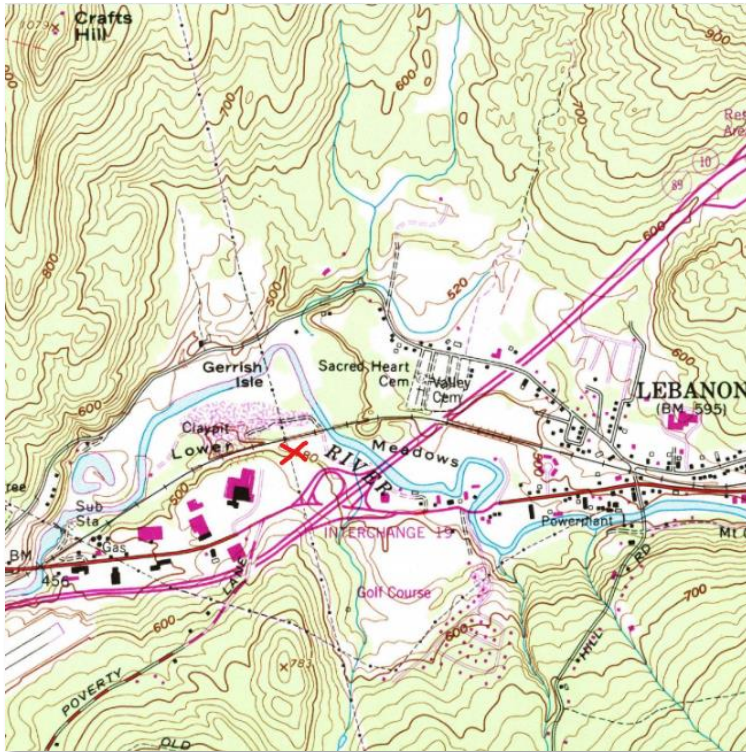


Figure 2. 1959 Map (note Timken Aerospace building is included)

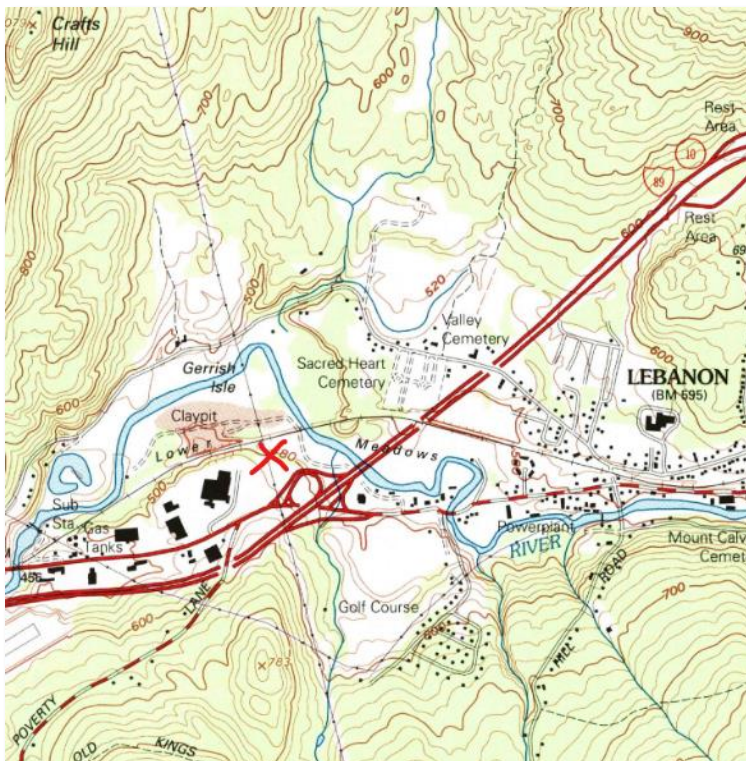


Figure 3. 1996 Map

Attachment J: Construction Sequence Narrative

The following construction sequence is proposed for the project:

16. Mobilize to Site.
17. Install Filter Logs for Sediment Control in locations shown on design drawings.
18. Rough Grade Channel and Prepare Subgrade Along Channel for TRM deployment.
19. Rough Grade Channel Outlet Apron and Prepare Subgrade Beneath Apron.
20. Fine Grade Channel and Remove Debris And Rocks.
21. Perform Subgrade Inspection with Engineer Present.
22. Seed Soil Along Channel.
23. Install TRM.
24. Install 10 oz/yd² Nonwoven Geotextile for Channel Outlet Apron.
25. Install NHDOT Class III Riprap for Channel Outlet Apron.
26. Rake and Remove Sediments from Sediment Deposition Area.
27. Stabilize Disturbed Areas.
28. Survey As-built Limits of Channel and Apron.
29. Perform Final Inspection with Engineer and Owner Present.
30. De-mobilize from Site.

The proposed repair work will be completed during dry periods to avoid the need for timber matting, which would be difficult to bring into the work area safely. Following completion of the TRM installation, wetland areas will be seeded with a wetland mix that is appropriate for the natural condition of the wetland.

Please refer to project plans, located in Attachment G, for additional details.

Attachment K: NH NHB Datacheck Letter

New Hampshire Natural Heritage Bureau

NHB DataCheck Results Letter

To: Michael McGowan
25 Nashua Rd
Bedford, NH 03110

From: NH Natural Heritage Bureau

Date: 4/14/2022 (This letter is valid through 4/14/2023)

Re: Review by NH Natural Heritage Bureau of request dated 4/14/2022

Permit Type: Not yet determined

NHB ID: NHB22-1407

Applicant: Michael McGowan

Location: Lebanon
Tax Map: 104-2, Tax Lot: 104-2
Address: 336 Mechanic St

Proj. Description: The project is to address an erosion problem with an existing stormwater outfall. The solution will likely require drainage swale improvements downgradient of the outfall, for an undetermined distance. The work footprint is not expected to be large, and the work is likely to take place in summer/fall 2022.

The NH Natural Heritage database has been checked 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. We currently have no recorded occurrences for sensitive species near this project area.

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.

Based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

New Hampshire Natural Heritage Bureau
NHB DataCheck Results Letter

MAP OF PROJECT BOUNDARIES FOR: NHB22-1407



Attachment L: A statement of whether the applicant has received comments from the local Board of Selectmen, local Conservation Commission, Local River Advisory Council, or Federal Agencies and, if so, how the applicant has addressed the comments

At this time, the project team has not engaged the local City Council, local Conservation Commission, Local River Advisory Council, or Federal Agencies to address the project in specific ways. USFWS IPaC review information has been submitted and the project team has received some feedback regarding the ideal sequence for submitting the permit application and details required for the US Corps of Engineers review of the permit application.

The project team plans to provide four complete copies of the permit application to the City of Lebanon Manager so they can be distributed to the City Council, Conservation Commission and Planning Board. A complete copy will also be provided to the Corps of Engineers.

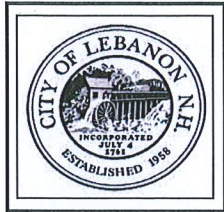
We expect that the project will require local review, and we anticipate working with the City of Lebanon to obtain the necessary approvals. Given the nature of the project which will repair an eroded stormwater gully, we expect the local government to be supportive of the work.

Feedback that would result in changes to the project plans or impacts will be provided to the NHDES and Corps of Engineers as needed.

**Agenda
Conservation Commission
December 8, 2022**

**Agenda Item #4A
Study Items**

Zoning Amendments – Review of proposed amendments to the Zoning Ordinance and Zoning Map



CITY OF LEBANON ~ PLANNING & DEVELOPMENT

MEMORANDUM

TO: Conservation Commission

FROM: Planning and Development Department Staff

RE: 2022-2023 Proposed Zoning Amendments

DATE: November 30, 2022

On October 5, 2022, Planning and Development Department staff presented to the City Council a set of proposed Zoning Ordinance amendments for initial consideration. Following the presentation, the City Council agreed to move the proposed amendments forward for further review.

Section 1000.3 ("Amendment Procedures"), subsection C requires review and comment by the Conservation Commission of any proposed zoning amendment:

All proposed [zoning] amendments shall be forwarded to the Planning Board and Conservation Commission. Planning Board and Conservation Commission shall place the proposed amendment on their agenda for discussion and comment at least thirty (30) days prior to the City Council public hearing. The Planning Board and Conservation Commission shall forward their comments and recommendations to the City Council at least seven (7) days prior to City Council public hearing.

The Conservation Commission's comments should be limited to the potential impact of the amendments on matters or concerns within the Commission's purview. However, Commission members are welcome to and should feel free to provide general comments or suggestions on any of the amendments in the members' individual capacity as a City resident. Comments may be provided to staff and/or to the City Council at the public hearing on the proposed amendments, to be scheduled in January.

For the Commission's reference and review, please find attached the following:

- A legal opinion from Christine Fillmore, Esq., dated November 15, 2022.
- A redline of the current Zoning Ordinance (redline last revised November 14, 2022).
- A staff memo to the City Council, dated September 27, 2022, providing a description of the proposed amendments.

Please note that staff has updated the redline in response to the Council's comments made at their October 5th meeting and in response to an initial review by the City's legal counsel. Consequently, and the page references in the 9/27/22 staff memo may no longer match the updated redline that is attached to this memo.

Once review has been completed by Conservation Commission and the other land use boards, the City Council will hold a public hearing in January followed by a vote on whether to adopt the amendments and/or to place them on the March 2023 ballot for voter approval.

November 15, 2022

Nathan Reichert
Director of Planning & Development
City of Lebanon
51 North Park St.
Lebanon, NH 03766

RE: Proposed Zoning Amendments

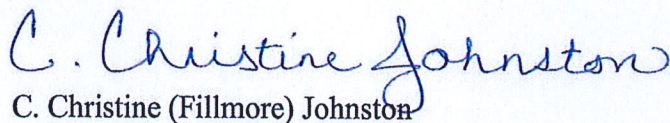
Mr. Reichert:

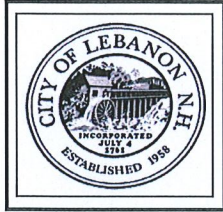
This is a legal opinion as required by Section 1000.3(B)(2) of the Lebanon Zoning Ordinance concerning a set of proposed text amendments. I have reviewed a staff memorandum regarding these proposals dated September 27, 2022, a draft of these amendments dated October 6, 2022, and a revised draft dated November 14, 2022, and now provide this opinion based on those documents.

The Ordinance requires this legal review to cover: (a) whether such amendments are within the authority delegated to the City under State law; (b) whether the form is appropriate; and (c) whether, from an administrative point of view, the amendments can be administered and enforced.

In this case, the answer to these three questions is "yes" and I discern no legal or administrative issues of concern.

Sincerely,


C. Christine (Fillmore) Johnston



CITY OF LEBANON ~ PLANNING & DEVELOPMENT

MEMORANDUM

TO: Lebanon City Council

CC: Shaun Mulholland, City Manager
David Brooks, Deputy City Manager

FROM: Planning and Development Department Staff

RE: 2022-2023 Proposed Zoning Amendments

DATE: September 27, 2022

Honorable Mayor and City Councilors,

The Planning and Development Department has prepared draft amendments to the Zoning Ordinance for consideration by the City Council, and requests that the proposed amendments be placed on the October 5, 2022 meeting agenda for discussion.

It is staff's practice to present a set of proposed zoning amendments to the Council each fall for review and consideration. Presenting in the fall allows the amendments to move through the required review process in time for placement on the ballot the following March, when necessary.

The current set of proposed amendments are summarized below and are highlighted in the attached redlined excerpt of the Zoning Ordinance. The new or revised text is blue and underlined. The text to be deleted is shown as ~~red with a strike-out~~.

If the Council chooses to move forward with staff's proposal, the draft amendments will be sent to the City's legal counsel and land use boards for further review. Once the review process is complete, the amendments will be scheduled for a public hearing before the City Council.

OVERVIEW OF AMENDMENTS

The proposed amendments are grouped into three general categories: amendments that require or may require placement on the March 2023 ballot for approval by the voters, text amendments that can be approved by the City Council, and a Zoning Map amendment that can be approved by the City Council.

A. BALLOT AMENDMENTS

The following amendments either directly or indirectly impact the residential district tables of uses and dimensional requirements. Consequently, the City's legal counsel will review to determine whether approval by the voters is required per Section 1000.4.A of the Zoning Ordinance. In some cases, only portions of an amendment will require placement on the ballot. Prior to the public hearing in January, the Council will need to determine whether the entirety of such amendments should be placed on the ballot or only those portions that require voter approval.

1. Adopt proposed Section 509 (“Cottage Developments”) (*see p. 12-13 of the redline*).

As specifically requested by the City Council in the April 21, 2022 directive to the City Manager, the purpose of this new section is to provide opportunities for single family housing that is small, energy efficient, and affordable, while promoting projects that ensure compatibility with surrounding land uses. Cottage developments are proposed to be allowed by conditional use on lots of at least one-half acre in size in the R-1, R-2, R-3, R-O, and R-O-1 Districts subject to the availability of appropriate utilities. To incentivize cottage development and help ensure economic viability, a higher density of 2,500 sq. ft. per unit is permitted. In return, the development must comply with the standards set forth in Section 509, which include limitations on building footprint and gross floor area for each unit, building design standards, minimum requirements with respect to common open space, and the screening of parking areas.

Adoption of the proposed cottage development section is specifically identified in the Master Plan as a strategy to help meet the Master Plan’s goal of providing a range of housing options that will support the City’s continued economic vitality and a diverse population. See 7.1.S15 (“Explore cottage or bungalow development strategies to promote, smaller, more energy-efficient, more affordable dwellings with limited size and footprint.”). Enabling cottage housing developments would help implement multiple additional strategies identified in the Master Plan including the following:

- Allow for appropriate infill and increased density within existing neighborhoods while preserving neighborhood character. (2.3.S1; 2.3.A1)
- Encourage diversification in neighborhoods. (7.1.S13; 7.1.S14; 7.1.S16; 7.2.S8)
- Encourage new housing to be located close to urban centers, employment areas, infrastructure, services, and transit and to positively contribute to existing neighborhoods. (2.2.S1; 7.1.A8; 7.1.S23; 7.1.S24)
- Identify neighborhoods that have the characteristics suitable as redevelopment areas or pods and assess whether zoning changes are needed to allow for infill or redevelopment. (2.3.A1)
- Review and amend the City’s Zoning Ordinance as needed to encourage more intensive redevelopment of existing residential and non-residential areas and to discourage development in undeveloped areas. (6.1.A7)
- Promote balanced land use that preserves the City’s outlying rural character and directs development toward its urban and densely settled residential cores. (2.1.S1; 2.2.S1; 2.2.S2)
- Guide development into existing areas as designated in the Land Use chapter to protect outlying rural areas and open space lands. (5.1.S1; 7.2.A7)

Related amendments include:

- **Section 205** to allow more than one principal building on a lot when proposed as part of a cottage development (*see p. 1 of the redline*).
- **Section 500** to add cottage development to the Planned Development table (*see p. 7 of the redline*).
- **Appendix A** to add definitions of cottage and cottage development (*see p. 20 of the redline*).

2. Revise the manufactured housing regulations, Sections 503 and 504 (*see p. 9-10 of the redline*). The Zoning Ordinance allows manufactured housing only when located within a manufactured housing park, a manufactured housing PURD, or a manufactured housing subdivision. Recognizing that manufactured housing is an avenue to affordable home ownership opportunities, the purpose of the proposed amendments to Sections 503 and 504 is to enable additional manufactured housing development within the City that is

comparable to the manufactured housing projects that already exist. To that end, the amendments:

- Increase the permitted density of a manufactured housing development to 5,000 sq. ft. per unit, which is approximately the average density of the City's three existing manufactured home parks; and
- Revise the manufactured housing park regulations and standards to more closely reflect existing conditions at the City's three existing manufactured housing parks, which were otherwise substantially out of compliance with the requirements of Section 503.

Also, since there is no discernible benefit to either the property owner or to the City in allowing manufactured housing subdivisions that aren't also PURDs, the proposed amendments streamline the manufactured housing regulations by removing the manufactured housing subdivision option.

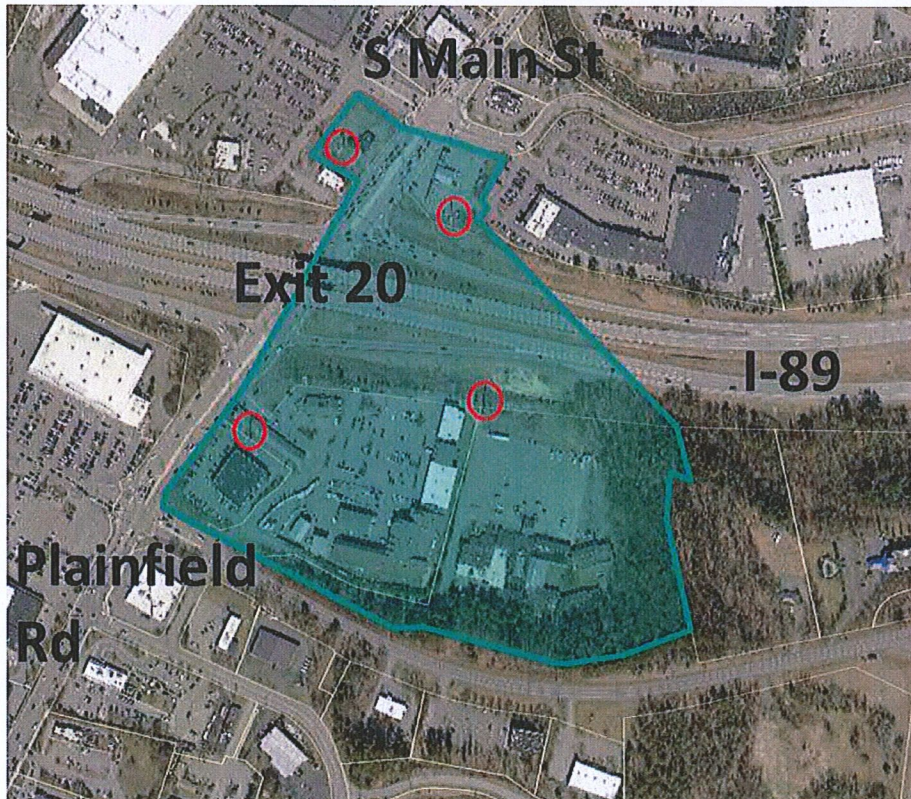
Finally, to further encourage the development of manufactured PURDs (which provide a substantial benefit to the development and the community by requiring that 50% of the lot is protected as open space), the proposed amendment to Section 507 allows the Planning Board to approve a density bonus for the use of that option (see Council amendment #3 below).

Related amendments include:

- **Sections 209, 308.2, 312.2 and 313.2** to update the names of the manufactured housing use categories and remove references to "manufactured home subdivision".
 - **Section 500** to update the Planned Development table (*see p. 7 of the redline*).
 - **Section 501.2.C** to clarify the permitted uses within a manufactured housing PURD (*see p. 8 of the redline*).
 - **Appendix A** to amend the definitions of, "centralized sewer system," "classification of lots," "dwelling," "dwelling unit," "manufactured housing park," "manufactured housing PURD," and "traditional subdivision," and to remove "manufactured housing subdivision" (*see p. 20-23 of the redline*).
3. **Amend Section 314.2, the RL-3 District Table of Uses** to change "accessory use to any one-family dwelling" from a use allowed by Special Exception to a permitted use. Currently, a Special Exception from the Zoning Board of Adjustment is required to construct or install accessory structures for one-family dwellings located in the RL-3 District. This includes sheds, detached garages, and pools. The proposed amendment would allow such accessory uses and structures "by right" rather than requiring approval from the Zoning Board. The RL-3 District dimensional regulations - including setback and building coverage requirements - would continue to apply and a zoning and building permit would still be required for any such structures (*see p. 6 of the redline*).
4. **Amend Section 610 ("Accessory Dwelling Unit (ADU)")** to allow an accessory dwelling unit for an owner-occupied two-family dwelling. Since adoption of Section 610 in 2013, only a modest number of ADUs have been constructed. To make ADUs more viable for the City's property owners, the ADU regulations have been modified over the past several years to minimize regulatory hurdles and to provide more flexibility. As part of its ongoing efforts to encourage ADUs and to provide additional opportunities for affordable housing, and in response to multiple inquiries the Planning & Development Department has received over the past year, staff proposes to expand Section 610 to allow ADUs for owner-occupied two family-dwellings, in addition to allowing ADUs for owner-occupied one-family dwellings (*see p. 17-18 of the redline*).

B. COUNCIL TEXT AMENDMENTS

1. **Add “equipment and machinery sales, rental and service,” as a new use category.**
A developer has expressed interest in developing property located near the Airport for an equipment rental business, which is not currently a use identified in the Zoning Ordinance. Staff proposes to create such a category and to allow it as a permitted use in the Light Industrial District which includes similar and compatible uses. The proposal is to:
 - Amend Section 303.2 to allow “equipment and machinery sales, rental and service,” as a permitted use in the IND-L District, and amend Section 303.4 to require screening for any related outdoor storage (*see p. 2 of the redline*).
 - Amend Appendix A to provide a definition for “equipment and machinery sales, rental and service.” (*see p. 21 of the redline*).
2. **Add proposed Section 411 (“Highway Commercial District”)** (*see p. 6-7 of the redline*). Within the vicinity of I-89 Exit 20 there are four freestanding signs that range in height from 55 ft. to 75 ft. and, as such, they are non-conforming to the current requirements of Section 608 (“Signs”). The height and size of these signs is conducive to attracting customers from I-89, but cannot be practically utilized to provide necessary signage at street level. Recognizing that these signs are legal non-conforming and are permitted to remain, the proposed amendment would allow a second freestanding on each property within the district whereas each property is otherwise permitted to have only one freestanding sign. The purpose of the amendment is to allow these select properties to have a second freestanding to serve street-level customers, in addition to any existing freestanding sign that is non-conforming to the 25 ft. height limitation applicable in the GC District. The extent of the district is roughly outlined in the image below, and the locations of each of the four non-conforming freestanding signs are circled in red (note that a draft zoning district map to be attached as an Appendix is forthcoming).



3. **Amend Section 507 (“Bonuses for Certain Planned Development”) and Appendix A (definition of “workforce housing”)** (see p. 11-12 and 23 of the redline). In another effort to encourage affordable housing opportunities within the City, this amendment would allow the Planning Board to grant a density bonus for any PURD or PRec that provides “workforce housing,” which is defined in RSA 674:58, IV as:

[H]ousing which is intended for sale and which is affordable to a household with an income of no more than 100 percent of the median income for a 4-person household for the metropolitan area or county in which the housing is located as published annually by the United States Department of Housing and Urban Development. “Workforce housing” also means rental housing which is affordable to a household with an income of no more than 60 percent of the median income for a 3-person household for the metropolitan area or county in which the housing is located as published annually by the United States Department of Housing and Urban Development.

Note that the Planning & Development Department intends to commission an inclusionary zoning study to evaluate the feasibility of requiring affordable, workforce housing to be included as part of all multi-family developments of a certain size. The findings of the inclusionary zoning study – which the Department anticipates undertaking in 2023 – may result in future recommended changes to the workforce housing density bonus provisions.

Staff also proposes to authorize the Planning Board to approve up to a 10% bonus for any PURD, PRec, or manufactured housing PURD that incorporates a renewable energy system (as defined in Appendix A) into the design of the development or that commits to energy efficient design by obtaining LEED certification. The remaining columns – which were added to the Zoning Ordinance as placeholders at least 25 years ago – are proposed to be removed (note that with respect to the “sensitivity to environment” category, it is staff’s view that this concept has been substantially addressed through the PUD regulations).

4. **Amend Section 603 (“Senior Housing Complexes”)** (see p. 14 of the redline). HB 1661 from the 2022 legislative session was signed into law over the summer and includes the following amendment to RSA 674:17, IV:

[I]f a municipality allows an increased density, reduced lot size, expedited approval, or other dimensional or procedural incentive [...] for the development of housing for older persons, as defined and regulated pursuant to RSA 354-A:15, VIII, it may allow the same incentive for the development of workforce housing as defined in RSA 674:58, IV. Beginning July 1, 2023, incentives established for housing for older persons shall be deemed applicable to workforce housing development.

The only incentive in the Lebanon Zoning Ordinance that specifically applies to housing for older persons is Section 603, which authorizes the Zoning Board to grant a Special Exception to allow a senior housing complex to have a greater density than that specified for the applicable zoning district. Per the recent amendment to RSA 674:17, the Zoning Board’s ability to grant a Special Exception to allow greater density for a senior housing complex will automatically extend to workforce housing developments as of July 1, 2023. In response to HB 1661, staff has preliminarily suggested that the language of Section 603 be updated to reflect the forthcoming statutory mandate. If amended as proposed, note that a Special Exception granted under Section 603 for a workforce housing PURD or PRec would establish the baseline permitted density for the development, from which

a “second” bonus could be added by Planning Board per Section 507 (“Bonuses for Certain Planned Development”). One alternative to adopting staff’s proposed language would be to remove Section 603 pending the completion of the inclusionary zoning study which, as noted above, the City anticipates undertaking in the coming year.

5. **Add Section 607.8 (“Electric Vehicles”)** (*see p. 14-15 of the redline*). This amendment is proposed in response to the rapidly changing regulatory and market landscape, which is transitioning to an electrified transportation future. The amendment also implements the City of Lebanon Sustainability Principles, Master Plan, and associated commitments to cleaner energy, greenhouse gas reduction, and equity as relates to supporting diverse and affordable transportation options in the face of rising fuel prices. For example, real estate research suggests that EV charging is among the top three desired convenience amenities for multi-family developments.

The amendment applies to all off-street vehicle parking in all zoning districts, and creates requirements for EV-installed, EV-ready, and EV-capable off-street vehicle parking spaces across three use categories: one- and two-family dwellings, multi-family dwellings, and non-residential, and also adds related definitions. The tiered thresholds for the required EV infrastructure allow a gradual transition to EV charging capacity in the City; developments will install a minimum of fully operational chargers and also install the electrical capacity to install future chargers.

Preparedness of building and site utilities saves property owners from the cost of future retrofits that would be significantly greater than the upfront costs and potentially a barrier to EV implementation in the community as a result. The installation of EV charging infrastructure is four to six times less expensive when included during the initial construction phase as opposed to a retrofit.

Members of the LEAC and the LEAC EV sub-committee reviewed and assisted with edits to the amendment, with specific attention to technical and threshold requirements. References reviewed for development of the requirements include the International Energy Conservation Code 2021 and benchmarking of similar regulations across the U.S.

Related amendments include removing **Section 607.3.B.1.c** and amending **Appendix A** to add EV-related definitions. (*see p. 14 and 20-22 of the redline*)

6. **Amend Section 608.7 (“Signs Allowed Without a Building Permit”)** (*see p. 16-17 of the redline*). The sign regulations set forth in Section 608 substantially limit Dartmouth Health’s ability to provide adequate signage. The Medical Center is uniquely hampered by Section 608 regulations which are unduly burdensome when applied to a property the size of DHMC. Moreover, adequate and abundant signage is arguably a unique necessity for hospitals in order to facilitate safe and efficient emergency access and wayfinding.

The purpose of the proposed amendment is to provide flexibility for the Medical Center in adding and replacing signage by exempting from Section 608 any medical center complex sign that is not visible from a public street. For example, the exemption would allow Dartmouth Health to add additional freestanding directional signs along its access drive without having to obtain a Variance to allow more than one freestanding sign on the property. Signs visible from a public street would still be subject to the requirements of Section 608.

7. **Amend Section 306.1, the Central Business purpose statement** (*see p. 3 of the redline*). The proposed amendment is a recommendation from the West Lebanon

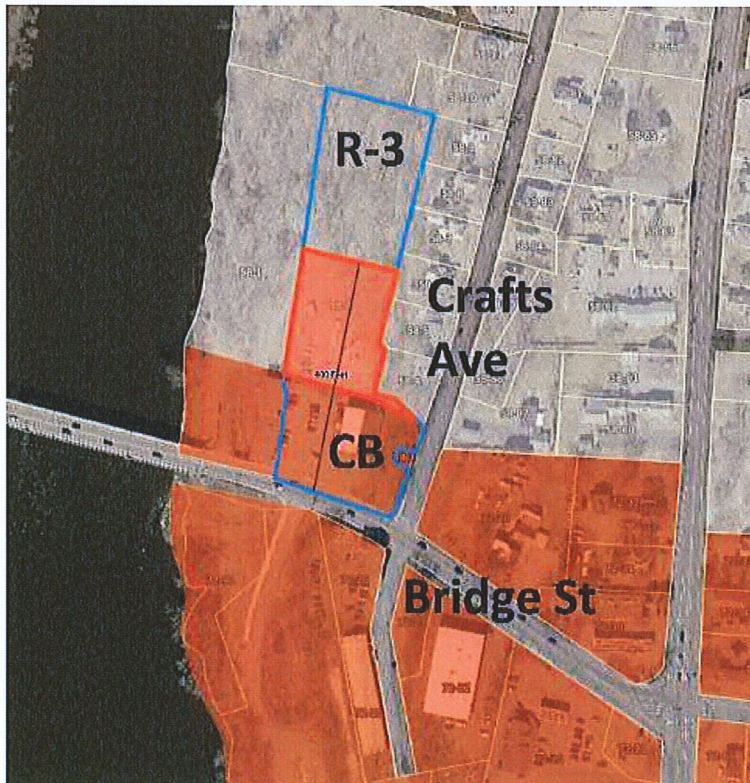
Revitalization Advisory Committee (WLRAC) that was made last year, but too late to be included in the set of zoning amendments approved by the Council in January 2022. The WLRAC's recommendation is to expand the CB District purpose statement by incorporating language from the Master Plan and from the West Lebanon Village Visioning Charrette Final Report.

8. **Group Day Care Facilities, Sections 303.2, 303A.2, Section 306.2, Section 307.2, Section 311, Section 311A, and Section 311B.** To help facilitate the development of needed childcare facilities, staff proposes to allow day care facilities as permitted uses in non-residential and mixed-use districts (IND-L, IND-RA, CB, LD, R-O, R-O-1, and PB). The amendment would help ease unnecessary regulatory hurdles by eliminating the requirement to obtain either a Conditional Use permit from the Planning Board or Special Exception from the Zoning Board.

9. **Miscellaneous minor amendments:**

- **Amend Section 501.1.H** to permit existing non-conforming buildings to be included as part of a PUD (*see p. 8 of the redline*).
- **Section 611.A ("Keeping of Chickens")** to increase the number of chickens permitted for one- and two-family dwellings (*see p. 18 of the redline*).
- To clarify existing language and to make certain editorial changes to Section 302.4.B ("Enhanced Performance Standards - Authorization"), the Section 500 planned development table, Section 608 ("Signs"), Section 703.2 (discontinuance of non-conforming structures), Section 702.5 (expansion of non-conforming uses), and Appendix A (revise "health club" definition, "vehicular sales" definition, and sign-related definitions, and add definition for "sign structure").

C. **COUNCIL ZONING MAP AMENDMENT**



10. 18 Bridge Street (Tax Map 58, Lot 2): The property at 18 Bridge Street is a +/-2.9 acre lot that is split-zoned CB and R-3. The CB zoning designation extends 200 feet from the centerline of Bridge Street. However, the improved and developable portion of the lot already extends well past the existing CB District boundary line, and the land use of the entire property is identified as "Central Business District" on the Master Plan Future Land Use Map. The proposed zoning map amendment would extend the CB zoning an additional 225 ft. so that the front half of the property can be redeveloped for uses allowed in the CB District, consistent with the desired land use of the property as reflected on the Future Land Use Map. The recommendation to adjust the zoning boundary on this parcel is also among the key recommendations of the West Lebanon Revitalization Advisory Committee's Action Plan for West Lebanon. As a gateway to West Lebanon, the redevelopment of this property could serve as a catalyst for future redevelopment and financial investment in downtown West Lebanon.

SCHEDULE

The procedure to adopt zoning amendments is set forth in Section 1000 of the Zoning Ordinance and is summarized below:

1. Staff presents amendments to City Council for initial consideration - *scheduled for the October 5, 2022 Council meeting*. Section 1000.2.A.
2. If Council decides to move forward with the amendments, they will set a tentative schedule including review by legal counsel, review before the City's land use boards, and a public hearing before the Council. Section 1000.3.A.
3. The amendments will be forwarded to the City's attorney for review. *Legal opinion expected to be received by the end of October*. Section 1000.3.B.2.
4. The amendments are forwarded to the City's land use boards for review. Sections 1000.3.B.1 and C.
 - a. Zoning Board – *expected to be scheduled for the November 7, 2022 meeting*.
 - b. Conservation Commission – *expected to be scheduled for the November 10, 2022 meeting*.
 - c. Planning Board - *expected to be scheduled for the November 21, 2022 meeting*.
5. The Council will then hold a work session to review the amendments as modified based on legal input and land use board feedback – *expected to be scheduled for the January 4, 2023 Council meeting*.
6. Finally, the Council will hold a public hearing followed by a vote on whether to adopt the amendments and/or to place amendments on the March ballot for voter consideration - *expected to be scheduled for January 18, 2023 Council meeting*. Section 1000.3.D.

Please note that amendments to the Article III Tables of Use for the R-1, R-2, R-3, RL-1, RL-2, and/or RL-3 Districts require approval by referendum vote per Section 1000.4 of the Zoning Ordinance. The remainder require adoption by City Council per Section 1000.4.B of the Zoning Ordinance (keeping in mind that the Council has the ability to place any proposed amendment on the March ballot for voter approval).

ATTACHMENT

- Redline excerpt of current Zoning Ordinance (redline last revised 9/27/22)

DRAFT AMENDMENTS TO
THE CITY OF LEBANON ZONING ORDINANCE

ARTICLE II GENERAL PROVISIONS

[...]

SECTION 205 ONE PRINCIPAL STRUCTURE PER RESIDENTIAL LOT.

There shall be only one *principal structure* on a *lot* in the *residential districts*, R-O district, and R-O-1 district, except when:

205.1 Approved pursuant to the PUD provisions of this Ordinance or as a cottage development per Section 509; or

[...]

SECTION 209 MANUFACTURED HOMESHOUSING.

Manufactured ~~homes~~ housing units are permitted only in *manufactured ~~home~~ housing parks* or in *~~manufactured home subdivisions or manufactured home Planned Unit Residential Developments (housing PURDs)~~*. See ~~Sections:~~ Section 503 (*"MANUFACTURED HOUSING PARKS"*) and Section 504 (*"MANUFACTURED HOUSING PURDs"*).

[...]

ARTICLE III USE DISTRICTS

SECTION 302 USES.

[...]

302.4 Enhanced Performance Standards.

[...]

- B. Authorization. Pursuant to RSA 674:21, II, the Planning Board is hereby authorized to grant a **conditional use** permit for uses identified in Article III as permitted by **conditional use** permit, or as otherwise specified herein, if the application is found to be in compliance with the enhanced performance standards set forth in Section 302.4.D.

[...]

SECTION 303 LIGHT INDUSTRIAL DISTRICT (IND-L).

[...]

303.2 Table of Uses.

<u>Permitted Uses</u>	<u>Special Exception Uses</u> (see Section 801.3)
<u>Commercial/Non-Residential</u> [...] <u>Equipment and machinery sales, rental and service</u> <u>Group day care facility per Section 604</u> [...] 1.	<u>Commercial/Non-Residential</u> [...] 1. Group day care facility per Section 604 [...]

[...]

303.4 Outdoor Storage.

Outdoor storage shall be permitted as an **accessory use** to a permitted use if it occupies an area of 20 percent or less of the footprint area of the **principal building**. Otherwise, outdoor storage shall require a **conditional use** permit from the Planning Board pursuant to Section 302.4. The 20% limitation shall not apply to cContractor's yYards and equipment and machinery sales, rental and service. All outdoor storage, including outdoor storage for a cContractor's yYard and equipment and machinery sales, rental and service, shall be appropriately screened from view from abutting **parcels** and shall not occupy required yard areas.

[...]

SECTION 303A INDUSTRIAL - RAIL ACCESS DISTRICT (IND-RA).

[...]

303A.2 Table of Uses.

<u>Permitted Uses</u>	<u>Special Exception Uses</u> (see Section 801.3)
<u>Commercial/Non-Residential</u> [...] <u>Group day care facility per Section 604</u>	<u>Commercial/Non-Residential</u> [...] Group day care facility per Section 604

[...]

SECTION 306 CENTRAL BUSINESS DISTRICT (CB).

306.1 Purpose.

The purpose of the CB District is to facilitate smart growth and mixed-use development, other related commercial activities, and higher density residential uses that provide more life and opportunities for recreational and cultural offerings with a mix of uses in new or redeveloped properties. These CB District regulations are flexible in order to invite reinvestment on existing parcels and simultaneously attract new developments to enable opportunities for economic development by capitalizing on the attractiveness of the Connecticut River. The CB District is intended to promote an environment that is safe for walking and biking and provide for uses that are compatible and which would tend to retain and enhance the existing character of the area~~provide in town areas for retail and service businesses, banks, offices and government facilities in West Lebanon. Other related commercial activities and higher density residential uses should be encouraged.~~

306.2 Table of Uses.

<u>Permitted Uses</u>	<u>Special Exception Uses</u> (see Section 801.3)
[...] Commercial/Non-Residential [...] <u>1. Group day care facility per Section 604</u> 4. [...]	Commercial/Non-Residential [...] <u>1. Group day care facility per Section 604</u>

[...]

SECTION 307 LEBANON DOWNTOWN DISTRICT (LD).

[...]

307.2 Table of Uses.

<u>Permitted Uses</u>	<u>Uses by Conditional Use Permit</u> (see Section 302.4)
[...] Commercial/Non-Residential [...] <u>1. Group day care facility per Section 604</u>	Commercial/Non-Residential [...] 1. 2. <u>Group day care facility per Section 604</u>

[...]

SECTION 308 RESIDENTIAL ONE DISTRICT (R-1).

[...]

308.2 Table of Uses.

<u>Permitted Uses</u>	<u>Special Exception Uses</u> (see Section 801.3)
[...] <u>Planned Developments</u> 1. Manufactured home-housing park per Section 503 2. Manufactured home subdivision per Section 504 (or Manufactured home-housing PURD per Section 504	[...]

[...]

SECTION 311 RESIDENTIAL-OFFICE DISTRICT (R-O). [...]

311.2 Table of Uses.

<u>Permitted Uses</u>	<u>Special Exception Uses</u> (see Section 801.3)
[...] <u>Commercial/Non-Residential</u> [...] 1. <u>Group day care facility per Section 604</u> [...] 1.2.	[...] <u>Commercial/Non-Residential</u> [...] 1. Group day care facility per Section 604 [...] 2.

[...]

SECTION 311A RESIDENTIAL-OFFICE-ONE DISTRICT (R-O-1).

[...]

311A.2 Table of Uses.

<u>Permitted Uses</u>	<u>Special Exception Uses</u> (see Section 801.3)
[...] <u>Commercial/Non-Residential</u> [...] 1. <u>Group day care facility per Section 604</u> [...] 1.2.	[...] 1. Group day care facility per Section 604 [...] 2.

[...]

SECTION 311B PROFESSIONAL BUSINESS DISTRICT (PB).

[...]

311B.2 Table of Uses.

Permitted Uses	<u>Special Exception Uses</u> (see Section 801.3)
[...] Commercial/Non-Residential 1. <u>Group day care facility per Section 604</u> [...] 4.2.	Commercial/Non-Residential [...] 4. Group day care facility per Section 604 [...] 2.

[...]

SECTION 312 RURAL LANDS ONE DISTRICT (RL-1).

[...]

312.2 Table of Uses.

Permitted Uses	<u>Special Exception Uses</u> (see Section 801.3)
[...] Planned Developments 1. Manufactured home parkhousing per Section 503 2. Manufactured home subdivision per Section 504 (or Mmanufactured home PURD) <u>per Section 504</u> 3. [...]	4. [...]

[...]

SECTION 313 RURAL LANDS TWO DISTRICT (RL-2).

[...]

313.2 Table of Uses.

Permitted Uses	<u>Special Exception Uses</u> (see Section 801.3)
[...] Planned Developments 1. Manufactured home parkhousing per Section 503 2. Manufactured home subdivision per Section 504 (or Mmanufactured home-housing <u>PURD per Section 504)</u> [...] 3.	[...] 4.

[...]

SECTION 314 RURAL LANDS THREE DISTRICT (RL-3).

[...]

314.2 Table of Uses.

Permitted Uses	<u>Special Exception Uses</u> (see Section 801.3)
[...] <u>Planned Developments</u> [...] 1. <u>Accessory use to any one-family dwelling</u>	[...] 1.

[...]

ARTICLE V SUBDIVISIONS AND PLANNED DEVELOPMENTS

SECTION 500 GENERAL.

[...]

Planned developments shall be permitted in accordance with the following table:

District	PURD per Section 501.2	PRec per Section 501.3	Industrial PUD per Section 501.4	Commercial PUD per Section 501.4	<u>Manufactured Housing PURD per Section 501.2 / Manufactured Home Housing Park per Section 503 and Manufactured Home Subdivision per Section 504</u>	Recreational Camping Parks per Section 505	<i>Medical Center Complexes</i> per Section 506	Planned Business Park per Section 508	<u>Cottage Development</u>
IND-L			<u>CUP</u> P					<u>CUP</u> P	
IND-RA			<u>CUP</u> P					<u>CUP</u> P	
GC				<u>CUP</u> P					
GC-1				<u>CUP</u> P					
CB				<u>CUP</u> P					
LD									
R-1	<u>CUP</u> P				<u>CUP / P</u>				<u>CUP</u>
R-2	<u>CUP</u> P								<u>CUP</u>
R-3	<u>CUP</u> P *								<u>CUP</u>
R-O	<u>CUP</u> P								<u>CUP</u>
R-O-1	<u>CUP</u> P								<u>CUP</u>
PB						SE			

RL-1	<u>CUP</u> P*	<u>CUP</u> P			<u>CUP / P</u>	SE			
RL-2	<u>CUP</u> P*	<u>CUP</u> P			<u>CUP / P</u>	SE			
RL-3	<u>CUP</u> P*	<u>CUP</u> P							
MC				PCUP			P		

P = permitted

SE = **special exception** required

CUP = conditional use permit required

*Subject to Section 501.2.B.1.

SECTION 501 PLANNED UNIT DEVELOPMENT (PUD).

501.1 General Requirements.

[...]

H. Dimensional Requirements.

[...]

4. Existing buildings. An existing **building** on a site proposed to be developed as a PUD may be incorporated into a PUD even if the **building** is nonconforming with respect to the requirements of Section 501.1. However, the extent of the nonconformity may not be increased unless the proposed change to the existing **building** is determined by the Planning Board to be consistent in character, scale and design with the proposed PUD.

[...]

501.2 Planned Unit Residential Development (PURD).

[...]

C. Uses Allowed in a PURD.

1. Residential Uses. A PURD may include **dwelling units** in **one-family, two-family** and **multi-family dwellings**. A mix of **dwelling** types may be permitted at the reasonable discretion of the Planning Board. In a **manufactured home-housing PURD** only **manufactured housing unit**homes are permitted and shall be on individual lots.
2. Non-Residential Uses. Certain non-residential uses may be established within a PURD, subject to the following provisions:

[...]

This provision shall not apply to a **manufactured housing PURD**.

3. All Other Uses in Underlying Zoning District. Any use permitted in the zoning district in which the PURD is located may be permitted within the PURD. Uses allowed by *special exception* or by *conditional use* permit in the underlying zoning district where the PURD is located may also be permitted within the PURD, and shall not require a *special exception* from the Zoning Board or a separate *conditional use* permit from the Planning Board. This provision shall not apply to a *manufactured housing PURD*.

SECTION 503 MANUFACTURED ~~HOME~~-HOUSING PARKS.

503.1 Area.

A manufactured ~~home~~-housing park shall have an area not less than 10 acres ~~nor more than 50 acres.~~

503.2 Layout.

A. A manufactured ~~home~~-housing park shall provide:

1. Individually designated spaces for each manufactured ~~home~~housing unit.
2. Interior access streets for all spaces. Such streets shall have a ~~right-of-way at least 40 feet in width and a~~ surface travel way at least 20 feet in width built on 12 inches of compacted gravel. All interior streets shall be named in accordance with emergency 911 provisions, and shall provide adequate interior circulation with no dead ends unless otherwise approved by the Fire Department.
- ~~3. All weather walkways along streets.~~
- ~~4~~3. At least ~~20~~-15 percent of the total area for common open space or recreation, ~~exclusive of wetlands and slopes of 25% or more.~~ This area shall not include roads, streets, *parking areas*, *service areas*, non-recreation *accessory buildings* or similar facilities. This area may include facilities for recreation and/or playgrounds.
- ~~5~~4. A *buffer* at least ~~50~~-25 feet in width maintained as a landscape area abutting all manufactured home property lines.
- ~~6. Adequate facilities for recreation and/or playgrounds.~~

B. A manufactured ~~home~~-housing park shall have Site Plan Review approval from the Planning Board.

503.3 Manufactured ~~Home~~-Housing Spaces.

- A. Each manufactured ~~home~~-housing space shall be at least ~~40~~5,000 sq. ft. in area and shall front on an interior access street.
- B. Each space shall have a separate *driveway*.

- C. Each space shall include a ***parking area*** built on 12 inches of compacted gravel. Said ***parking area*** shall be large enough to accommodate two parking spaces; ~~each 10 feet wide by 22 feet long.~~
- ~~D. At least 100 sq. ft. of indoor storage.~~
- ~~E.D.~~ Manufactured ***home housing unit*** spaces shall not be located on slopes having a natural grade of ~~45~~***10***% or greater.

503.4 Utilities and Services.

For each manufactured housing unit:

- A. ~~An attachment for water supply.~~ The water supply source must meet all local and state regulations.
- B. ~~An attachment for sewage disposal.~~ The method of sewage disposal must be in compliance with all local and state regulations. ~~It shall not be located on the manufactured home space or any adjacent manufactured home space unless the manufactured home space is at least 1 1/2 acres in size.~~
- C. ~~An electrical source supplying at least 60 amps, 120/240 volts.~~ The installation shall comply with all applicable state and city electrical laws and regulations. ~~Such electrical outlets shall be weatherproof.~~ All electrical, television and other wired services shall be installed underground.
- D. Provisions for disposal of household garbage and rubbish.

503.5 Siting Manufactured ~~Homes~~***Housing Units***.

- A. A nonporous pad shall be provided for each manufactured ***home housing unit***.
- B. No manufactured ***home housing unit*** shall be closer than ~~50~~***25*** feet to a public street right-of-way or to a property line of the manufactured ***home housing*** park.
- C. A manufactured ***home housing unit*** shall be located so that it is at least 20 feet from the ~~right-of-way~~***surface*** of the interior road and ~~ten~~***10*** feet from any other manufactured ***home housing unit*** space.

503.6 Density.

One (1) ***manufactured housing*** unit per 5,000 sq. ft. of ***lot area*** is permitted.

SECTION 504 MANUFACTURED ~~HOME~~***HOUSING***
SUBDIVISIONS~~PURDS~~.

Manufactured housing PURDs are allowed by ***conditional use*** permit per Section 501.1 and shall satisfy all requirements of Section 501.1 and Section 501.2. Notwithstanding the applicability standards set forth in Section 501.2.B.1, the minimum lot size for a ***manufactured housing***

PURD shall be 20 acres, and notwithstanding the density requirements of Section 501.2.D.2, one (1) manufactured housing unit per 5,000 sq. ft. of lot area is permitted, except that in the R-1 District the permitted density shall be as set forth in Section 308.2. The number of dwelling units may be increased by up to 12 percent at the discretion of the Planning Board, per Section 507. ~~Manufactured home subdivisions shall be at least 20 acres in size and shall have at least six (6) lots. Each lot shall have at least two (2) parking spaces. Manufactured Home PURDs are allowed, in accordance with Section 501.2.~~
[...]

SECTION 507 BONUSES FOR CERTAIN PLANNED DEVELOPMENT.

PUD's and manufactured home housing parks ~~and subdivisions~~ may receive an increased density bonus pursuant to Table 507.1 and the provisions of this section.

507.1 Increased Density Bonuses.

Maximum Amount of Bonus Available

Type of Development	For Use of Technique	For Sensitivity to Environment	For Creating Affordable Workforce Housing	For Reducing Fiscal Impact	For Energy Efficient Design	For Renewable Energy Systems Facilities
PURD or PRec	12%	----	---- 10%	----	10%	10%
<u>Manufactured housing PURD MH Park</u> (or subdivision)	NONE 12%	----	----	----	10%	10%
Subdivision	NONE	----	----	----		

507.2 Criteria for Award of Bonus.

The Planning Board may allow a gross density of development greater than allowed under Article III of this Ordinance for PURD's, manufactured housing PURDs, (or PRec's) ~~(or subdivisions) or traditional subdivisions~~ up to a maximum bonus allowed by Table 507.1. The Planning Board may approve a density bonus for any one or more of the categories identified in Section 507.1. Density bonuses granted pursuant to this section shall be cumulative. The following guidelines shall be used in determining whether a bonus shall be awarded.

A. Use of Technique. An applicant may receive a bonus not exceeding 12% for using either the PURD or PRec form of development.

~~B. Sensitivity to Environment. (Reserved)~~

~~BC. Affordable Workforce Housing. (Reserved)~~

For every dwelling unit which qualifies as **workforce housing**, one (1) market rate dwelling unit may be added as a density bonus, to a maximum of 20 bonus units or 10%, whichever is greater, as approved by the Planning Board.

D. Energy Efficient Design. The Planning Board may award a density bonus of up to 10% for any development that will be constructed to meet standards for industry-accepted energy efficiency standards including but not limited to those of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED), the Passive House Institute (PHI), or the Passive House Institute US (PHIUS). In evaluating the requested density bonus, the Planning Board shall take into account the extent and scope of proposed energy efficiency construction throughout the development together with any other relevant factors and considerations related to the development and any applicable energy efficiency certification programs that the applicant proposes to participate in.

C. Renewable Energy Systems. The Planning Board may award a density bonus of up to 10% when one or more non-accessory **renewable energy systems** are incorporated into the design of the development. The bonus awarded shall be commensurate with the amount of energy produced for the development by the proposed **renewable energy system(s)**.

~~D. Reduced Fiscal Impact. (Reserved)~~

The decision of the Planning Board in awarding such a bonus and the amount thereof is hereby declared to be a discretionary administrative decision of the Planning Board. In no case shall the Planning Board award a bonus if it determines that the limitations of a site cannot accommodate the increase.

[...]

Section 509 COTTAGE DEVELOPMENTS.

509.1 Purpose. The purpose of this section is to provide opportunities for single family housing that is small, energy-efficient, and affordable; to allow flexibility in site and design standards while promoting projects that ensure compatibility with surrounding land uses and existing neighborhoods; and to promote sustainability and neighborhood interaction through integrated design.

Cottage developments are intended to serve as part of the City's overall housing strategy to encourage affordability, innovation and variety in housing design and site development while ensuring compatibility with existing neighborhoods, and to promote a variety of housing choices to meet the needs of a population diverse in age, income, household composition and individual needs.

509.2 Applicable Use Districts. **Cottage developments** are allowed by **conditional use** on Class 1 lots in the R-1, R-2, R-3, R-O, and R-O-1 Districts, in accordance with Section 302.4.D and the requirements of this section.

509.3 Number and Arrangement of Units. **Cottage developments** shall contain a minimum of three (3) and a maximum of sixteen (16) **cottages**, located in one or

more clusters to maximize efficiency of land use and to encourage a sense of community among the residents. Each cluster shall include a minimum of three (3) units.

509.4 Lot Size. All **cottage developments** shall have a minimum lot area of one-half acre, except in the R-2 and R-3 District, where a minimum lot area of 40,000 sq. ft. shall be required.

509.5 Density and Building Coverage. Permitted density shall be based on 2,500 sq. ft. of lot area per each **cottage**. The maximum permitted building coverage shall be 35%.

509.6 Design Standards. The following design standards are intended to define design parameters to create a small community of cottages oriented around open space and to achieve compatibility with adjacent uses.

A. Individual Cottage Spaces. For each detached cottage, the site plan approved by the Planning Board shall delineate a building site for each detached cottage of no less than 1,500 sq. ft.

B. Detached Cottages. At least 50% of the **cottages** in the development shall be detached units.

C. Interior Setbacks. The minimum setback between units within a cottage development shall be 10 feet, measured from the nearest point of the exterior walls.

D. Common Open Space. A minimum of 400 square feet of common open space shall be provided per **cottage** and per cluster. The common open space area for each cluster shall be contiguous and shall abut all of the **cottages** in the cluster. **Cottages** shall be oriented around and have their main entry from the common open space.

E. Roofs and Porches.

1. The highest point of the roof of the **cottage** shall not exceed 24 feet.

2. **Cottages** shall have an unenclosed, covered front primary entry and porch of at least 60 square feet in size. The front porch shall be oriented toward a common open space. The intent of this porch requirement is to create outdoor space in each **cottage** that is visually and physically connected to the common open space and to other cottages.

F. Parking Location and Screening Requirements.

1. Parking areas and driveways shall comply with applicable minimum yard requirements for the underlying zone.

2. Parking areas shall be screened from public streets and adjacent residential uses by landscaping or architectural screening.

3. Parking areas shall be prohibited in the minimum required front yard.

4. Parking areas shall be separated from the common open space by landscaping or an architectural screen.

G. Existing Dwellings. An existing detached or attached one-family dwelling that is incorporated into a cottage development and is nonconforming with respect to the standards of this section shall be permitted to remain on a site used for a cottage development and shall be considered a **cottage** for purposes of this section. However, the extent of the noncompliance may not be increased except unless the proposed change is determined by the Planning Board to be consistent in character, scale and design with the cottage housing development.

H. Street Facing Facades. All **cottages** within 50 feet of a public street shall have street facing facades that avoid blank walls in order to avoid the appearance of "turning their backs" to the street. For all such **cottages**, a minimum of 25 percent of the street facing façade shall be comprised of windows and/or glass doors.

509.7 Illustrations of Cottage Development Design.

[Note: proposed illustrations are forthcoming]

[...]

SECTION 603 SENIOR HOUSING COMPLEXES AND WORKFORCE HOUSING.

The Board of Adjustment may grant a **special exception** to allow a **senior housing complex or a development with workforce housing** to have a greater density than that specified for the applicable zoning district. **Senior housing complexes** may include **congregate living facilities**, subject to granting of a **special exception** by the Board of Adjustment.

[...]

SECTION 607 PARKING.

[...]

607.3 Maximum Off-Street Parking Requirement.

[...]

B. Off-street parking in excess of 120% but not more than 150% of the minimum requirement set forth in Section 607.2 may be permitted as set forth below.

- 1) The following categories of parking spaces shall not be counted towards the 120% maximum set forth in subsection A, but shall be subject to the 150% cap set forth in subsection B:

- a. Spaces provided within a ***parking structure***.
- b. Spaces dedicated for vehicles participating in a carpool, vanpool, or car-share program. Such spaces shall be reserved and used only for carpool, vanpool, or car-share program parking, and shall be signed or marked accordingly.
- ~~c. Parking spaces dedicated for vehicles operating on primarily alternative fuels including but not limited to electric, natural gas, and hydrogen. Such spaces shall be reserved and used only for alternative fueled vehicles and shall be signed accordingly and/or the spaces shall be painted with the words "Alternative Fueled Vehicles Only."~~

[...]

607.8 Electric Vehicles.

- A. Purpose. The purpose of this section is to facilitate the transition to ***electric vehicle*** use and to expedite the establishment of convenient, cost-effective ***electric vehicle infrastructure*** that such a transition necessitates.
- B. Applicability. ***EV charging stations*** are allowed as an ***accessory use*** in all zoning districts. When the retail charging of ***electric vehicles*** is proposed to be the principal use of a ***lot***, then the proposed ***EV charging station*** shall be considered a ***service station*** for zoning purposes.
- C. EV Infrastructure Requirements / Off-Street EV Parking Requirements. ***EVSE-installed spaces, EV-ready spaces, and EV-capable spaces*** shall be provided as follows:
 1. One- and Two-Family Dwellings. All new ***one-*** and ***two-family dwellings*** shall provide at least one (1) ***EV-ready*** space per ***dwelling unit***.
 2. Multi-Family Dwellings. Parking for ***multi-family dwellings*** shall include:
 - a. ***EVSE-installed spaces*** for a minimum of 5% of proposed ***off-street parking spaces***.
 - b. ***EV-ready spaces*** for a minimum of 20% of proposed ***off-street parking spaces***.
 - c. ***EV-capable spaces*** for a minimum of 65% of proposed ***off-street parking spaces***.
 3. Non-Residential Uses. Parking for uses requiring or proposing to provide 50 or more ***off-street parking spaces*** shall include:
 - a. ***EVSE-installed spaces*** for a minimum of 2% of proposed ***off-street parking spaces***, with a minimum of two ***EVSE-installed spaces***.
 - b. ***EV-ready spaces*** for a minimum of 10% of proposed ***off-street parking spaces***.
 - c. ***EV-capable spaces*** for a minimum of 50% of proposed ***off-street parking spaces***.

4. Where the calculations above result in a fractional parking space, it shall round up to the next whole number.
5. Where the number of **EVSE-installed spaces** provided exceeds the minimum required, the excess spaces shall be deducted from the total number of required **EV-ready spaces**.
6. Where the number of **EV-ready spaces** provided exceeds the minimum required, the excess **EV-ready spaces** shall be deducted from the total number of required **EV-capable spaces**.
7. Up to five (5) **Level 2 EV-installed spaces** may be substituted with one (1) **Level 3 EV-installed space** (minimum 50kW).
8. **EVSE-installed spaces, EV-ready spaces, and EV-capable spaces** are to be included in the calculation for both the number of minimum required and maximum permitted off-street parking spaces.
 - a. Every two (2) **EVSE-installed spaces** provided in addition to the required minimum may be counted as four (4) **off-street parking spaces** as relates to Section 607.1 (Minimum Off-Street Parking Requirements), for reduction of total required parking not greater than 10 percent of the total amount of required parking.

SECTION 608 SIGNS.

[...]

608.3 Prohibited Signs.

The following are prohibited:

- A. **Off-premise signs**, except as may be permitted per Sections 608.6.A.1 and 2. A **sign advertising** an on-site use that has ceased operation or vacated the **lot** shall be considered an **off-premise sign** after a period of 180 consecutive days following the discontinuance of the use and shall be removed as required by Section 608.8.C.3. [...]

608.4 Non-Residential Uses.

- A. Non-Residential Uses in Commercial and Industrial Districts. [...]

4. **Freestanding Signs.** A **lot** in the **commercial** and **industrial districts** may display one **freestanding sign** subject to the following regulations:
 - a. **Sign Area and Height Regulations.**
 - i. **Freestanding signs** must comply with the dimensions set forth in the following table:

	Zoning District					
Maximum	GC & GC-1	CB	LD	IND-L	IND-RA	IND-H

height	25 ft.	12 ft.	12 ft.	12 ft.	12 ft.	12 ft.
sign area	64 sq. ft.	32 sq. ft.	24 sq. ft.	64 sq. ft.	64 sq. ft.	64 sq. ft.

~~The size of any freestanding sign shall be deducted from the maximum sign area permitted on a lot under Section 608.4.A.1.a ("Maximum Sign Area"), except as set forth in Section 608.4.A.4.a.ii below.~~

- ii. Strip Plazas and Multi-Tenant Buildings. A **freestanding sign** for a property improved with a **strip plaza** or **multi-tenant building** may exceed the maximum **sign area** set forth in Section 608.4.A.4.a.i by up to 50 percent, except in the CB and LD Districts. ~~Such additional sign area shall not be deducted from the maximum sign area permitted on a lot under Section 608.4.A.1.a ("Maximum Sign Area").~~ [...]

- d. A lot within 100 feet of the Interstate 89 right-of-way with an existing freestanding sign that is legal non-conforming due to its height may have one additional freestanding sign which shall have a maximum size and height as set forth above and shall be subject to all other applicable regulations. [...]

608.7 Signs Allowed Without a Building Permit.

The following **signs** (1) are allowed in addition to any other **sign** permitted by this Section, (2) do not require a building permit, and (3) are exempt from the requirements of this Section except for the prohibition of **non-static signs** set forth in Section 608.3.C, the requirements of Section 608.2.D ("Clear Vision & Movement"), and the requirements of Section 608.2.E ("Maintenance"):

[...]

- J. Medical Center Complexes. On-premise **signs** for **medical center complexes** located in the Medical Center District, unless such signs are visible from a **public street**.

[...]

SECTION 610 ACCESSORY DWELLING UNIT (ADU).

[...]

An **accessory dwelling unit** shall comply with the following criteria:

- A. An **ADU** is ~~only~~ allowed on any lots in any zoning district with a ~~detached one-family dwelling~~. For lots in any zoning district with a two-family dwelling, a detached ADU is allowed, and only one such ADU is permitted per lot. The dwelling unit density requirements of the underlying zoning district shall not apply to ADUs.

- B. The appearance and character of the existing or proposed **ADU** shall remain single family in nature if converting a one-family dwelling to a one-family dwelling with an ADU, and shall remain two-family in nature if converting a two-family dwelling to a two-family dwelling with an ADU.

- C. The property owner must occupy ~~either the principal dwelling unit or the ADU~~ one of the dwelling units as their permanent residence. A temporary leave of absence by the property owner is allowed, provided the owner-occupied unit is not rented or occupied by anyone other than the property owner during the temporary leave or absence.

[...]

- D. The **ADU** must be located in the same **building** as the principal **dwelling unit(s)** unless the **lot** meets or exceeds the minimum required lot size for the respective zoning district.

[...]

- E. If the **ADU** is located within or by an addition to the existing ~~principal building one-family dwelling~~, an interior door shall be provided between the **ADU** and the principal **dwelling unit** ~~and the ADU~~ or between the ADU and one of the principal dwelling units if the principal building is a two-family dwelling.

[...]

- G. Size of ADU.

1. Conversion of one-family dwelling. If the **gross living area** of the principal **dwelling unit** is 1,500 square feet or less, the **gross living area** of the **ADU** may be no greater than 50% of the **gross living area** of the principal **dwelling unit**. If the **gross living area** of the principal **dwelling unit** is greater than 1,500 square feet, but less than 3,000 square feet, the **gross living area** of the **ADU** shall not exceed 750 square feet. If the principal **dwelling unit** is greater than 3,000 square feet, the **gross living area** of the **ADU** can exceed 750 square feet provided the **ADU** is no greater than 25% of the **gross living area** of the principal **dwelling unit**.

2. Conversion of two-family dwelling. If the **gross living area** of the smaller of the two principal **dwelling units** is 1,500 square feet or less, the **gross living area** of the **ADU** may be no greater than 50% of the **gross living area** of the smaller of the two principal **dwelling units**. If the **gross living area** of the smaller of the two principal **dwelling units** is greater than 1,500 square feet, but less than 3,000 square feet, the **gross living area** of the **ADU** shall not exceed 750 square feet. If the smaller of the two principal **dwelling units** is greater than 3,000 square feet, the **gross living area** of the **ADU** can exceed 750 square feet provided the **ADU** is no greater than 25% of the **gross living area** of the smaller of the two principal **dwelling units**.

[...]

- J. In addition to the two (2) parking spaces required for ~~the principal residence~~ each

principal dwelling unit, one (1) additional parking space for the **ADU** must be provided.

[...]

SECTION 611 KEEPING OF CHICKENS. [...]

The keeping of chickens shall be permitted for all **one-** and/or **two-family dwellings**, provided the following standards are met (these standards do not apply to chickens kept in the rural lands zoning districts where **agriculture** is a permitted use):

- A. It shall be unlawful to keep more than the following number of chickens on any **lot**:
- | | |
|---------------------------------------|---|
| Up to 2 <u>1</u> acres | up to a total of 4 <u>5</u> hens |
| <u>Up to 2 to 5</u> acres | up to a total of 10 hens |
| More than 5 <u>2</u> acres | <u>up to 15 hens plus</u> up to 2 hens per acre. |

[...]

ARTICLE VII NON-CONFORMITIES

[...]

SECTION 702 NON-CONFORMING USES.

[...]

702.5 Expansion of Use.

- A. The Zoning Board of Adjustment may, by **special exception**, permit a legal **non-conforming use** pursuant to Section 700 to be expanded, provided that the following tests are met in lieu of Section 801.3:

[...]

- B. As part of a proposed expansion under subsection A, the Board of Adjustment may allow a legal **non-conforming use** to expand into an addition to an existing **building** occupied by the **non-conforming use** provided that the ~~gross footprint~~ gross floor area of the addition is no greater than ten percent (10%) of the size of the ~~footprint-gross floor area~~ of the existing **building** measured as of January 22, 2020.

[...]

SECTION 703 NON-CONFORMING BUILDINGS AND STRUCTURES.

[...]

703.2 Abandonment, Discontinuance, Destruction.

Any **non-conforming building** or **non-conforming structure** which is partially or wholly destroyed by reason of any cause whatsoever, including obsolescence, fire, explosion, storm, floods, or other acts of God, may be resumed or restored and operated in its former non-conformity if same is done within two (2) years; thereafter, any **non-conforming building** or **structure** shall not be re-established if such **building** or **structure** has been discontinued for a period of two (2) years or more; provided, however, that the Zoning Board of Adjustment, upon an appeal from the Zoning Administrator's decision concerning such resumption or restoration, may permit the resumption or restoration of the same **building** or **structure** if it finds: (a) that no action incorporating an intent to abandon the **non-conforming building** or **structure** has been taken by the owner or occupant, including but not limited to a change in **non-conforming use** to razing or remodeling the **building** or structure; and (b) that the failure to resume or restore the use during the two-year period was due to economic, regulatory, or other forces beyond the control of the owner or occupant.

Non-conforming signs shall be subject to Section 608.8 in lieu of Section 703.2. Non-conforming sign structures shall be subject to Section 703.2.

[...]

APPENDIX A DEFINITIONS

[...]

CENTRALIZED SEWER SYSTEMS: A wastewater disposal system that does not connect to the municipal wastewater disposal system and that is designed to serve as the wastewater disposal system for an entire development. Such a system shall be approved by the [New Hampshire Department of Environmental Services \("NHDES"\)](#) ~~NHWSPCD and the City of Lebanon~~. Such systems, if approved, are permitted in the RL Districts only.

[...]

CLASSIFICATION (CLASSES) OF LOTS: Whether a *lot* is classified as "1", "2", or "3" depends on the provisions for water supply and sewage disposal, as follows:

CLASSIFICATION	DESCRIPTION
CLASS 1	Municipal water and municipal sewerage, <u>or community water system and centralized sewer system approved by NHDES</u>
CLASS 2	Municipal sewerage <u>or centralized sewer system approved by NHDES</u>
CLASS 3	Water and sewerage service that is neither Class 1 or Class 2

[...]

COTTAGE: A detached one-family dwelling unit with a maximum gross living area of one thousand, five hundred square feet (1,500 sq. ft.) and a maximum footprint of one thousand five hundred square feet (1,500 sq. ft.). Spaces with a ceiling height of six feet or less measured to

the exterior walls, such as in a second-floor area under the slope of the roof, shall be excluded when calculating the total floor area of a cottage. Cottages may also be attached horizontally in blocks of no more than three (3) units.

COTTAGE DEVELOPMENT: A development on a single lot having shared open space intended to serve **cottages** that interact together as a small community.

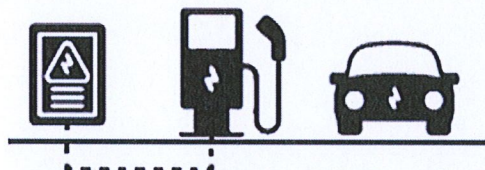
[...]

DWELLING: A ***building*** designed for and used primarily by one or more families for living quarters, but not including **recreational vehicles (RVs)**, **manufactured homes****housing**, trailers of any kind, ***hotels***, ***motels***, ***group residences***, ***lodging houses***, institutional homes, residential clubs, or other commercial accommodations offered for occupancy.

[...]

DWELLING UNIT: One or more rooms connected together, constituting a separate, independent housekeeping establishment for owner occupancy, rental or lease, and physically separated from any other rooms or ***dwelling units*** which may be in the same structure, and containing independent cooking, sanitary and sleeping facilities. The term includes sectional homes and modular units but does not include **manufactured homes****housing**, ***motel***, ***hotel***, ***lodging house*** or similar structures.

[...]



ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE) / EV charging station: The apparatus installed specifically for the purpose of transferring energy between the site or building wiring and the Electric Vehicle. EVSE does not include any equipment affixed to the electric vehicle.

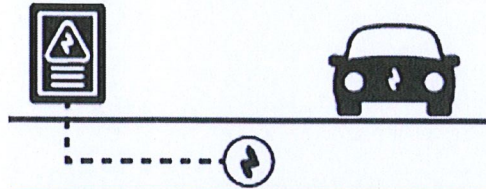
ELECTRIC VEHICLE INFRASTRUCTURE: Structures, machinery, and equipment necessary and integral to support an ***electric vehicle***, including ***EV charging stations*** and electrical outlets.

ELECTRIC VEHICLE (EV): An automotive-type vehicle for on-road use primarily powered by an electric motor, including any battery electric vehicle, fuel cell electric vehicle, or plug-in hybrid electric vehicle, that draws current from an onboard battery charged through a building or site electrical service, ***EVSE***, or other source of electric current.

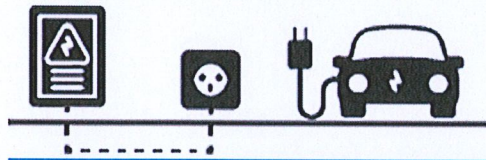
EQUIPMENT AND MACHINERY SALES, RENTAL AND SERVICE: The sale and/or rental of new or used construction, concrete, building and/or agricultural equipment and/or machinery. The outdoor storage and display, maintenance, and servicing of such equipment and machinery is permitted, provided that no retail sale of gasoline or oil is allowed.

EV-CAPABLE SPACE: An ***off-street parking space*** with electrical panel capacity and space for a branch circuit dedicated to the parking space that is not less than 40-ampere and 208/240-volt

and equipped with raceways, both underground and surface mounted, to enable the future installation of **EVSE**. For two adjacent EV-capable spaces, a single branch circuit is permitted.



EV-READY SPACE: An **off-street parking space** which is provided with a dedicated branch circuit that is not less than 40-ampere and 208/240-volt assigned for **EVSE** terminating in a receptacle or junction box located in close proximity to the location of the parking space. For two adjacent EV-ready spaces, a single branch circuit is permitted.



EVSE-INSTALLED SPACE: An **off-street parking space** with a dedicated branch circuit and **EVSE** for **Level 2 EV charging stations**, at minimum.

[...]

HEALTH CLUB: An establishment that provides indoor and/or outdoor exercise facilities, programs, instruction and/or training related to fitness, wellness, aerobics, weight lifting, court sports, and/or swimming, as well as locker rooms, showers, massage rooms, saunas, and/or related **accessory uses**. This shall not include any **local government use**.

[...]

LEVEL 2: Charging level for **EVs** that operates on a dedicated 40-100 amp breaker (same kind used by a clothes dryer or stove) on a 208 or 240 volt AC circuit while drawing 6.2+ kW to supply 19+ miles of range gained per hour of charging.

LEVEL 3: Fast or rapid charging level for **EVs** that operates on a 60 amp or higher breaker on a 480 volt AC electric circuit or higher three phase circuit with special grounding equipment and mounting on an equipment pad.

[...]

MANUFACTURED ~~HOME~~ HOUSING PARK: Any tract of land on which two or more **manufactured ~~homes~~ housing units** are parked and occupied for living purposes. A manufactured housing park may also include in whole or in part modular homes of any size up to 1,400 sq. ft. in size.

MANUFACTURED ~~HOME~~ HOUSING PURD: A Planned Unit Residential Development (PURD) for two or more **manufactured ~~home~~ housing units** and consisting exclusively of **manufactured housing** subdivision which meets all applicable requirements of Section 501. A manufactured housing PURD may also include in whole or in part modular homes of any size up to 1,400 sq. ft. in size.

~~**MANUFACTURED HOME SUBDIVISION:** A subdivision of land which allows individual ownership of lots on which can be located only a manufactured home.~~

MANUFACTURED HOUSING: This term shall have the meaning as set out in RSA 674:31, as may be amended.[...]

SIGN: A structure or an image, display, or illustration which is affixed to, painted or represented directly or indirectly upon a **building, structure or parcel** of land, which is (a) visible from a **public street**, private street, or an adjoining property, and (b) designed to communicate a non-artistic message. "Sign" does not include the sign structure unless the sign structure forms an integral part of the sign display or is used to differentiate the sign from the background against which it is placed.

SIGN AREA: *Sign area* means the entire area within a geometric form enclosing the extreme limits of writing, representation, emblem or any other figure of similar character, together with any frame, structure, or other material or color forming an integral part of the display or used to differentiate the **sign** from the background against which it is placed; ~~excluding the necessary supports or uprights on which such sign is placed.~~ The geometric form shall be limited to a circle, triangle or parallelogram.

Where a **sign** has two or more faces, the area of all faces shall be included in determining the area of the **sign**, except where two such faces are placed back to back and are at no point more than two feet from one another, the area of the **sign** shall be taken either as the area of one face ~~—~~ if the two faces are of equal area, or the area of the larger face ~~—~~ if the two faces are of unequal area. [...]

SIGN STRUCTURE: The necessary supports or uprights on which a sign is placed.

[...]

STRUCTURE: Anything constructed or erected with a fixed location on the ground, or attached to something having a fixed location on the ground. The term includes, but is not limited to, buildings, swimming pools, tennis courts, manufactured homes, ~~billboards, poster panels~~, wind and solar energy facilities, satellite dishes and antenna. The term does not include minor installations such as fences less than three and a half feet high, agricultural and safety fences, mail boxes, flagpoles and children's play equipment, nor does it include subsurface waste disposal systems.[...]

TRADITIONAL SUBDIVISION: Any subdivision of land which meets all applicable dimensional requirements of the zoning district in which it is located and is not approved as either a PUD per Section 501, ~~a manufactured home subdivision per Section 504,~~ or a **planned business park** per Section 508.[...]

VEHICULAR SALES: The display and sales of new or used motor vehicles, motorcycles, recreational vehicles, manufactured homes, and boats, ~~heavy equipment and farm machinery.~~ No retail sale of gasoline or oil is permitted. Vehicular sales shall include facilities for the short term leasing of automobiles and trucks to the end consumer. [...]

WORKFORCE HOUSING: This term shall have the meaning as set forth in RSA 674:58, IV, as amended.[...]

**Agenda
Conservation Commission
December 8, 2022**

**Agenda Item #4B
Study Items**

Master Plan Chapter Update

key points | vision & purpose

- Recognize that conservation of the natural environment is essential to maintaining the City’s quality of life and economic vitality
- Conserve open space and maintain the functions of natural systems while respecting the rights of property owners
- Establish a connected network of open spaces, conservation lands, greenbelts, and working farm and forest land that is accessible to City residents

key points | issues & priorities

- Seek a balanced approach to protecting the City’s natural resources while accommodating anticipated growth and maintaining the City’s role as a regional center
- Maintain the healthy, functioning natural systems that contribute to the City’s quality of life and economic vitality
- **Support efforts to reduce GHG emissions, implement adaptive measures, and continue to monitor impacts**

5 | Natural Resources

5 | A Vision & Purpose

Lebanon’s natural environment shall be widely considered a community asset, comprised of public and private ownership, whose conservation is essential to our continued health, quality of life, and the health of all species. It shall be recognized as in the public interest to encourage the preservation of open space, thus providing a healthful and attractive outdoor environment for the work and recreation of the City’s citizens, maintaining the character of the City’s landscape, and conserving its land, water, forest, agricultural, and wildlife resources.

Significant public and private investment shall improve the quality of our water, air and soils and shall have ensured the clarity of the night sky. A concerted combination of land protection, responsible stewardship and creative site planning and climate change mitigation and adaptation measures shall conserve significant natural areas and important natural systems for the benefit of current and future generations while respecting and preserving the rights of property owners. Conservation areas, other open spaces, and greenbelts shall be linked with the City’s built environment to provide “green infrastructure” (a network of natural lands, working landscapes and other open spaces that conserves ecosystem values and functions and provides associated benefits to people) supportive of convenient public access and compatible recreation, viable waterways, and thriving wildlife populations.

The City of Lebanon shall identify its significant natural resources and promote the preservation, conservation, responsible management, and harmonious use of those resources for current and future generations.

5 | B Issues & Priorities

5 | B-1 Balancing Resource Protection and Growth

Lebanon, as the regional center of the Upper Valley, will continue to face demand for growth and development. The City will need to change how it grows and develops if we are to retain the open spaces and rural character that residents value.

5 | B-2 Climate Mitigation & Adaptation

The Lebanon natural environment has experienced the effects of the global issue in which the earth's temperature is continuing to steadily rise, including the proliferation of invasive species, the continued increase in tick populations and the associated tick-borne diseases, increased stress at both the specie and natural community levels, and impacts associated with both warmer temperatures as well as extreme weather events. It is imperative that the community play a role in working to reduce the green house gasses associated with human activity. Adaptive measures will be necessary to lessen the expected continued impacts of a changing climate. The role of the natural environment will become increasingly important as it relates to minimizing additional GHG emissions, as well as sequestering the carbon generated from emissions. Many of the natural environment habitats will serve to provide a monitoring mechanism informing as to the continued impact of a changing climate.

5 | B-2 3 Healthy Environment, Healthy Community

Without clean air, water and soil, Lebanon will not be a place people want to live or work. For example, protecting the quality of the water in the Mascoma River is a paramount issue for Lebanon, which depends on the river as a municipal water supply. However, connections between public health and the health of the natural environment go beyond concerns about pollution. Healthy, functioning ecosystems provide many benefits to human communities, and degraded ecosystems can create hazards.

5 | C Existing Conditions & Trends

Among the City of Lebanon's greatest assets is the abundance and high quality of its existing natural resources, including, but not limited to: clean air and water, wildlife habitat, undeveloped natural vistas, agricultural and forestry enterprises, and open space. The 2010 Lebanon Phase II Natural Resource Inventory (NRI) provides a detailed description of Lebanon's natural resources and a foundation for future planning efforts. The following sections provide a general description of natural resource features.

5 | C-1 Air and Sky

Clean air contributes to public health and clear skies. Air pollution is a technically complex problem, but it is vital that high standards for air quality be enforced in planning Lebanon's growth. The primary threats to the region's air quality are our own automobiles, compounded by New

key points | Existing conditions & trends

- Clean air and dark night-time skies should not be taken for granted as the City continues to grow and develop.
- Lebanon’s hillsides and ridgelines are defining characteristics of the landscape, and are especially vulnerable to poorly planned development.
- The City’s water resources (rivers, streams, lakes, ponds, wetlands, floodplains) serve multiple functions, and their health is critical to Lebanon remaining an attractive place for people to live and work.
- While a large percentage of Lebanon remains undeveloped, a relatively small amount of open space is permanently protected from future development. Open space, scenic views and rural character contribute significantly to the City’s quality of life.
- There is a diversity of plant and animal species living in the City in a variety of habitats. Biodiversity is a hallmark of the health of the City’s natural environment.
- ~~Nearly all the energy consumed in the City is imported.~~

England’s geographic and meteorological position as ‘America’s tailpipe’. Emissions from industrial manufacturing and power generation well to our west reach New Hampshire as acid rain, which has rendered lakes and ponds void of life, leached minerals and nutrients out of forest soils, and accelerated weathering of stone structures. High levels of ground ozone affect the breathing process and aggravate asthma in chronic sufferers.

As development has expanded in Lebanon in recent decades, the use of outdoor lighting has grown, particularly on Route 12A, and along the Mt Support and Route 120 North corridor. While some lighting certainly is needed for visibility and security purposes, excessive lighting of commercial and industrial developments, parking lots, and streets can alter the character of a community. Excessive lighting wastes energy and causes glare, can impair vision, and cause accidents. Sky glow, which is reflected light visible in the night sky over large developments, reduces one’s ability to see celestial elements at night. Additionally, excessive lighting can negatively affect wildlife, particularly local and long-distance bird and amphibian migration, as well as the biorhythms of fish.

The City continues to amend the development regulations to guide the types of lighting fixtures permitted, favoring cut-off and other style fixtures. However the sheer volume of new development is increasing the sky glow, as do the increased unregulated lighting from single family homes and other types of development exempt from the development regulations.

Manmade carbon emissions continue to contribute to what is arguably the most significant threat to the earth’s ecosystems. Local Government Operation greenhouse gas emissions are routinely inventoried and measured, including highlighting a trend of significant reduction. A community scale inventory has yet to be conducted and so one can only speculate as to whether increases in technological efficiencies are offsetting the increased development trend.

5 | C-2 Landform

Lebanon’s landform is defined by the ridgelines and undulating hills that rise from the river valleys. The ridgelines are the most visible element in our scenic landscape and very much define the City’s character. As is intrinsic to northern New England, much of Lebanon has steep slopes.

Construction, cutting and filling, and loss of vegetation on steep slopes can reduce soil stability, increase runoff and erosion, degrade water quality, compromise wildlife and plant habitat, and diminish the City’s natural landscape. Locating development on steep slopes can also increase maintenance costs for infrastructure such as roads and sewer/septic systems. The City currently has a steep slope overlay district in order to prevent development on slopes in excess of 25 percent. The Steep Slope District currently includes all areas having slopes in excess of 25 percent that are located within the RL-3 zone. However, the RL-3 district contains a relatively small percentage of

the land area within Lebanon and therefore potential adverse impacts occurring on steep slopes continue to warrant monitoring and prevention measures as needed.

Lebanon's ridgelines create corridors through which wildlife can move, provide habitat for species like raptors and bobcats, and sustain many plants and animals not found at lower elevations. Some of the City's exemplary natural communities, including those defined by the New Hampshire Natural Heritage Bureau as rare or exceptional, are found on ridgelines. Ecologist and climate scientist have highlighted the emerging additional importance of these higher elevation habitats as species will be required to adapt to anticipated warming temperatures and migrate to suitable habitats.

The City's ridgelines contribute greatly to Lebanon's scenic character due to their current undeveloped state. The ridgelines are highly visible from many vantage points around the City, so a small development or even a single house on a ridgeline could be visible for miles.

As Lebanon has grown, the availability of flat dry land suitable for development has decreased. As a result, new development increasingly occurs in less suitable areas, such as those that have thin soils over bedrock, or outright ledge. Blasting may be required to make such land suitable for building. On the other hand, blasting may negatively affect underground water resources in bedrock faults and fissures, in addition to degrading the City's naturally scenic resources.

5 | C-3 Water Resources

Lebanon's water resources include more than 130 miles of rivers and year-round streams, as well as floodplains, wetlands, vernal pools and other hydrologically connected features as described in great detail within the NRI.

- 5 | C-3a **Surface Waters.** Major surface waters in Lebanon include: the Connecticut and Mascoma Rivers, and their many tributaries (Hardy Hill Brook, Great Brook, Stoney Brook, Blodgett Brook, among others); and Mascoma Lake, Boston Lot Lake and a number of smaller ponds.

Similar to many communities in New Hampshire, the terrain in Lebanon has resulted in roadways having been built in close proximity to surface waters. This has increased the vulnerability of these surface waters to pollution and spills. As described in the Community Facilities and Services chapter of this plan, the Mascoma River is Lebanon's public drinking water supply. As such, the City has particular concern for safeguarding the river's water quality. However, most of the river's watershed, its tributaries and headwaters, are outside the City.

In 2011, the Mascoma River became the sixteenth protected river in the New Hampshire Rivers Management and Protection Program (RMPP). The designation formalizes a local and state partnership for the management of the River. A local advisory committee ~~will~~ **is** coordinating the development and adoption of a river corridor management plan, **with assistance from the Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC).**

The New Hampshire Shoreland Water Quality Protection Act (**NH SWQPA**) is a regulatory measure that offers ~~limited~~ protection to the Mascoma River, as well as other surface waters in the City (Mascoma Lake, Bloods/Trues Brook, Great Brook and Boston Lot Lake). Within the 250-foot protected shoreland of these water bodies, various protection measures apply.

In 2014, the Lebanon Zoning Ordinance was amended to include the Riverbank Protection overlay district. This includes additional protection measures to water bodies regulated by the NH SWQPA, as well as additional water bodies outside of the jurisdiction of the NH SWQPA.

~~In 1998, the Lebanon Planning Board adopted the recommendations in the Connecticut River Corridor Management Plan of the Connecticut River Joint Commission (CRJC) regarding the protection of the Connecticut River and its watershed. The CRJC advises that preserving vegetated buffers along waterways, including smaller streams, is the most effective protection for water resources. Buffers filter polluted runoff, stabilize banks, regulate stream flow, recharge aquifers, and provide important habitat, among other benefits.~~

- 5 | C-3b **Floodplains.** The floodplains along the City's surface waters have experienced substantial development during the past 40 years, most notably, significant portions of the developed area on the west side of Route 12A. Floodplain development reduces flood storage capability, increasing the likelihood of greater flooding including areas not previously affected and increasing the threat to life and property posed by flooding. Floodplain development also reduces the scenic and habitat value of the river valleys. Since 1980, the City has been in compliance with the National Flood Insurance Program, which is administered by the Federal Emergency Management Agency. This program prohibits development in the actual floodway, but permits it in the 100-year floodplain if the developments are flood-proofed.
- 5 | C-3c **Wetlands.** Within Lebanon, there are an estimated 1,500 acres of wetlands. The small, incremental filling and degradation of wetlands over the years continues to add up to a significant loss of wetland acreage and function. Some wetland ecosystems in the City have become increasingly isolated islands surrounded by development, which decreases their ecological value, particularly as habitat. The NRI provides descriptive information related to the functions and values of Lebanon's wetlands, as well as a priority ranking of their importance.

The value of wetlands for groundwater and stream recharge, flood attenuation, pollution

abatement, and wildlife habitat is still vastly under-appreciated. Wetlands and their valuable functions essentially do the work of engineers free of charge, saving us money and effort in pollutant and flood mitigation.

As the land area surrounding many wetlands is critical for maintaining the functions and values of the wetland itself, in 2014 City amended the Zoning Ordinance to include the Wetland Buffer Overlay District. The essence of the regulation is to restrict development from occurring within the buffer area, as well as additional protection measures.

5 | C-4 Land Resources

- 5 | C-4a **Open Space.** Lebanon residents have a long history of expressing their appreciation for and desire to maintain open space. Open space helps define community character, is home for wildlife and plants, protects drinking water supplies, and provides opportunities for recreation.

In addition to the numerous ecological benefits that it provides, studies have demonstrated the high economic value contributed by open space land. Open space is a “fiscal winner” for the City, as it brings in more money in taxes than it uses in services. Open space also increases the value of nearby developed land. It is vitally important to attracting and retaining businesses, and is also the foundation of the agriculture, forestry, tourism, and recreation industries.

The City still has a considerable amount of undeveloped (open/forested/agricultural) land. The ~~NRI~~ **Open Space Plan** identifies **21,293** acres as undeveloped or natural habitat, representing approximately 81% of the City’s land area. ~~in addition to 635 acres of agricultural land.~~ Approximately 18,000 acres of open space lands are in Current Use, a reduced-rate property tax classification that is intended to help preserve the land base for forestry, agriculture, and other traditional uses.

- 5 | C-4b **Conserved Land.** Approximately 2,100 acres of land within the City are conserved and protected from future development. These conservation lands offer many beautiful and accessible areas that provide important habitat for plants and wildlife; protect water and air quality; and fulfill resident’s needs for recreational opportunities, an experience of nature close to home, and outdoor solitude. ADA access is provided where feasible and has been incorporated into the management policies of the City’s conservation lands.

There are more than 21 miles of trails on the City’s conservation lands, as depicted on **each property’s property map generated by the City.** ~~the 2010 Lebanon Trails map.~~ Additionally, there are ongoing efforts to identify and plan for additional linkages to a community wide trail network. The City employs a seasonal ranger to help maintain the City’s conservation lands, including the

trails, and has recently stepped up efforts to recruit volunteers to assist as well.

- 5 | C-4c **Working Land.** Agriculture and forestry play an important role in the regional and state economies, as well as in stewardship of our natural resources and scenic landscape.

Increased development pressures and decreased profitability of small farms (partially due to higher tax burdens) have gradually diminished the rural and agricultural character of Lebanon's outlying areas. However, the working farms, ~~and~~ orchards, and woodlots that remain continue to contribute to our economy, and the City's remaining undeveloped prime agricultural soils leave the door open for continued farming in the future. Local farms provide fresh, high-quality food directly to the community and the region, eliminating the need for energy- and cost-intensive shipment and travel. They contribute directly and also indirectly to the economy by providing the quality of life that attracts companies and their workforce as well as tourists.

Forest lands are a dominant feature of Lebanon's landscape and ecosystem. Much of Lebanon is still wooded, and the City's productive forests are an important renewable resource. Several forest-based commercial enterprises (logging, milling, maple sugaring) rely upon the availability of healthy woodland. Forest fragmentation and conversion to other uses have many ecological, economic, and social impacts, such as reduced water quality, habitat loss, and declining traditional recreational opportunities

5 | C-5 Plants and Animals

- 5 | C-5a **Biodiversity.** Biodiversity enriches the community by providing environmental, economic, and social benefits. A diverse ecosystem can better survive disease and disturbance; can maintain essential biological services such as natural recycling of nutrients and wastes; and can provide models and resources for human advances in agricultural, medical, and other endeavors.

Lebanon is home to a wide variety and abundance of plants and animals, including more than 40 rare or endangered species. The 2010 Natural Resource Inventory provides a tremendous amount of information related to Lebanon's biodiversity, identifying 73 "Significant Ecological Areas" (SEAs) within the City's borders.

- 5 | C-5b **Urban Forests.** Trees in residential and commercial neighborhoods serve many important roles in the City of Lebanon. Among other benefits, urban trees provide shade, beauty, windbreak, cleaner air, privacy, and higher property values. When planted in the proper location, trees can help decrease summer cooling and winter heating bills. Also, the leaves, branches and trunks of trees catch rainwater before it reaches the pavement, reducing runoff, erosion, pollution, and other stormwater effects. **These benefits are of increasing importance as we experience climate change**

impacts in or region. Infestations, such as that of the Emerald Ash Borer pose a serious threat to both the urban forest, as well as rural forest.

- 5 | C-5c **Invasive Species.** Through the efforts of the ~~Connecticut River Joint Commissions~~, the New Hampshire Department of Agriculture Invasive Species Program, and other organizations, the City has been learning about problems associated with invasive exotic plants in Lebanon and in the region. The Conservation Commission regularly recommends that developers eliminate or limit the spread of such plants in the course of their work, and the Planning Board's Site Plan Review Regulations include a list of invasive exotic species that cannot be used to satisfy the landscaping requirements. However, broader coordinated efforts are needed. Purple loosestrife, buckthorns, honeysuckles, barberries, Japanese knotweed, as well as other invasive plants, occur and are spreading on all city-owned conservation lands, along roadsides and power-line cuts, as well as on private land throughout Lebanon.

~~5 | C-6 Energy~~

~~Lebanon's energy future is tied to policies and economic forces at the state, national, and international levels. Most of the City's energy sources are imported from outside of the region, although wood remains an important fuel for many residents. Approximately four percent of the energy demand is satisfied by energy generated within the region (UVLSRPC Regional Plan, 1998). The Lebanon Energy Advisory Committee (LEAC) is currently developing an energy master plan, which will address energy conservation as well as other related measures.~~

5 | D **Future Challenges & Opportunities**

5 | D-1 **Impact of Development on Natural Resources**

Lebanon's natural resources have degraded over time as the City has grown and changed. Many formerly open fields, including some of the Northeast's richest soils, have been covered with shopping centers, houses, and other types of development. Some of the City's most significant floodplains and wetlands were drained or filled in before the advent of protective regulations, and development pressure continues to affect these resources. In the uplands, wooded ridges and hillsides are being fragmented by roads and rural development. Increasing vehicle emissions, fertilizers, pesticides, road salt and other pollutants threaten air and water quality even in rural areas of Lebanon.

Most Numerous ~~current~~ environmental impacts result from development, often driven by regional pressures. New parking lots, stores, offices, industries, medical facilities and services attract more people and stimulate demand for more development. Small environmental impacts may not be

key points | future challenges and opportunities

- As Lebanon faces growth pressures, careful planning and better protection are needed to ensure that the City preserves its important natural resources as it grows as a vital economic center.
- Lebanon needs to act, in concert with the state and federal governments, to prevent air pollution and preserve dark nighttime skies as the City continues to grow and develop
- Lebanon needs to expand its regulations applying to development on steep slopes to cover the entire City and to address the related issues of ridgeline development and the potential ecological damage caused by blasting.
- Lebanon needs to be actively developing and implementing watershed protection plans, particularly for the Mascoma River (the City's water source), in coordination with neighboring communities and the state.
- ~~– Lebanon needs an open space plan to identify key open space resources, and identify strategies and techniques to maintain open space for future generations.~~
- Lebanon needs to seek out the information and expertise needed to more effectively protect plant and animal species, and improve the quality of habitat on public lands.
- ~~– City government should lead by example through its efforts to conserve energy in City operations and increase the use of renewable, local energy sources~~
- There should be greater coordination among City Departments, staff and volunteers to increase the effectiveness of Lebanon's efforts to protect natural resources

immediately visible and dramatic, but over time the impacts accumulate and can be damaging in the long term. As Lebanon faces growth pressures, careful planning and better protection are needed to ensure that the City preserves its vital natural resources as it grows as a vital economic center. Without proper protection through local regulations, incentives and educational efforts, the City could lose the very assets that have made this community a desirable a place to live and do business.

5 | D-2 Air and Sky

- 5 | D-2a **Climate Change.** The challenge of addressing issues associated with a warming planet can be daunting but implementing both mitigation and adaptation measures are imperative to minimize disruptions of natural ecosystems. As to mitigation measures, arguably the technological solutions currently exist and therefore it is primarily a change in the political will to take place to fully engage in the necessary deployment of these technologies.

Maintaining healthy forests is a mitigation measure as forest can naturally store carbon in what is referred to as carbon sequestration. Programs to provide financial incentive to landowners to engage in forest carbon sequestration are beginning to emerge and could be an attractive option for Lebanon landowners. Local working forests supporting active commercial harvests provide local economic benefits, in addition to providing a sustainable source for building products. A well-managed working woodlot can support sequestration measures by restoring the forest closer to it's natural condition.

- 5 | D-2b **Air Pollution.** Local sources of air pollution, such as emissions from vehicles and industries, and dust from construction sites, should be monitored by the City as well as by the state. The Clean Air Act of 1970 directs the states to regulate air pollution under guidance from the federal Environmental Protection Agency. When air quality in a region declines and causes an area to be in non-attainment (non-compliance), the Clean Air Act requires that pollution-control programs be implemented to reduce the pollution concentrations to within allowable limits. Now that portions of New Hampshire no longer meet Clean Air Act standards, the City cannot take clean air for granted. Detailed information on air quality, including regulations and solutions, can be obtained from the NHDES Division of Air Resources. **** Not sure if this is still relevant? And the City to monitor?**

- 5 | D-2c **Dark Sky Environment** ~~Outdoor Lighting~~. Communities often take for granted the night sky that offers star and planet gazing. **Excessive lighting has been shown to have adverse effects on humans, wildlife and the environment. This can include disrupting a person's biological clock, as well as animal species migration and nesting patterns. Most likely Lebanon would not qualify as dark sky community as certified by the International Dark-Sky Association, but they could demonstrate a commitment to preserving existing night sky conditions.**

Within the development review process, **as well as City municipal operations**, outdoor lighting installations should be designed to provide the minimum light levels needed for adequate visibility while avoiding over lighting and its associated problems such as glare, sky glow and light trespass. For instance, down-lit fixtures, cut-off lighting, timers and motion detectors can be used.

5 | D-3 Landform

- 5 | D-3a **Steep Slopes**. To avoid adverse impacts from development on steep slopes, the City should consider expanding the existing steep slope overlay district to apply appropriately to all zoning districts. The steep slope district should be reviewed and modified as needed to incorporate appropriate measures such as performance or review process techniques.
- 5 | D-3b **Ridgelines**. As recommended in the 1986, 1993 and 2006 Lebanon Master Plans, a ridgeline conservation overlay district should be incorporated into Lebanon's Zoning Ordinance, in order to ensure proper siting of development that would minimize impacts to the existing landscape and scenic qualities of the ridgelines. Adopting a ridgeline conservation overlay district would assist with maintaining the functions and values of these ecologically sensitive areas. The overlay district could include regulating the siting and design of telecommunications towers, wind turbines and associated facilities.
- 5 | D-3c **Bedrock and Blasting**. Examining the effects of blasting on groundwater, as well as on the viewsheds of Lebanon, should be part of the development review process. Ideally, City staff should confer with experts in hydro-geomorphology. The New Hampshire Department of Environmental Services Geology Unit is actively mapping bedrock geology in partnership with municipalities, and also is interested in conducting a comprehensive study of the effects of blasting on water quality and quantity. The City should participate in these projects. *** Is this still relevant? And I don't think the status of the DES program is current?*
- 5 | D-3c **Roadway Fragmentation**. Historically it was often cost prohibitive to both construct as well as maintain lengthy driveways to serve residences. Often, the preference was to locate the home as close to possible to an existing maintained road. A trend that is well underway in the more affluent communities within the Upper Valley, and has been emerging in Lebanon, is to locate house sites in remote locations and to serve

with driveways that can exceed 1/2 to 1 mile or greater in length. These features fragment undeveloped blocks of land, resulting in increased predation, the spread of invasive species, and other adverse effects on the natural environment. This development phenomenon should be analyzed so as to more specifically assess impacts, with proposed solutions to address the issue developed as appropriate.

5 | D-4 Water Resources

5 | D-4a **Watershed Protection.** As Lebanon is dependent on the Mascoma River for its drinking water and is the most populous community in the watershed, it would make sense for the City to **engage** ~~take the lead in~~ planning efforts for the watershed. The development and adoption of a water resources management plan would lay the groundwork for appropriate ordinances to protect Lebanon's surface and ground waters. Elements of the plan should include techniques or methods to address water quality degradation resulting from non-point source pollution, erosion, runoff, etc., such as:

- Implementing measures into the development review process (e.g. Low Impact Development)
- Limiting the amount of impervious areas
- Preserving vegetated stream buffers
- Reducing herbicides, pesticides and road salt near waterways.

Other elements could include landowner education and outreach, a water quality testing program, waterway clean-up events, aquifer and source water overlay districts, and land conservation techniques (e.g. easements, acquisition). The Water Treatment Plant sub-watershed would be the logical starting point for defining the scope of a water resources management plan but Lebanon residents would benefit from having a plan include all of the community's water resources.

Any watershed protection efforts in both the Mascoma River and Connecticut River watersheds should be coordinated with other watershed communities. Continued participation in the Upper Valley Lake Sunapee Regional Planning Commission, the Mascoma River Local Advisory Committee, and Connecticut River Joint Commission's (CRJC) Upper Valley River Subcommittee will offer opportunities for regional information sharing and collaborative solutions to common challenges. Partnerships with private organizations to achieve water resource objectives can be beneficial **and should be explored as part of the watershed planning effort.** ~~as evidenced by examples such as the Lebanon Rotary Club's String of Pearls project, which seeks to preserve some of the remaining green areas along the Mascoma River.~~

A comprehensive community campaign to clean up Lebanon's waterways would enhance water quality and scenic resources. As these natural assets improve, the City will benefit greatly from increased property values and quality of life. The Lebanon Rotary Club has performed a

considerable public service by organizing a biennial clean-up of the Mascoma River. This event could be augmented **or directly coordinated** by other local civic, neighborhood, or school groups, and supported by the City, to bring further attention to the river.

- 5 | D-4b **Wetland Conservation.** The Lebanon Zoning Ordinance **includes** ~~does have~~ a wetland conservation overlay district to prevent the destruction of wetlands. The district includes a buffer for high and very high value wetlands, as categorized in the 2010 NRI.

Wetland impacts should continue to be avoided when the opportunity exists. In situations where temporary impacts, or even permanent are unavoidable, the functions and values of each wetland should be the focus of the permitting review process. In situations where mitigation is required as the impacts exceed the requisite threshold, the parties associated with the proposed impacts should prioritize mitigation opportunities on site, within proximity, or within the community, likely in that order.

~~Designation of wetlands as “prime” is an added layer of protection in the state dredge and fill permitting process. *Buffers for Wetlands and Surface Waters: A Guide for New Hampshire Municipalities* (Audubon Society of New Hampshire and New Hampshire Office of State Planning, revised 1997) recommends 100 feet as a reasonable minimum buffer width to protect the values of wetlands under most circumstances. The Lebanon Conservation Commission has historically promoted the idea of including a variable wetland buffer within the Lebanon Zoning Ordinance.~~

5 | D-5 Land Resources

- 5 | D-5a **Open Space Planning.** Since responsible growth is so important to the City’s livelihood and vitality, it is critical to identify and implement planning techniques that encourage respectful development while preserving important landscapes. **The Lebanon Open Space Plan was completed in 2021 fulfilling a long-standing desire for the community to have such a planning tool document. The plan provides a vision statement, statement of purpose, as well as general goals. The prioritization framework espoused within the plan sets open space benchmarks and identifies key components of the landscape that warrant conservation protection measures. The plan provides an open space definition, and articulates the values open space provides, as well as concerns associated with the loss of open space, and addresses the question of how much open space does a community need?**

An open space plan should be developed to identify key open space lands; natural, scenic, and historic resources; as well as important strategies and tools for implementing the plan. A primary goal for developing this plan should be to maximize the size of connected open space areas in order to improve possible public access, and to conserve and prevent further fragmentation of wildlife habitat. Without proactive techniques in place to identify key parcels before a landowner makes the decision to sell or develop a parcel, Lebanon's rural landscapes will remain at risk.

A forward-looking land conservation program, based on an open space plan, should be generated to purchase or accept gifts of property, conservation and public access easements, and development rights from willing landowners for important properties. Priorities for selection of these properties should come from the open space plan but should include:

- ◆ Drinking water supply protection lands
- ◆ River & lake access, Significant Ecological Areas from the NRI, greenways, and key wildlife corridors & crossings
- ◆ Geologic features such as Rix Ledges, Devil's Kitchen, Tipping Rock, and Granite Flumes

The open space plan is designed to serve as the foundation for a forward-looking land conservation program that is designed to purchase or accept gifts of property, conservation and public access easements, and development rights from willing landowners for priority areas as detailed within the open space plan.

With the completion of the Lebanon Open Space Plan a subsequent important step in the process is to conduct an outreach and education program, so that members of the public can learn more about and participate in the benefits of land conservation and the resources available.

The other important step in this process is to conduct an outreach and education program, so that members of the public can learn more about and participate in the benefits of land conservation and the resources available.

The the Department of Environmental Services ARM Fund is one potential source of funding, including having been used successfully in Lebanon for past open space protection projects. The Land and Community Heritage Investment Program (LCHIP) could be one another source of funding for high-priority projects, if the state legislature continues to fund it.

Money received from Land Use Change Tax penalties (for removing land from the New Hampshire Current Use program) should continue to be used to conserve new lands, as well as to maintain

previously acquired ones. The City should continue to dedicate 100 percent of its Current Use penalty receipts to the Lebanon Open Space Trust fund, as recommended in Land Use chapter of this Master Plan.

Besides purchasing open space or protective easements, there are many innovative land use controls that can be used to preserve more open space areas, such as conservation design and transfer of development rights. Generally speaking, conventional subdivision design creates residential developments in which all land is divided into house lots and streets, with the only open space typically being the yards around single-family homes. On the other hand, conservation design provides greater flexibility for the design of a development to encourage the preservation of valuable open land and natural features and to promote more efficient use of land, community facilities, services and utilities. As a result, the same number of homes can be built in a less land-consumptive manner. This technique allows the balance of the property to be permanently protected and added to an interconnected network of community green spaces. Conservation design is an equitable way to balance both conservation and development objectives.

As recommended in the Land Use chapter, the City should **continue to** require conservation design where appropriate with incentives to ensure that conservation design is a financially favorable alternative for developers. ~~The chapter also recommends that the City apply conservation design principles to industrial and commercial development.~~

The City should also study transfer of development rights and other methods to protect important open space. These innovative techniques could help the City attain a pattern of development that matches the overall vision of this Master Plan. The timely development of ~~a~~ **the** comprehensive open space plan ~~will~~ provides a guide for this process, by helping the City identify important natural, historical, and cultural features that it wishes to preserve, and prioritize its opportunities.

As potential trail linkages are identified, the City should work with willing landowners, land trusts, and other conservation and recreation groups to acquire trail easements when feasible. The City also should negotiate with developers of large or strategically located parcels to protect existing trails and/or set aside additional land, if feasible, for a trail system or connection.

City-owned conservation properties should continue to be guided by management plans developed by professional land stewards, with policy oversight from the Lebanon Conservation Commission. Implementation of management recommendations could be achieved by a combination of professional staff and volunteer assistance, with outreach to neighbors of these properties.

5 | D-5b **Working Lands.** Since agriculture is an important contributor to Lebanon's scenic, historic, and

cultural quality of life, **the municipality should continue to be supportive of such uses, including being amenable to meeting the needs of the local agricultural community, including incorporating flexibility in regulations and policies to accommodate the unusual needs of agricultural businesses.**

~~incentives should be created or continued to ensure that farmlands will remain open and viable in the future. For instance, the City can allow flexibility in regulations and policies to accommodate the unusual needs of agricultural businesses, such as expanding agricultural uses in some zoning districts.~~ The community also should continue to actively support the Lebanon Farmer's Market and marketing of Lebanon's agricultural resources, and target with farmers the fiscal, regulatory, and practical obstacles to sustaining local agriculture.

In conducting silvicultural activities, sound forestry practices should be followed, especially on ridgelines, steep slopes, and adjacent to waterways, to prevent sedimentation and erosion that contribute to the degradation of water quality. The New Hampshire Division of Forests and Lands has a publication entitled *Best Management Practices for Erosion Control on Timber Harvesting Operations in New Hampshire* (2000) that is a good reference for anyone working in the woods, along with *Good Forestry in the Granite State: Recommended Voluntary Forest Management Practices for New Hampshire* (2010).

5 | D-6 Plants and Animals

- 5 | D-6a **Urban Forests and Greenways.** As people become more aware of the benefits of trees, they realize the importance of maintaining the health of existing trees and the desirability of planting new ones. It is very important that native and site-suitable species be planted in the right places, in order to keep maintenance costs low and reduce impacts from natural hazards such as ice storms.

~~The City may want to consider contracting with a forester or developing a volunteer tree board to~~

should continue to support the recent effort of establishing a volunteer tree board who could utilize the assistance of an urban forester to inventory important trees, especially those in the Lebanon and West Lebanon downtowns, and to develop a tree preservation plan outlining proper care and maintenance. Alternatively or additionally, the City could re-create the tree warden position to encourage tree-planting in municipal rights-of-way. Such an effort might even produce valuable input for greening locations such as the Route 120/I-89 (Exit 18) interchange. Public education is also important in regards to timber and woodlot management, as well as residential trees. To this end, the City should continue observing Arbor Day and maintain its Tree City USA status.

- 5 | D-6b **Biodiversity.** The NRI offers the basis for proposing changes to zoning, site plan, and/or subdivision regulations to minimize any adverse impacts from new development. Several state agencies and other organizations can offer the City practical, research-based suggestions in this regard, such as the NHDES inter-departmental fact sheets on minimizing development impacts on wildlife, and on habitat-sensitive site design and development practices. When large parcels are developed near important natural areas, existing wildlife corridors should be identified and preserved, including road crossings and fish-friendly culverts constructed with the advice of wildlife biologists. Conservation design and other innovative zoning techniques (elaborated upon in the Land Use chapter of this Master Plan) might also be utilized to provide or protect habitat. The NRI can serve as the foundation for an Open Space Plan, which in turn will provide guidance and specificity as to maintaining the existing biodiversity that Lebanon enjoys.
- 5 | D-6c **Invasive Species.** It is time to inventory infestations of invasive species in Lebanon, and develop plans to control these plants and increase awareness of the damage that can be done when they are left unchecked. City workers and private landowners and contractors alike should follow best-management practices for removal and disposal of invasive species. Roadside mowing, for example, should be done prior to seed development and the blades should be scrupulously cleaned before leaving the mowing site.

5 | D-7 ~~Energy Conservation~~

~~While the City is limited in the influence it can have on a global scale, it can exert some control over local energy choices. LEAC's Energy Master Plan, currently being written, will detail Lebanon's energy use, choices and priorities. The City should make a shift toward greater local reliance on renewable resources such as geothermal, solar, wind, clean wood, and hydro power. Examples worth serious consideration include converting public streetlights to solar power, recovering methane from the Lebanon landfill, and installing wood-chip fired boilers or geothermal heat pumps in new public building projects such as new schools. Incentives should be given to large commercial projects for doing the same.~~

~~City government can provide leadership to the community by reducing its own energy use while reducing budget costs over the long term. Many energy conservation upgrades were made throughout City Hall several years ago, following an energy audit by an independent firm. Audits should be periodically carried out for all City buildings and operations. The City also can play an important role in encouraging energy conservation for transportation, by encouraging cluster development on residential, commercial, and industrial sites. Mixed use development, as well as encouraging alternatives to automobile use, will help decrease multiple automobile trips and save energy. In addition to directing development patterns, the City can encourage energy efficient site designs. For instance, situating buildings with southern exposure, as well as planting trees for~~

winter wind buffers and summer shade, can effectively reduce energy costs over the long term.

5 | D-8 Coordination

Development and growth are inevitable and welcome, but it is imperative that the City direct development in order to preserve its open land and scenic resources. This can best be achieved through a comprehensive municipal open space plan; coordinated zoning, site plan, and subdivision regulations; and the Capital Improvement Plan.

The Conservation Commission and related staff play a pivotal role as stewards of the City's natural and scenic assets and, along with the Recreation Commission and related staff, its recreational assets. As volunteers, Conservation Commissioners have an important job to do with limited time and resources. Accordingly, City staff and Conservation Commission members should continue to keep one another apprised of ongoing opportunities for training and education, so that they can be better-informed and more effective decision-makers. Communication should be improved among the City's boards, departments, and citizens, to ensure that the policies and actions of one body are not inconsistent with those of others, and that Lebanon's treasured natural resources are not compromised. Efforts to partner with local and regional organizations, neighboring towns, and state agencies (along with private landowners themselves) also should continue on behalf of conservation.

Through successive master plans, land conservation efforts, municipal elections, partnerships with the private sector, and other processes, the people of Lebanon have sustained an interest in protecting the City's natural resources and scenic character. The Conservation Commission should continue to engage the public in conservation, with multiple partners in the schools, in scouting and other service organizations, in recreational contexts, and in neighborhoods by sponsoring community educational events, outings, workdays, and celebrations.

**Agenda
Conservation Commission
December 8, 2022**

**Agenda Item #4C
Study Items**

**Discussion re: Potential
disposition of city-owned parcels
for housing**



CITY MANAGER'S OFFICE
City of Lebanon, NH
51 North Park Street
Lebanon, NH 03766
(603) 448-4220 fax (603) 966-3122

TO: Relevant Boards/Committees/Commissions, City Staff, and the Lebanon School District
FROM: Deputy City Manager David Brooks
DATE: November 14, 2022
RE: **Reviewing Properties for Determination as Surplus to the City's Needs or Suitable for Redevelopment**

On April 21, 2022, the City Council unanimously adopted a Resolution directing the City Manager to take various steps to enable, incentivize, and partner in the development of housing needs that are not currently being addressed by the market. Among the specific actions to be taken was to "[p]artner with the Lebanon Housing Authority and other residential developers to utilize city-owned properties for the development of new housing units, including the possibility of a 'demonstration project' on a city-owned parcel with high visibility and an opportunity for a reasonable number of units to help overcome barriers to affordability."

As a result of the directive, the Planning & Development Department has reviewed a list of city-owned properties to identify parcels that might be usable for housing or other new development. Based on a cursory review of aerial imagery and natural resource information, including topography and wetlands information from the City's GIS database, the following is an initial list of parcels owned by the City that appear to be potentially-developable:

<u>ID</u>	<u>Site Address</u>	<u>Current Use of Property</u>	<u>Lot Area (Ac)</u>	<u>Lot Area (Sqft)</u>	<u>Zoning District</u>
4-79	0 N Main St	Vacant	0.22	9,583	R-3
14-23	0 N Main St	Vacant - slopes?	1.30	56,628	R-3
26-27	0 NH Route 120	Vacant - OS for Wolf Run?	8.20	357,192	R-1
64-1	0 Hanover St Ext	Vacant	1.92	83,635	R-1/R-3
77-106	0 Barrows St	Vacant	0.51	22,216	R-3
77-107	0 Barrows St	Vacant	1.01	43,996	R-3
79-39	0 Townsend Ter	Vacant - slopes?	0.79	34,412	RL-1
82-11	526 Dart. College Hwy	Vacant - wetlands? power line easement?	1.99	86,684	RL-1
86-55	5 S Main St	Vacant	0.22	9,583	CBD
86-56	3 Seminary Hill	Vacant	0.50	21,780	CBD
90-7	0 Ora Ave	Vacant - slopes?, wetlands?	0.23	10,019	R-3
106-49	0 Mechanic St	Vacant	0.83	36,155	GC
107-76	0 Pine St	Vacant - slopes?	0.22	9,583	R-2

109-39	Dartmouth College Hwy	Vacant	2.60	113,256	R-3
117-4	0 Poverty Ln	Vacant-power line easement? Airport restrictions?	2.08	90,605	IND-L
124-11	0 Stoney Brook Rd	Vacant	0.20	8,712	GC
125-14	0 Eastman Hill Rd	Vacant	3.50	152,460	RL-2
131-7	0 Poverty Ln	Vacant – airport restrictions?	40.59	1,768,100	IND-L

Additional review of this list of parcels is necessary to verify whether any of these parcels are realistically developable or whether slopes, wetlands, easements, or other encumbrances make development unlikely or impossible.

Determinations must be made as to whether any of the parcels listed above are suitable for redevelopment and whether those parcels can be deemed surplus to the needs of the City in accordance with City Council Policy CC-102, *Real Property Transactions*. Your input is sought for the review of these parcels, which will aid in the determination as to whether the City should retain these parcels or whether any of them can be deemed surplus and considered by the City Council for potential disposition.

Please submit any comments and input to me no later than December 31, 2022.

Enc. Property Record Card and GIS map for each parcel

Cc: Planning Board
Conservation Commission
Lebanon Fire Chief
Lebanon Police Chief
DCM Public Works
Recreation, Arts & Parks
Airport Manager
Planning & Development Department
Lebanon School District