



LEBANON CONSERVATION COMMISSION
FEBRUARY 11, 2021 - 6:30 PM
REMOTE VIA MICROSOFT TEAMS
LEBANONNH.GOV/LIVE

-
- 1. Call to Order**
 - A. Review of meeting procedures and NH RSA 91-A "Right-to-Know" requirements.
 - 2. Approval of Minutes**
 - A. January 28, 2021
 - 3. Permit Review**
 - A. City of Lebanon- Review and Comment on NHDES Wetland Standard Dredge and Fill Application (Minor Impact) to fill in 9,133 s.f. (permanent impact) of forested wetlands in connection with its planned phased development of the Airport B Lot. CC2021-01 NHDES #2020-00237.
 - 4. Study Items**
 - A. Election of Officers - Chair and Vice Chair
 - B. NH DOT Route 120 Multi-Modal Project - ConCom Recommendations
 - 5. Committee Reports**
 - A. Conservation Lands Monitors (Various Members) (10 Minutes)
 - B. Lebanon Biodiversity Group (D. Lacey) (10 Minutes)
 - C. Workshops & Educational Opportunities (Various Members) (10 Minutes)
 - 6. Other Business**
 - A. None
 - 7. Future Agenda Items**
 - A. None
 - 8. Open to the Public**
 - 9. Adjournment**

The order of agenda items is subject to change.

Due to the current situation with the COVID-19 Pandemic, the City of Lebanon is offering its meetings via Microsoft Teams. Members of the public are encouraged to attend 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 Microsoft Teams software or by phone. Please visit LebanonNH.gov/Live for full details.

THE AGENDA, IN ITS ENTIRETY IS AVAILABLE ON THE CITY'S WEBSITE AT LEBANONNH.GOV

**Agenda
Conservation Commission
February 11, 2021**

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

January 28, 2021

DRAFT

**LEBANON CONSERVATION COMMISSION
REGULAR MEETING MINUTES
Remote Via Microsoft Teams
LebanonNH.gov/Live
Thursday, January 28th, 2021
6:30 PM**

MEMBERS PRESENT: Ernst Oidtmann (Chair), Sarah Riley (Vice Chair), Erling Heistad, Bruce James, Donald Lacey, Susan Almy, Chris Johnson, Barbara Hirai (Alt.)

MEMBERS ABSENT: Suellen Balestra (Alt.), Darla Bruno (Alt.)

STAFF PRESENT: Mark Goodwin (GIS Coordinator)

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

- Mr. Mark Goodwin reviewed the meeting procedures for remote meetings and NH RSA 91-A “Right to Know” requirements. A Roll Call of Commission Members who participated remotely are listed above.
- It was decided to pass on the election of officers for this meeting.

2. APPROVAL OF MINUTES: December 10th, 2020

Mr. Lacey MOVED to approve the December 10th, 2020 Minutes as amended and presented in the January 28th, 2021 agenda packet.

Seconded by Mr. James.

Amendments:

Page 2 & 3, Various lines Change “Oddly” to “Audley”

Page 3, Line 14 Add “Mr. Heistad said he was a foreman of a construction crew years ago and he said that what Audley needs the Conservation Commission will not want to give. The ground would be wrecked after the construction company was done using it and would not be environmentally valuable afterward. Mr. Heistad said he never saw a construction site reclaimed to a point that they could be proud of. He doubted that Audley would be capable of treating the land the way the Conservation Commission would like to see it treated. Mr. Heistad cautioned approving Audley using Two Rivers for their construction site.

Page 3, Line 30 Change “ration” to “ratio”

Roll Call Vote:

Ernst Oidtmann, Erling Heistad, Sarah Riley, Donald Lacey, Susan Almy, Bruce James, and Chris Johnson all voting Yea.

None voted Nay.

**** The Vote on the MOTION was approved (7-0).***

1 **3. PERMIT REVIEW: None**

2
3 **4. STUDY ITEMS:**

4
5 **A. Goals and Objectives for Calendar Year 2021-including Master Plan Action Item**
6 **Implementation, as well as additional efforts desired by the Conservation Commission members:**

7 Mr. Goodwin asked the Commission what they would like to work on and make a priority for the
8 Conservation Commission to accomplish in the coming year. Chair Oidtmann said that land conservation
9 was his top priority. Mr. James liked the idea of educational programs for the public.

10
11 Ms. Almy was concerned with the wildlife corridor being split by Route 120 near the hospital. She was
12 concerned with the people that speed down that corridor which makes it difficult for the animals to cross.
13 She was wondering if there could be something done to slow the traffic down such as signs educating the
14 public as to why they should not speed in that area. Discussion took place among the Commission
15 members about ways to slow the traffic down on Route 120. Some thoughts were light-up speed signs,
16 educational signs explaining why the speed was lower in that area, such as animal crossings, and
17 somehow making the road look narrower.

18
19 Chair Oidtmann said that the NH Department of Transportation had set up a study for the Route 120
20 corridor from Lebanon to Lahaye. He had emailed Marcy Miller with some suggestions. Ms. Almy
21 suggested putting islands in on Route 120. Mr. James said the Mt. Support triangle area on Route 120
22 could be a study area for the Conservation Commission this coming year. It was suggested that educating
23 the public about the wildlife corridor could be helpful.

24
25 Ms. Hirai would like to acquire more land to protect and would also like to work on getting the Volunteer
26 Stewardship Program going. Mr. Goodwin said the City has an open space vision that is being worked on
27 that will help the Conservation Commission identify land to protect.

28
29 Vice Chair Riley agreed with Ms. Hirai and would like to see the Volunteer Stewardship Program going
30 as well. She said getting the website and forms up and running would be key to the program. She would
31 also like to work on the amphibian Big Night again this year as well as working with the public on
32 invasive species such as the Garlic Mustard initiative that was done last year. She would also like to see a
33 more formal Tree Board created.

34
35 Mr. James suggested taking some time during the February and March meetings to prepare a statement to
36 send to the State of NH on the Route 120 corridor. Mr. James said he would work on a draft document
37 that he will bring to the Commission in February to go over and then perhaps it could be finalized during
38 the March meeting. He asked that the Commission members send him any of their thoughts and concerns
39 about Route 120 so he can work on the draft document before the next meeting in February.

40
41 **B. Concise Statement for Proposed Zoning Amendments: Prepare a concise statement with regard**
42 **to certain proposed Zoning Amendments, in accordance with Section 1000.4D of the Zoning**
43 **Ordinance:** Mr. Tim Corwin, Senior Planner, spoke about needing concise statements from the
44 Conservation Commission for the proposed Zoning ordinance amendments. He explained that there were
45 three amendments going on the ballot this year. Amendment #1 was about adding additional building
46 height; Amendment #2 was about Houses of Worship; and Amendment #3 would clarify maximum

1 density requirements in the R-3 District. He came before the Conservation Commission back in
2 November and explained the proposed Amendments.

3
4 The members discussed the concise statements, and all agreed they were fine as presented to them for
5 review.

6
7 **Ms. Almy MOVED to accept the concise statements as the Conservation's concise statements for the**
8 **proposed Zoning Amendments as presented on Page 3 of Agenda Item 4B-Concise Statement for**
9 **proposed Zoning Amendments.**

10 **Seconded by Mr. Johnson.**

11
12 **Roll Call Vote:**

13 **Ernst Oidtmann, Christopher Johnson, Erling Heistad, Sarah Riley, Donald Lacey, Bruce James,**
14 **and Susan Almy all voting Yea.**

15 **None voted Nay.**

16
17 *** The Vote on the MOTION passed (7-0).**

18
19 The concise statements are as follows:

20
21 **Amendment #1 (Additional Building Height in the R-1 District)**

22 The Conservation Commission approves of and endorses the adoption of the proposed Zoning
23 Amendment as it supports the goals of the Lebanon Master Plan. The proposed amendment will enable
24 the development of needed housing in the City in a more compact form that minimizes impervious
25 coverage and avoids the excessive disturbance of natural vegetation by facilitating the placement of
26 parking underneath buildings.

27
28 **Amendment #2 (House of Worship from Special Exception use to Permitted Use)**

29 The Conservation Commission has determined the proposed Zoning Amendment has no conservation
30 implications.

31
32 **Amendment #3 (Clarify Maximum Density Requirements in the R-3)**

33 The Conservation Commission has determined the proposed Zoning Amendment has no conservation
34 implications.

35
36 **5. COMMITTEE REPORTS:**

37
38 **A. Conservation Lands Monitors:** Vice Chair Riley gave an update on the fire that took place at
39 Boston Lot in September 2020. She found out that it was a small brush fire. The fire took place on the
40 access road and it might have been caused by a cigarette.

41
42 Vice Chair Riley also talked about a new neighbor that went into the commercial building on East Wilder
43 Road near the Alana Cole Conservation area. It is a Montessori School and they put up a new fence along
44 their portion of the woodlands, from the parking lot to the southern border of the Alana Cole
45 Conservation area on the river side. Ms. Hirai said there was a tree down over the entrance to the trail
46 that may need to be cleaned up this Spring.

Ms. Hirai said that she had read somewhere that there may be some grant money for conservation work along the river. Mr. Goodwin said he knew about that money coming from FEMA and he thought it was to be used for flood plain restoration projects.

Mr. Heistad talked about interest by some people in the City in having a cross country trail within the City. Currently the cross-country ski team travels to Meriden to practice and for meets. He had been approached recently by some people asking that if they paid for a trail to be designed if one could be put in at Goodwin Conservation area, making a loop around Tichner and back down?

***Mr. Heistad MOVED to extend the meeting for 15 minutes.
Seconded by Ms. Riley.***

Roll Call Vote:

**Ernst Oidtmann, Christopher Johnson, Erling Heistad, Sarah Riley, Donald Lacey, Bruce James, Barbara Hirai, and Susan Almy all voting Yea.
None voted Nay.**

**** The Vote on the MOTION passed (8-0).***

Ms. Hirai would like to see the Class VI Roads that have been turned into Class A trails used to make a cross country skiing course.

Mr. Goodwin said that it could be worth looking into. This could be an opportunity to improve some existing trails at Tichner.

B. Lebanon Biodiversity Group: Mr. Lacey reported that the Division of Pesticide Control approved his special permits for Baker Crossing and Mill Road early. He had already been out about 5 times treating since the first of the year.

C. Workshops & Educational Opportunities: Vice Chair Riley told the Commission about a training opportunity through the Harris Center in preparation for the amphibian Big Night. This will be a Zoom meeting on March 18th, 2021 from 7:00PM to 8:30PM.

6. OTHER BUSINESS: Chair Oidtmann asked about the current use financial statements. Mr. Goodwin said he had not received a report which meant to him that nothing had changed in that account. When it did change, he was sure he would be alerted to it by the Finance Department.

Chair Oidtmann spoke about the log bridge building project that is to be done at Boston Lot at the end of May. He said he would order the wood for the bridges. He will need help to get the logs up there and to build the bridges.

7. ADJOURNMENT:

The meeting was adjourned at 8:45 PM.

Respectfully submitted,
Barbara R. Higgins
Recording Secretary

**Agenda
Conservation Commission
February 11, 2021**

**Agenda Item #3A
Permit Review**

**City of Lebanon,
NHDES Wetland Standard
Dredge and Fill Application,
Airport B Lot
CC2021-01
NHDES #2020-00237**

N.H. Department of Environmental Services Wetlands Bureau

STANDARD DREDGE & FILL APPLICATION



General view of typical, created wetland E in old orchard on Airport B Lot

**Lebanon Airport B Lot off Airpark Road
Lebanon, NH**

[Phase II Commercial/Industrial Development]

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603-284-6851

Naomi Johnson, PE
Dufresne Group, Consulting Engineers (DG)
Springfield, VT
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N.H. Department of Environmental Services Wetlands Bureau**STANDARD DREDGE & FILL APPLICATION****Lebanon Airport B Lot, Lebanon NH
[Phase II Commercial/Industrial Development]****CONTENTS**

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1.1 Letter to NHDES re: Lebanon Airport B Lot Standard D&F Application



January 2021

DES Wetlands Bureau
P.O. Box 95 29 Hazen Drive
Concord, NH 03302-0095

RE: Standard Dredge & Fill Wetland Application for Lebanon Airport B Lot 159-4

This letter and documentation transmits a DES Wetlands Bureau Standard Dredge & Fill Application for filling 9133 square feet of forested and ditch wetlands on a 54-acre lot at the end of Airpark Road adjacent to the Lebanon Municipal Airport. This application is being submitted concurrent with an AoT terrain alteration permit and has already been reviewed by Land Resource Management personnel of NHDES, the U.S. Army Corps of Engineers, and the U.S. EPA during a pre-application meeting on November 6, 2020.

The following project description was submitted at that time:

"The City of Lebanon is continuing its phased development of the municipal airport by expanding the commercial/industrial zone into Lot "B," also known as Airport Lot "Phase 1B." This roughly rectangular lot lies along the southwest edge of the north-south runway at the end of Airpark Road. Approximately 12 acres (522,720 s.f.) of this 54-acre lot (Map 159, Lot 4) will be impacted. This development proposes to extend the existing Airpark Road roughly 1500 feet to the south to accommodate five (5) buildings and their associated parking areas and sidewalks. The primary access will follow the Class VI "Hall School Road" along the west side of the lot, and include four driveways (one shared) and a cul-de-sac.

The 12-acre zone that will be cleared and developed is currently forested with a predominance of post-pasture white pine. The lot was actively farmed in the 19th century, when it was plowed, pastured, and finally planted as an orchard. Most recently, the eastern edge of the lot was cleared under FAA guidance to remove trees near the runway. This process included the establishment of a gravel access road near the runway fenceline, which included ditching and regrading of the road edge. It is currently used as emergency runway access and as a walking/bike trail for local Airpark employees.

Scattered wetlands are found on the site, all of which have been either created or altered during the agricultural land use era. Most are shallow seepages or ditches in poorly drained, silt loams. They range in size from .08 to .78 acres with a mean of .42 acres. Most are forested wetlands, although the most recently created wetland, Wetland F, was a result of the ditching and regrading of the eastern side access road. Wetlands were delineated by Dr. Rick Van de Poll, CWS#110 using standard Army Corps of Engineers delineation methodologies (see attached report). Wetlands were evaluated using the 'NH Method,' with a mean score range of .39 for Scenic Quality to 5.04 for Nutrient Transformation. No streams were identified on the site."

The initial site plan and development concept has been modified significantly since the pre-application review in November. At that time, the roadway and building alignment had planned to directly impact 29,119 s.f. of forested wetlands as well as indirectly impact 11,336 s.f. of a

1.1 Letter to NHDES re: Lebanon Airport B Lot Standard D&F Application

wet ditch that dates back to the 19th century. The latter was to be integrated into the stormwater management system, which would outlet to a second, created ditch wetland adjacent to the airport access road. This amount of impact was reduced through further minimization and avoidance by realigning the constructed access road, building footprints, and parking areas, and by uncoupling the old farm ditch from the stormwater treatment system. The new impact total is 9133 s.f., which is associated with the direct impacts to Wetland C and the existing roadside ditch at the end of the current Airpark Road (see site plans in Section 3). Onsite bioretention areas and a stormwater detention pond will be created in upland areas to handle run-off from the site (see Section 3 site plans).

On November 12, 2020, the project was reviewed by the Lebanon Conservation Commission. Several comments were incorporated into the re-design. These included further avoidance and minimization of impacts, increasing the stormwater management capacity to include a 100-year storm event conveyance infrastructure, retaining access for recreational use along the airport fenceline, and reduction in the number of parking spaces. Discussion about mitigation options became moot once the wetland impact footprint shrank below 10,000 s.f. The current plan will appear before the Conservation Commission on January 14, 2021.

On December 16, 2020, the Lebanon City Council approved the budget for the Airport Phase I TIF, which will allow this project to move forward in 2021.

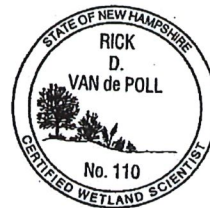
The following application includes the series of required forms (Section 1), the pertinent documents as required by Env-Wt Chapter 300, seven site plan sheets (Section 3, with the remaining site plans submitted as a part of the AoT application), the wetland delineation and assessment report by EMC (Section 4), the authorization letter signed by the City of Lebanon (Section 5), results of the NH Natural Heritage Bureau data search (Section 6), and the results of the NH Division of Historical Resource Request for Project Review (Section 7). The EMC Wildlife Report is being submitted as an attachment to the AoT permit as required under RSA 485-A.

Please contact rickvdp@gmail.com for questions or concerns regarding this application.

Thank you for your consideration.



Rick Van de Poll, Ph.D., CWS #110
Ecosystem Management Consultants



NHDES-W-06-012



**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: City of Lebanon

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

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

SECTION 1 - CONCURRENT PROCESSING OF RELATED SHORELAND/WETLANDS PERMIT APPLICATIONS (Env-Wt 313.05)

If the applicant is not requesting concurrent processing, please proceed to Section 2.

Is the proposed project eligible for the optional concurrent processing of related shoreland/wetlands permit applications (Env-Wt 313.05(d))? If the project is not eligible, proceed to Section 2 (the files will not be processed concurrently). ☐ Yes ☒ No

By signing this form and initialing this section, the applicant is requesting concurrent processing of related shoreland/wetlands permit applications and understands that concurrently filing the applications with a request to process the applications together constitutes:

- A waiver by the applicant of the shorter time frame, if application processing timelines are different for each permit program under the 2 statutes and their implementing rules; and
- An agreement by the applicant that any request for additional information by the department under either or both statutes shall affect the review timeframe of both applications being processed together.

Initials: Initials: **SECTION 2 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05)**

Please use the Wetland Permit Planning Tool (WPPT) or any other database or source to assist in identifying key features such as: priority resource areas (PRA), protected species or habitat, coastal area, or designated river, or designated prime wetlands.

Step 1: A certified wetland scientist must delineate and classify all wetlands and identify the predominant resource functions of each wetland, unless the exceptions listed in Env-Wt 306.05(a)(1) are met (Env-Wt 306.05(a)(1)).

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

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NHDES-W-06-012

Step 2: Determine whether the subject property is or contains a PRA by answering the following questions (Env-Wt 306.05(a)(2)):

1. Does the property contain any documented occurrences of protected species or habitat for such species? Please use the Natural Heritage Bureau (NHB) DataCheck Tool to make this determination. ☐ Yes ☒ No
2. Is the property a bog? Please use the WPPT "Peatland" layer (under the PRA module) for general location of bogs or any other database or source. ☐ Yes ☒ No
3. Is the property a floodplain wetland contiguous to a tier 3 or higher watercourse? Please use the WPPT "Floodplain Wetlands Adjacent to Tier 3 Streams" layer (under PRA module) or any other database or source. ☐ Yes ☒ No
4. Is the property a designated prime wetland or a duly-established 100-foot buffer? Please use the WPPT "Prime Wetlands" layers (under PRA module) or any other database or source. ☐ Yes ☒ No
5. Is the property a sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone? Please use the WPPT "Coastal" layers module and PRA module or any other database or source. ☐ Yes ☒ No

Step 3: For projects that are subject to Env-Wt 600, please attach the Coastal Functional Assessment (Env-Wt 603.04) and Vulnerability Assessment (Env-Wt 603.05) and conduct the data screening required by Env-Wt 603.03.

Step 4: Determine whether the following apply to the subject property (Env-Wt 306.05(a)(4); RSA 482-A:3, I(d)(2)):

1. Is the property within a Local River Management Advisory Committee (LAC) jurisdiction? ☐ Yes ☒ No
 If yes, please provide the following information:
 - The project is within ¼ mile of:
 - A copy of the application was sent to the LAC on Month: Day: Year: .
☐ N/A (Env-Wt 311.01(e))
2. Is the property within or contains any areas that are subject to time of year restrictions under Env-Wt 307? ☐ Yes ☒ No

Step 5: For stream crossing projects: what is the size of the watershed (Env-Wt 306.05(a)(5))?

☒ N/A

Step 6: For dredge projects: is the subject property contaminated (Env-Wt 306.05(a)(6))? ☐ Yes ☐ No

☒ N/A

Step 7: Does the project have the potential to impact any of the following (Env-Wt 306.05(a)(7)):

☐ N/A

1. Impaired waters? ☐ Yes ☒ No
2. Class A waters? ☐ Yes ☒ No
3. Outstanding resource waters? ☐ Yes ☒ No

SECTION 3 - PROJECT DESCRIPTION (Env-Wt 311.04(ii))

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" in the space provided below.

The current plan proposes to construct and continue the light industrial development of the City of Lebanon's land in and adjacent to the City's municipal airport. Approximately 21.5 acres of a 54-acre lot will be developed as a result of this project. Five commercial buildings along with a paved access road, driveways, sidewalks, and other appurtenances are proposed for the northwestern part of the lot away from the airport runway and adjacent clearing.

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SECTION 4 - PROJECT LOCATION

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

ADDRESS: Off Airpark Drive

TOWN/CITY: Lebanon

TAX MAP/BLOCK/LOT/UNIT: Lot 159-4

UNITED STATES GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME:

☒ N/A

LATITUDE (D.ddddd): 43.617203° North (Optional)

LONGITUDE (D.ddddd): -72.307335° West (Optional)

SECTION 5 - APPLICANT (DESIRED PERMIT HOLDER) INFORMATION (Env-Wt 311.04(a))

If the applicant is a trust or a company, then the name of the trust or company should be written as the applicant's name.

NAME: City of Lebanon

MAILING ADDRESS: 51 N. Park St.

TOWN/CITY: Lebanon

STATE: NH

ZIP CODE: 03766

EMAIL ADDRESS: david.brooks@lebanonnh.gov

FAX:

PHONE: 448-1457

ELECTRONIC COMMUNICATION: By initialing here: DB, I hereby authorize NHDES to communicate all matters relative to this application electronically.**SECTION 6 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c))**☐ N/A

LAST NAME, FIRST NAME, M.I.: Van de Poll, Rick

COMPANY NAME: Ecosystem Management Consultants

MAILING ADDRESS: 30 N. Sandwich Rd

TOWN/CITY: Center Sandwich

STATE: NH

ZIP CODE: 03227

EMAIL ADDRESS: rickvdp@gmail.com

FAX:

PHONE: 677-2473

ELECTRONIC COMMUNICATION: By initialing here RVP, I hereby authorize NHDES to communicate all matters relative to this application electronically.**SECTION 7 - PROPERTY OWNER INFORMATION (IF DIFFERENT THAN APPLICANT) (Env-Wt 311.04(b))**

If the owner is a trust or a company, then the name of the trust or company should be written as the owner's name.

☒ 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.irm@des.nh.gov or (603) 271-2147

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SECTION 8 - 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 (please attach information about stream crossings, coastal resources, prime wetlands, or non-tidal wetlands and surface waters).

There are no PRAs on the site

There are no stream crossings

There are no vernal pools on the lot being developed

PTEs or SPNs do not apply

There are no shorelands, dockin structures, or access ways involved

There is no bank stabilization or shoreland impacts involved

There are no agricultural, forestry, or dredging activities

The project avoids and minimizes impacst to wetlands as specified below

The project complies with all requirements under Env-Wt 524.04

There are no restoration/enhancement activities associated with the project

The project does not involve any dam construction or removal

The project will comply with the construction notification requirement under Env-Wt 525.05

SECTION 9 - AVOIDANCE AND MINIMIZATION

Impacts within wetland jurisdiction must be avoided to the maximum extent practicable (Env-Wt 313.03(a)). If all impacts cannot be avoided, a functional assessment is required for minor and major projects (Env-Wt 311.03(b)(10)). Any project with unavoidable jurisdictional impacts must then be minimized as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#). Please refer to the application checklist to ensure that you have attached all documents related to avoidance and minimization, as well as functional assessment (where applicable).

SECTION 10 - 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: 11 Day: 06 Year: 2020

☒ N/A - Mitigation is not required

SECTION 11 - THE PROJECT MEETS COMPENSATORY MITIGATION REQUIREMENTS (Env-Wt 313.01(a)(1)c).

Have you submitted a compensatory mitigation proposal that meets the requirements of Env-Wt 800 for all permanent impacts that will remain after avoidance and minimization demonstration?

☐ Yes ☐ No

☒ N/A - Mitigation is not required

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NHDES-W-06-012

SECTION 12 - 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 required permitting).

For intermittent streams, the linear footage of impact is measured along the thread of the channel.

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 SF / LF		TEMPORARY SF / LF	
Forested Wetland	8642	☐ ATF		☐ ATF
Scrub-shrub Wetland		☐ ATF		☐ ATF
Emergent Wetland	491	☐ ATF		☐ ATF
Wet Meadow		☐ ATF		☐ ATF
Intermittent Stream	/	☐ ATF	/	☐ ATF
Perennial Stream or River	/	☐ ATF	/	☐ ATF
Lake / Pond	/	☐ ATF	/	☐ ATF
Bank - Intermittent Stream	/	☐ ATF	/	☐ ATF
Bank - Perennial Stream / River	/	☐ ATF	/	☐ ATF
Bank/shoreline - Lake / Pond	/	☐ ATF	/	☐ ATF
Tidal Waters	/	☐ ATF	/	☐ ATF
Tidal Marsh		☐ ATF		☐ ATF
Sand Dune		☐ ATF		☐ ATF
Designated Prime Wetland		☐ ATF		☐ ATF
Duly-established 100-foot Prime Wetland Buffer		☐ ATF		☐ ATF
Undeveloped Tidal Buffer Zone (TBZ)		☐ ATF		☐ ATF
Previously-developed TBZ		☐ ATF		☐ ATF
Docking - Lake / Pond		☐ ATF		☐ ATF
Docking - River		☐ ATF		☐ ATF
Docking - Tidal Water		☐ ATF		☐ ATF
Vernal Pool		☐ ATF		☐ ATF
TOTAL	9133 /		/	

SECTION 13 - 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):	9133 SF	×	\$0.40 =	\$ 3653.20
Seasonal docking structure:	SF	×	\$2.00 =	\$
Permanent docking structure:	SF	×	\$4.00 =	\$
Projects proposing shoreline structures (including docks) add \$400 = \$				
Total =				\$ 3653.20
The application fee for minor or major impact is the above calculated total or \$400, whichever is greater =				\$ 3653.20

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SECTION 14 - PROJECT CLASSIFICATION (Env-Wt 306.05)			
Indicate the project classification.			
☐ Minimum Impact Project	☒ Minor Project	☐ Major Project	
SECTION 15 - ALL APPLICABLE CONDITIONS IN Env-Wt 307 HAVE BEEN MET (Env-Wt 311.04(j); Env-Wt 313.01(a)(2)).			
Check all conditions applicable to your project below. Please ensure that your plan design and access, construction sequence, and timing appropriately meet applicable conditions below:			
☒ Env-Wt 307.02	US Army Corps of Engineers (USACE) Conditions	☒ Env-Wt 307.11	Filling Activity Conditions
☒ Env-Wt 307.03	Protection of Water Quality Required	☐ Env-Wt 307.12	Restoring Temporary Impacts: Site Stabilization
☐ Env-Wt 307.04	Protection of Fisheries and Breeding Areas Required	☐ Env-Wt 307.13	Property Line Setbacks
☒ Env-Wt 307.05	Protection Against Invasive Species Required	☐ Env-Wt 307.14	Rock Removal
☐ Env-Wt 307.06	Protection of Rare, Threatened or Endangered Species and Critical Habitat	☒ Env-Wt 307.15	Use of Heavy Equipment in Wetlands
☐ Env-Wt 307.07	Consistency Required with Shoreland Water Quality Protection Act	☒ Env-Wt 307.16	Adherence to Approved Plans Required
☐ Env-Wt 307.08	Protection of Designated Prime Wetlands and Duly-Established 100-Foot Buffers	☐ Env-Wt 307.17	Unpermitted Activities
☐ Env-Wt 307.09	Shoreline Structures	☒ Env-Wt 307.18	Reports
☐ Env-Wt 307.10	Dredging Activity Conditions		
Provide an explanation as to methods, timing, and manner as to how your project will meet standard permit conditions required in Env-Wt 307 (Env-Wt 311.03(b)(7)): Construction will adhere to the terms and conditions specified in the Erosion Control Plan (Sheet C-2, as attached), which address each of the above-cited conditions for standard permits.			

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SECTION 16 - REQUIRED CERTIFICATIONS (Env-Wt 311.11)		
Initial each box below to certify:		
Initials: RVP	To the best of the signer's knowledge and belief, all required notifications have been provided.	
Initials: RVP	The information submitted on or with the application is true, complete, and not misleading to the best of the signer's knowledge and belief.	
Initials: RVP	The signer understands that: - The submission of false, incomplete, or misleading information constitutes grounds for NHDES to: - Deny the application. - Revoke any approval that is granted based on the information. And - If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1. - The signer is subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641. - The signature shall constitute authorization for the municipal conservation commission and the Department to inspect the site of the proposed project, except for minimum impact trail projects, where the signature shall authorize only the Department to inspect the site pursuant to RSA 482-A:6, II.	
Initials: RVP	If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing.	
SECTION 17 - REQUIRED SIGNATURE (Env-Wt 311.04(d); Env-Wt 311.11)		
SIGNATURE (OWNER): <i>Shawn Mulholland</i>	PRINT NAME LEGIBLY: Shaun Mulholland, City Manager	DATE: 1/21/2021
SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER): <i>David R. Brooks</i>	PRINT NAME LEGIBLY: David Brooks, Director of Planning & Zoning	DATE: 1/15/2021
SIGNATURE (AGENT, IF APPLICABLE): <i>Rick Van de Poll</i>	PRINT NAME LEGIBLY: Rick Van de Poll	DATE: 1/20/2021
SECTION 18 - TOWN / CITY CLERK SIGNATURE (Env-Wt 311.04(f))		
As required by RSA 482-A:3, I(a),(1), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.		
TOWN/CITY CLERK SIGNATURE: <i>Kristin Kenniston</i>	PRINT NAME LEGIBLY: Kristin Kenniston	DATE: 1/21/2021
TOWN/CITY: City of Lebanon		

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. And
4. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

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

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APPLICATION CHECKLIST

(Items identified with an asterisk (*) are required only for Minor and Major Projects)

- ☒ The completed, dated, signed and certified application (Env-Wt 311.03(b)(1)).
- ☒ Correct fee as determined in RSA 482-A:3, I(b) or (c), subject to any cap established by RSA 482-A:3, X (Env-Wt 311.03(b)(2)).
- ☒ USACE "Appendix B, New Hampshire General Permits (GPs), Required Information and Corps Secondary Impacts Checklist" and its required attachments (Env-Wt 307.02).
- ☒ The results of actions required by Env-Wt 311.01 as part of an application preparation for a standard permit (Env-Wt 311.03(b)(3)).
- ☒ Project plans described in Env-Wt 311.05 (Env-Wt 311.03(b)(4)).
- ☒ Maps, or electronic shape files and meta data, and other attachments specified in Env-Wt 311.06 (Env-Wt 311.03(b)(5)).
- ☒ Explanation as to methods, timing, and manner as to how the project will meet standard permit conditions required in Env-Wt 307 (Env-Wt 311.03(b)(7)).
- ☐ If applicable, the information regarding proposed compensatory mitigation specified in Env-Wt 311.08 and Chapter Env-Wt 800 – Mitigation Worksheet, unless not required under Env-Wt 313.04 (Env-Wt 311.03(b)(8); Env-Wt 311.08; Env-Wt 313.04).
- ☒ Any additional information specific to the type of resource as specified in Env-Wt 311.09 (Env-Wt 311.03(b)(9); Env-Wt 311.04(j)).
- ☒ Project specific information required by Env-Wt 500, Env-Wt 600, and Env-Wt 900 (Env-Wt 311.03(b)(11)).
- ☒ A list containing the name, mailing address and tax map/lot number of each abutter to the subject property (Env-Wt 311.03(b)(12)).
- ☒ Copies of certified postal receipts or other proof of receipt of the notices that are required by RSA 482-A:3, I(d) (Env-Wt 311.03(b)(13)).
- ☒ Project design considerations required by Env-Wt 313 (Env-Wt 311.04(j)).
- ☒ Town tax map showing the subject property, the location of the project on the property, and the location of properties of abutters with each lot labeled with the name and mailing address of the abutter (Env-Wt 311.06(a)).
- ☒ Dated and labeled color photographs that:
 - (1) Clearly depict:
 - a. All jurisdictional areas, including but not limited to portions of wetland, shoreline, or surface water where impacts have or are proposed to occur. And
 - b. All existing shoreline structures. And
 - (2) Are mounted or printed no more than 2 per sheet on 8.5 x 11 inch sheets (Env-Wt 311.06(b)).
- ☒ A copy of the appropriate USGS map or updated data based on LiDAR at a scale of one inch equals 24,000 feet showing the location of the subject property and proposed project (Env-Wt 311.06(c)).
- ☒ A narrative that describes the work sequence, including pre-construction through post-construction, and the relative timing and progression of all work (Env-Wt 311.06(d)).
- ☐ For all coastal projects, include a copy of the recorded deed with book and page numbers for the property (Env-Wt 311.06(e)).

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- ☐ If the applicant is not the owner in fee of the subject property, documentation of the applicant's legal interest in the subject property, provided that for utility projects in a utility corridor, such documentation may comprise a list that:
- (1) Identifies the county registry of deeds and book and page numbers of all of the easements or other recorded instruments that provide the necessary legal interest. And
 - (2) Has been certified as complete and accurate by a knowledgeable representative of the applicant (Env-Wt 311.06(f)).
- ☒ The NHB memo containing the NHB identification number and results and recommendations from NHB as well as any written follow-up communications such as additional memos or email communications with either NHB or New Hampshire Fish and Game Department (NHF&G) (Env-Wt 311.06(g)).
- ☒ A statement of whether the applicant has received comments from the local conservation commission and, if so, how the applicant has addressed the comments (Env-Wt 311.06(h)).
- ☐ For projects in LAC jurisdiction, a statement of whether the applicant has received comments from the LAC and, if so, how the applicant has addressed the comments (Env-Wt 311.06(i)).
- ☒ If the applicant is also seeking to be covered by the state general permits, a statement of whether comments have been received from any federal agency and, if so, how the applicant has addressed the comments (Env-Wt 311.06(j)).
- ☐ For after-the-fact applications: information required by Env-Wt 311.12 (Env-Wt 311.12).
- ☐ [Coastal Resource Worksheet](#) for coastal projects as required under Env-Wt 600.
- ☐ Prime Wetlands information required under Env-Wt 700.
- ☐ [Stream Crossing Worksheet](#) required by Env-Wt 900.
- ☒ [Avoidance and Minimization Written Narrative](#), [Avoidance and Minimization Checklist](#), or your own avoidance and minimization narrative (Env-Wt 311.07).
- ☒ * [Attachment A: Minor and Major Projects](#) (Env-Wt 311.10).
- ☒ * [Functional Assessment](#) (Env-Wt 311.10).

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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: City of Lebanon

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.

CREATED WETLANDS SURROUND THE ENTIRE 20-ACRE DEVELOPMENT PORTION OF THE 48-ACRE SITE. THE SINGLE CROSSING LOCATION IS THE MOST DIRECT AND LEAST IMPACTIVE CROSSING OF A SINGLE WETLAND (WETLAND C). CROSSING IN ANY OTHER LOCATION FROM CITY PROPERTY WOULD RESULT IN A LARGE INCREASE IN WETLAND IMPACTS.

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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.

There are no marshes on the property.

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

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

There are no streams on the site. The one wetland that will be crossed will still retain its downslope discharge into an existing ditch that will be culverted under Airpark Road.

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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.

There are no exemplary natural communities, vernal pools, protected species, riparian habitats or other habitats of concern on the site. The single wetland crossing location involves a forested, groundwater discharge wetland that was created by past logging activities.

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 extends Airpark Road by 1500 feet and will avoid the existing Class VI Hall Schoolhouse Road, which is mostly wet due to past agricultural uses. The active access road to the east (by the airport fence) will be retained as a recreational trail.

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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.

There are no floodplains on the project site. Any increase to stormwater run-off will be handled by bio-retention areas and a detention basin.

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.

There are no marsh complexes on the project site.

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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 stratified drift aquifers within 1/4 mile of the site.

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.

There are no streams on the site.

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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.

There are no surface waters on the site other than constructed run-off ditches. These will be unaffected other than the single ditch crossing by the extension of Airpark Road. The latter will be culverted.

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.

The project site does not involve any shorefront.

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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.

There are no shoreline structures proposed.

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.

There are no shoreline structures proposed.

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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.

There are no shoreline structures proposed.

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.

There are no shoreline structures proposed.

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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:	Method for Inventorying and Evaluating Freshwater Wetlands in New Hampshire (aka 'The NH Method')
NAME OF CERTIFIED WETLAND SCIENTIST (FOR NON-TIDAL PROJECTS) OR QUALIFIED COASTAL PROFESSIONAL (FOR TIDAL PROJECTS) WHO COMPLETED THE ASSESSMENT: R. VAN DE POLL	
DATE OF ASSESSMENT: 09/16/2019	
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.	

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**US Army Corps
of Engineers®**
New England District

**New Hampshire Programmatic General Permit (PGP)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)**

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

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*		x
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?		x
2.2 Are there proposed impacts to SAS, shellfish beds, special wetlands and vernal pools (see PGP, GC 26 and Appendix A)? Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) website, www.nhnaturalheritage.org , specifically the book Natural Community Systems of New Hampshire .		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 size of the existing impervious surface area?	48,290 s.f.	
2.7 What is the size of the proposed impervious surface area?	220,850 s.f.	
2.8 What is the % of the impervious area (new and existing) to the overall project site?	11.4%	
3. Wildlife	Yes	No
3.1 Has the NHB 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 a NHB determination.)		x
3.2 Would work occur in any area identified as either “Highest Ranked Habitat in N.H.” or “Highest Ranked Habitat in Ecological Region”? (These areas are colored magenta and green, respectively, on NH Fish and Game’s map, “2010 Highest Ranked Wildlife Habitat by Ecological Condition.”) Map information can be found at: • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.		x

3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		x
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?	x	
3.5 Are stream crossings designed in accordance with the PGP, GC 21?	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?		N/A
5. Historic/Archaeological Resources		
For a minor or major impact project - a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) shall be sent to the NH Division of Historical Resources as required on Page 5 of the PGP**	x	

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

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

NHDES-W-06-050



AVOIDANCE AND MINIMIZATION CHECKLIST

Water Division/Land Resources Management Wetlands Bureau

[Check the Status of your Application](#)



RSA/Rule: RSA 482-A/ Env-Wt 311.07(c)

This checklist can be used in lieu of the written narrative required by Env-Wt 311.07(a) to demonstrate compliance with requirements for Avoidance and Minimization (A/M), pursuant to RSA 482-A:1 and Env-Wt 311.07(c).

For the construction or modification of non-tidal shoreline structures over areas of surface waters without wetland vegetation, complete only Sections 1, 2, and 4 (or the applicable sections in [Attachment A: Minor and Major Projects \(NHDES-W-06-013\)](#)).

The following definitions and abbreviations apply to this worksheet:

- “A/M BMPs” stands for [Wetlands Best Management Practice Techniques for Avoidance and Minimization](#) dated 2019, published by the New England Interstate Water Pollution Control Commission (Env-Wt 102.18).
- “Practicable” means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes (Env-Wt 103.62).

SECTION 1 - CONTACT/LOCATION INFORMATION

APPLICANT LAST NAME, FIRST NAME, M.I.: City of Lebanon

PROJECT STREET ADDRESS: Off Airpark Drive

PROJECT TOWN: Lebanon

TAX MAP/LOT NUMBER: 159-4

SECTION 2 - PRIMARY PURPOSE OF THE PROJECT

Env-Wt 311.07(b)(1)	Indicate whether the primary purpose of the project is to construct a water-access structure or requires access through wetlands to reach a buildable lot or the buildable portion thereof.	☒ Yes ☐ No
---------------------	---	---

If you answered “no” to this question, describe the purpose of the “non-access” project type you have proposed:



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SECTION 3 - A/M PROJECT DESIGN TECHNIQUES		
Check the appropriate boxes below in order to demonstrate that these items have been considered in the planning of the project. Use N/A (not applicable) for each technique that is not applicable to your project.		
Env-Wt 311.07(b)(2)	For any project that proposes new permanent impacts of more than one acre or that proposes new permanent impacts to a Priority Resource Area (PRA), or both, whether any other properties reasonably available to the applicant, whether already owned or controlled by the applicant or not, 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.	☐ Check ☒ N/A
Env-Wt 311.07(b)(3)	Whether alternative designs or techniques, such as different layouts, construction sequencing, or alternative technologies could be used to avoid impacts to jurisdictional areas or their functions and values.	☒ Check ☐ N/A
Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(1) Env-Wt 311.10(c)(2)	The results of the functional assessment required by Env-Wt 311.03(b)(10) were used to select the location and design for the proposed project that has the least impact to wetland functions.	☒ Check ☐ N/A
Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(3)	Where impacts to wetland functions are unavoidable, the proposed impacts are limited to the wetlands with the least valuable functions on the site while avoiding and minimizing impacts to the wetlands with the highest and most valuable functions.	☒ Check ☐ N/A
Env-Wt 313.01(c)(1) Env-Wt 313.01(c)(2) Env-Wt 313.03(b)(1)	No practicable alternative would reduce adverse impact on the area and environments under the department's jurisdiction and the project will not cause random or unnecessary destruction of wetlands.	☒ Check ☐ N/A
Env-Wt 313.01(c)(3)	The project would not cause or contribute to the significant degradation of waters of the state or the loss of any PRAs.	☒ Check ☐ N/A
Env-Wt 313.03(b)(3) Env-Wt 904.07(c)(8)	The project maintains hydrologic connectivity between adjacent wetlands or stream systems.	☒ Check ☐ N/A
Env-Wt 311.10 A/M BMPs	Buildings and/or access are positioned away from high function wetlands or surface waters to avoid impact.	☒ Check ☐ N/A
Env-Wt 311.10 A/M BMPs	The project clusters structures to avoid wetland impacts.	☐ Check ☒ N/A
Env-Wt 311.10 A/M BMPs	The placement of roads and utility corridors avoids wetlands and their associated streams.	☒ Check ☐ N/A
A/M BMPs	The width of access roads or driveways is reduced to avoid and minimize impacts. Pullouts are incorporated in the design as needed.	☒ Check ☐ N/A
A/M BMPs	The project proposes bridges or spans instead of roads/driveways/trails with culverts.	☐ Check ☒ N/A

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NHDES-W-06-050

A/M BMPs	The project is designed to minimize the number and size of crossings, and crossings cross wetlands and/or streams at the narrowest point.	☒ Check ☐ N/A
Env-Wt 500 Env-Wt 600 Env-Wt 900	Wetland and stream crossings include features that accommodate aquatic organism and wildlife passage.	☐ Check ☒ N/A
Env-Wt 900	Stream crossings are sized to address hydraulic capacity and geomorphic compatibility.	☐ Check ☒ N/A
A/M BMPs	Disturbed areas are used for crossings wherever practicable, including existing roadways, paths, or trails upgraded with new culverts or bridges.	☒ Check ☐ N/A
SECTION 4 - NON-TIDAL SHORELINE STRUCTURES		
Env-Wt 313.03(c)(1)	The non-tidal shoreline structure has been designed to use the minimum construction surface area over surfaces waters necessary to meet the stated purpose of the structure.	☐ Check ☒ N/A
Env-Wt 313.03(c)(2)	The type of construction proposed for the non-tidal shoreline structure is the least intrusive upon the public trust that will ensure safe navigation and docking on the frontage.	☐ Check ☒ N/A
Env-Wt 313.03(c)(3)	The non-tidal shoreline structure has been designed to avoid and minimize impacts on the ability of abutting owners to use and enjoy their properties.	☐ Check ☒ N/A
Env-Wt 313.03(c)(4)	The non-tidal shoreline structure has been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation.	☐ Check ☒ N/A
Env-Wt 313.03(c)(5)	The non-tidal shoreline structure has been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat.	☐ Check ☒ N/A
Env-Wt 313.03(c)(6)	The non-tidal shoreline structure has 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.	☐ Check ☒ N/A

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NHDES-W-06-089



**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: City of Lebanon

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?

Yes, the entire wetland impact requires fill to allow access to the buildable portion of the lot.

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.*

N/A

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NHDES-W-06-089

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](#)?

An alternative design has been employed to minimize wetland impacts. The wetland crossing is located at the narrowest portion of a previously created wetland. This forested/scrub-shrub swamp was created when skidder activity associated with prior logging broke through the groundwater table. As shown in Plan C-1, the roadway alignment has been moved from the proposed location that was presented during the pre-application review to avoid using the old Class VI road, which is now mostly wet. The proposed buildings have also been moved to avoid Wetland D and Wetland E entirely, whereas they were going to be impacted by parking lots and driveways for the proposed buildings. Steeper banks are also proposed for one section of the access drive in order to avoid wetland impacts at the toe of the roadbank slope.

In sum, the created, low quality wetlands on the site have been avoided to the maximum extent possible in order to accommodate the City's plan for an expanded commercial development next to the airport.

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.*

Wetland C (PFO1/SS1E) and the small section of Wetland F (the ditch) are both very low functioning wetlands as shown in the attached NH Method evaluation. Based on a 10 point scale, the highest value for both is 4.9 and 4.2 respectively for Nutrient Transformation, whereas their Ecological Integrity values are 1.0 and 0, respectively.

NHDES-W-06-067



RESIDENTIAL, COMMERCIAL, AND
INDUSTRIAL DEVELOPMENT
PROJECT-SPECIFIC WORKSHEET
FOR STANDARD APPLICATION
Water Division/Land Resources Management
Wetlands Bureau
[Check the Status of your Application](#)



RSA/Rule: RSA 482/ Env-Wt 524

APPLICANT LAST NAME, FIRST NAME, M.I.: City of Lebanon

This worksheet summarizes the criteria and requirements for a Standard Permit for "Residential, Commercial, and Industrial Development", one of the 18 specific project types in Chapter Env-Wt 500. In addition to the project-specific criteria and requirements on this worksheet, all Standard Dredge and Fill Applications must meet the criteria and requirements listed in the Standard Dredge and Fill Application form (NHDES-W-06-012).

SECTION 1 - APPLICABILITY (Env-Wt 509.02(b); Env-Wt 524.01)

The information in this worksheet applies to residential, commercial, and industrial development projects, including associated roadways, in non-tidal wetlands.

Do **not** use this worksheet if the project is located in a coastal (tidal) area.

SECTION 2 - APPROVAL CRITERIA FOR RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT PROJECTS (Env-Wt 524.02)

An application for a residential, commercial or industrial development project must meet the following criteria:

- ☒ The project must meet the applicable criteria established in Env-Wt 300;
- ☐ An off-site alternatives analysis is conducted for any project that will result in more than one acre of permanent wetland impacts;
- ☒ The project avoids and minimizes impacts to wetlands, watercourses, and sensitive and valuable wetlands in accordance with Env-Wt 313.03;
- ☒ The project complies with the design criteria specified in Env-Wt 524.04 and the construction criteria specified in Env-Wt 524.05; and
- ☒ Compensatory mitigation is provided for any new residential, commercial, or industrial development in a Priority Resource Area.

SECTION 3 - APPLICATION REQUIREMENTS FOR RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT PROJECTS (Env-Wt 524.03)

- ☐ For all projects requiring subdivision approval, a plan prepared and stamped by a land surveyor licensed in the State of New Hampshire pursuant to RSA 310-A showing existing and proposed topography and the location of all proposed lot lines;
- ☐ For all projects requiring subdivision approval, the following clearly delineated on the plan required above: the boundaries of all wetlands and surface waters and the footprint of all proposed impacts;

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NHDES-W-06-067

- ☐ For minor and major projects requiring subdivision approval, wetlands classifications clearly indicated in accordance with Env-Wt 400 on the plan required above; and
- ☐ For a project that is associated with one or more phases of a multi-phase subdivision, a project impact plan that also shows all wetlands on remaining property proposed for future phases of development.

Please note that permits for subdivisions of 4 or more lots shall not be effective until the permittee records the permit with the appropriate registry of deeds and a copy of the registered permit has been received by the department.

An application for a residential, commercial or industrial development project must include the following information:

- ☐ If the project includes components that are subject to multiple project-specific requirements in Chapter Env-Wt 500, a narrative statement and plan that describes how each project-specific component meets the requirements of the applicable part in Chapter Env-Wt 500 and how the project as a whole impacts jurisdictional areas.

SECTION 4 - DESIGN REQUIREMENTS FOR RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT PROJECTS (Env-Wt 524.04)

In addition to meeting the applicable design requirements established in Env-Wt 300, a residential, commercial, or industrial development project must be designed to meet the following criteria:

- ☒ The project complies with all applicable requirements of Env-Wt 400, Env-Wt 700, Env-Wt 800, Env-Wt 900, and other applicable project-specific criteria in Chapter Env-Wt 500;
- ☒ The project does not use wetlands or surface waters to serve as stormwater or water quality treatment to mitigate impacts;
- ☒ The project provides setbacks and water quality protection measures sufficient to protect private and public drinking water supplies, source water protection areas, and fisheries;
- ☒ The project maintains or restores hydrologic connections to maintain flows necessary to preserve adjacent wetland and riparian functions;
- ☐ The project maintains existing fishery spawning, feeding, or cover habitat and fish passage necessary to maintain fishery or habitat or populations; and
- ☒ The project maintains existing wetland-dependent wildlife habitat and its associated migratory pathways, reproductive sites, and associated wetland complex or wetland community system.

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SECTION 5 - CONSTRUCTION REQUIREMENTS FOR RESIDENTIAL, COMMERCIAL, AND INDUSTRIAL DEVELOPMENT PROJECTS (Env-Wt 525.05)

In addition to meeting all applicable construction standards specified in Env-Wt 307 and other applicable project-specific standards in Chapter Env-Wt 500, the following requirements apply to residential, commercial, or industrial development projects:

- ☒ A construction notice shall be filed with the department at least 48 hours prior to commencing work; and
- ☒ All work shall be conducted in accordance with the approved plan.

SECTION 6 - CLASSIFICATION OF RESIDENTIAL AND COMMERCIAL OR INDUSTRIAL DEVELOPMENT PROJECTS (Env-Wt 524.06)

Residential and commercial or industrial development projects shall be classified under Env-Wt 407 and as follows:

(a) A project shall be a minimum impact project only if:

- (1) All stream-crossing components of the project meet the requirements for minimum impact classification specified in Env-Wt 903;
- (2) All other components of the project meet the requirements for minimum impact classification specified in Env-Wt 407 and this chapter;
- (3) The project is not part of a new subdivision of 4 or more lots; and
- (4) The project does not meet the criteria listed in (d) below.

(b) A project shall be an expedited minimum impact project only if:

- (1) It is a minimum impact project to construct a new subdivision of 3 lots or less;
- (2) The applicant has attended a pre-design submission meeting with the department at least 7 days prior to application submission and included department feedback in the design plan; and
- (3) The project does not meet the criteria listed in (d) below.

(c) A project shall be a minor impact project if the project does not meet the criteria listed in (d) below and if any of the following apply:

- (1) Any single stream-crossing component of the project meets the requirements for minor impact classification specified in Env-Wt 903;
- (2) The project is part of a new subdivision of 4 or more lots;
- (3) Any single component of the project meets the requirements for minor impact classification specified in Env-Wt 407, Env-Wt 903, or Chapter Env-Wt 500; or
- (4) No component of the project meets the requirements for major impact classification specified in Env-Wt 407, Env-Wt 903, or Chapter Env-Wt 500.

(d) A project shall be a major impact project if:

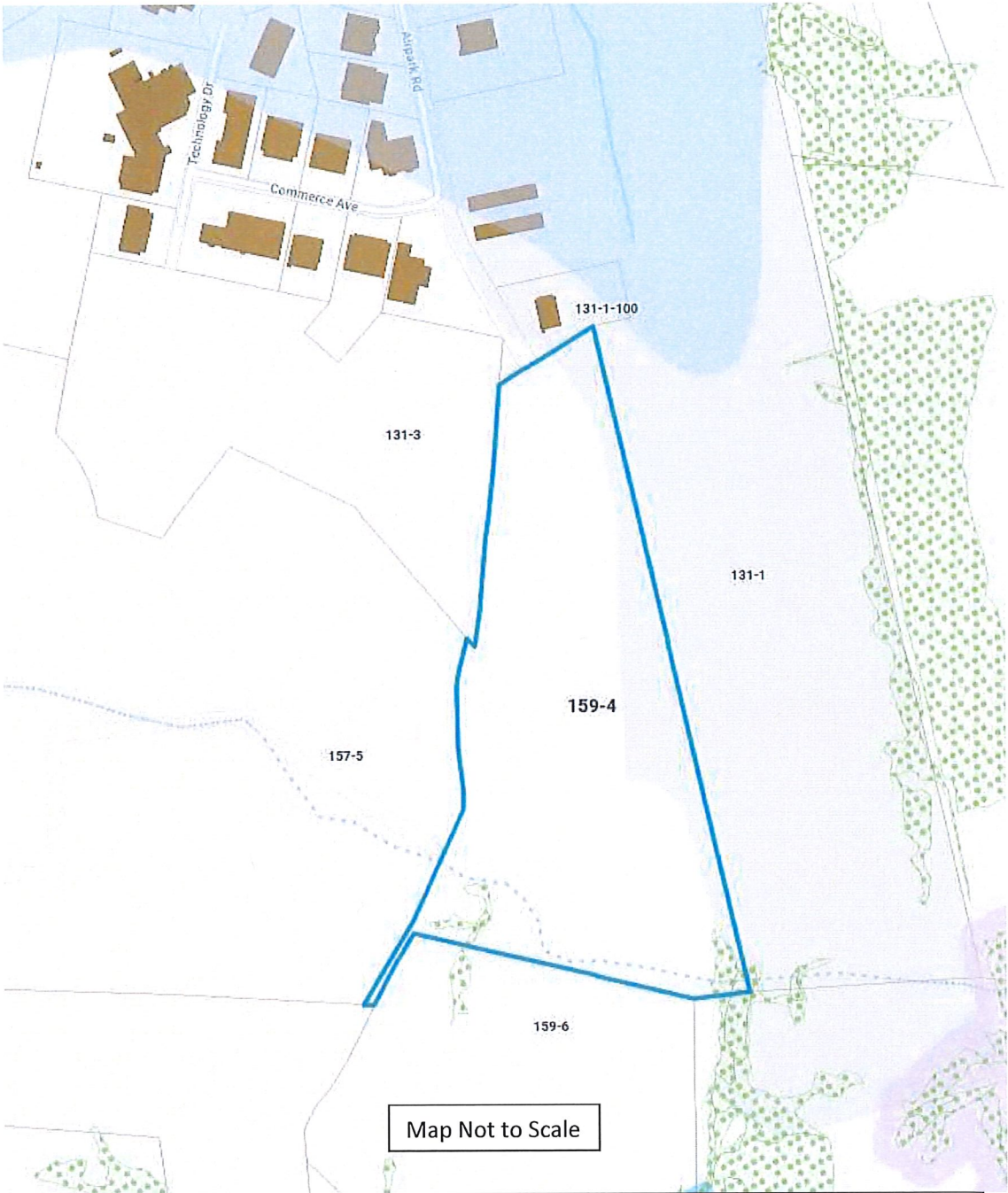
- (1) The project exceeds the minor impact criteria;
- (2) The project requires mitigation or meets the requirements for major impact classification specified in Env-Wt 407, Env-Wt 903, or any other associated project classification that is part of the overall project; or
- (3) The project is elevated based on an aggregation undertaken by a developer or is part of a series of developments under Env-Wt 400.

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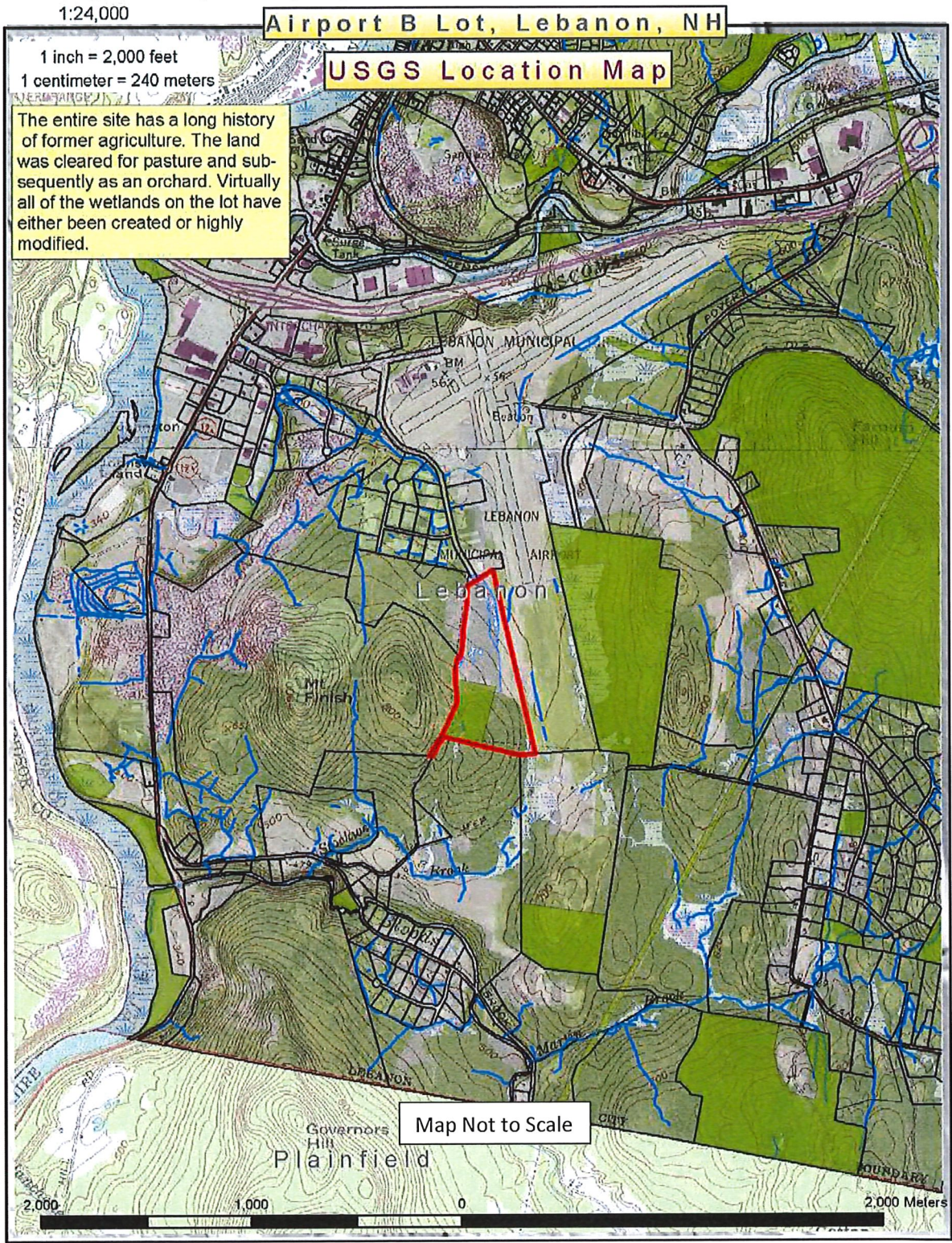
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2.1 Municipal Tax Map showing property location



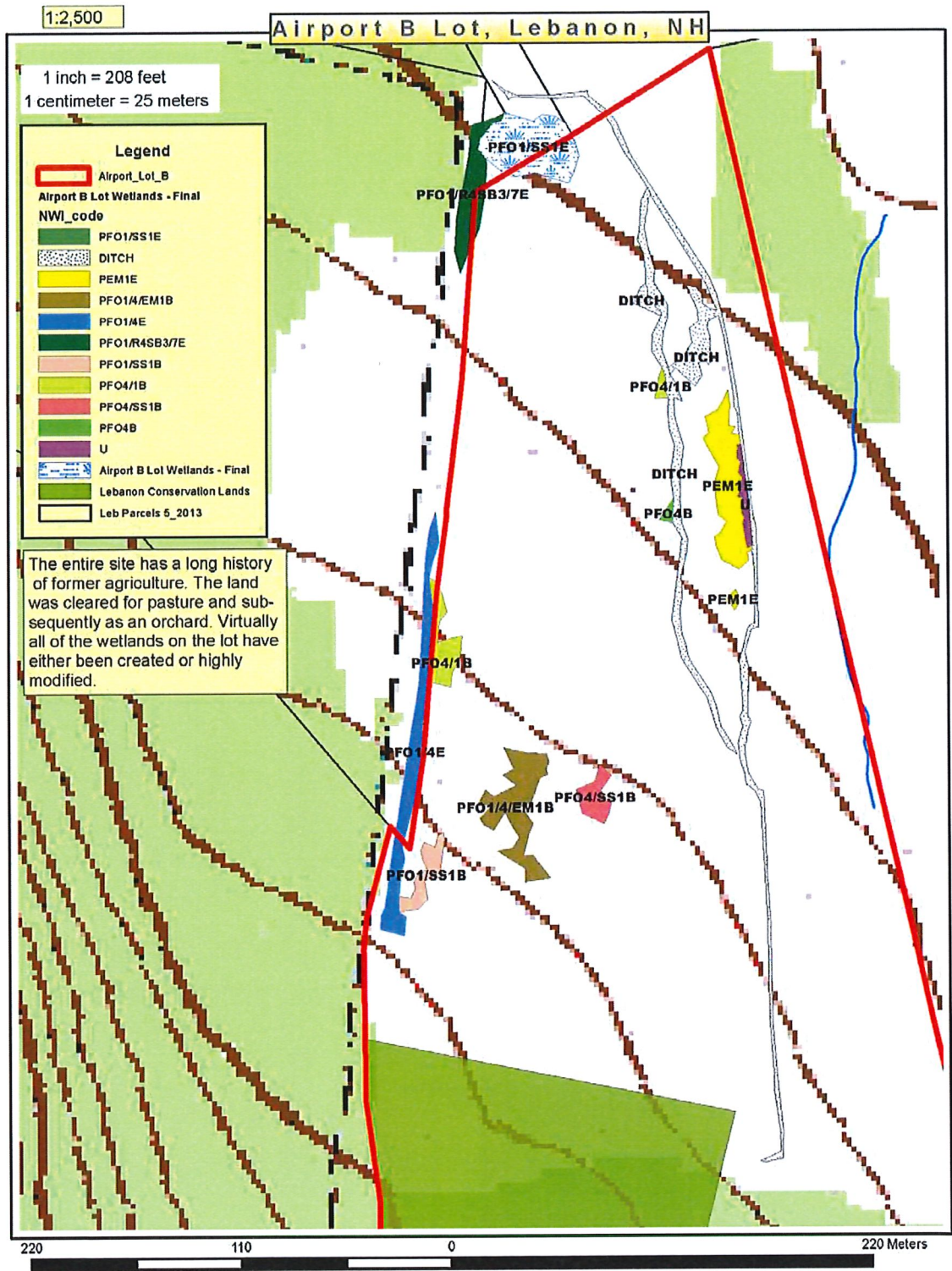
PROJECT	Map Type	Date: January 2021	Prepared By:
Lebanon Airport B Lot Development	Site Loc Tax Map	 File #: 21.01.01VAN	Ecosystem Management Consultants 30 North Sandwich Rd. Center Sandwich, NH 03227 rickvdp@gmail.com

2.5.1 USGS Topographic Map showing Project Location



PROJECT	Map Type	Date: January 2021	Prepared By:
Lebanon Airport B Lot Development	Site Loc Topographic	 File #: 20.07.01VAN	Ecosystem Management Consultants 30 North Sandwich Rd. Center Sandwich, NH 03227 rickvdp@gmail.com

2.5.2 USGS Topographic Map showing NWI Cover Types



PROJECT	Map Type	Date: January 2021	Prepared By:
Lebanon Airport B Lot Development	Site Loc Topographic	 File #: 20.07.01VAN	Ecosystem Management Consultants 30 North Sandwich Rd. Center Sandwich, NH 03227 rickvdp@gmail.com

1:3,000

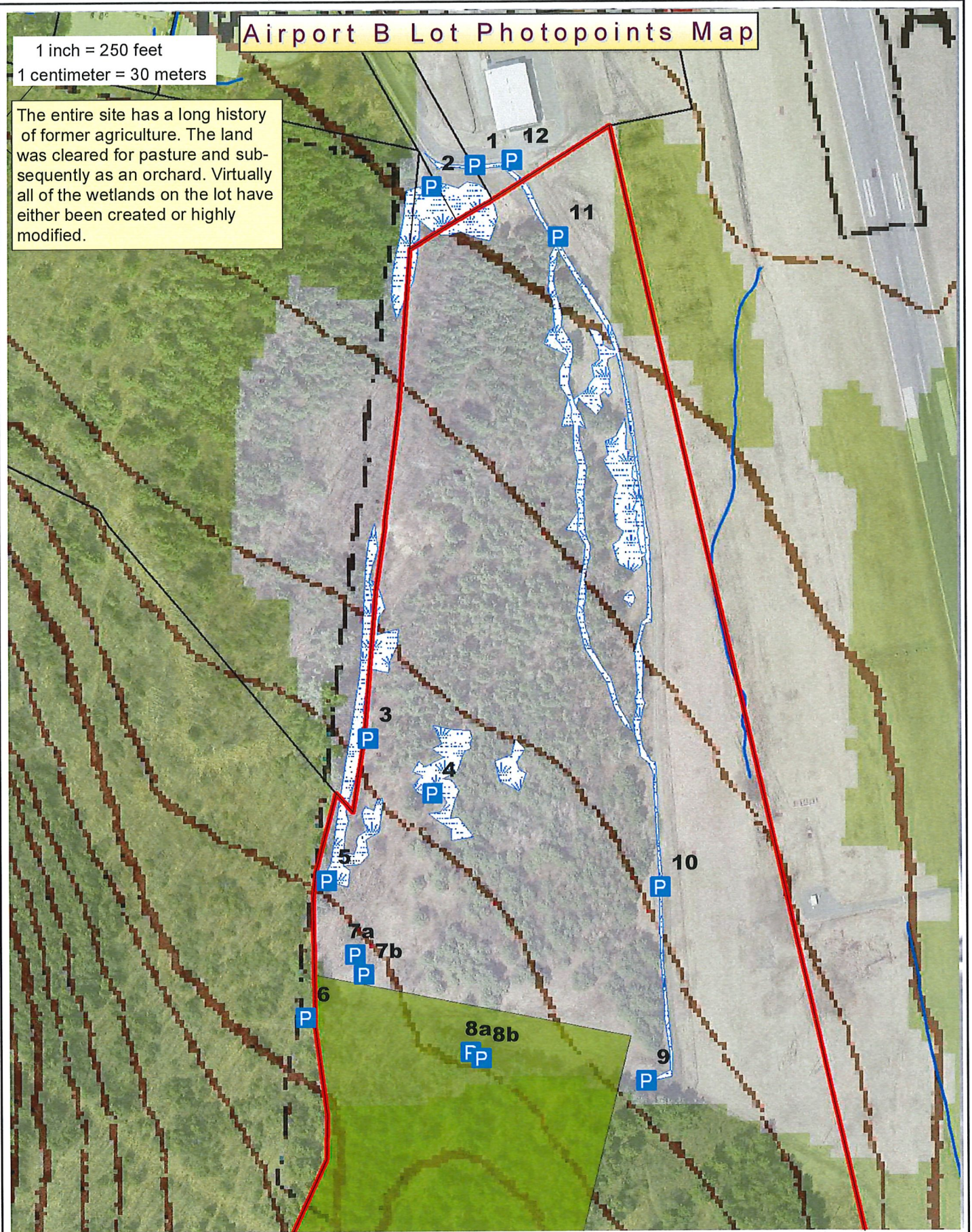
Airport B Lot, Lebanon, NH

Airport B Lot Photopoints Map

1 inch = 250 feet

1 centimeter = 30 meters

The entire site has a long history of former agriculture. The land was cleared for pasture and subsequently as an orchard. Virtually all of the wetlands on the lot have either been created or highly modified.



260 130 0 260 Meters

2.6 Photo Log – Airpark Road, Lebanon

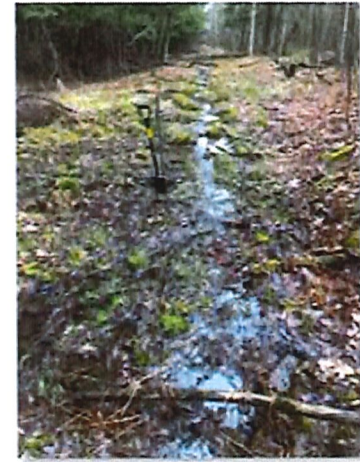


(1) 2019_04_30 entrance at end of Airpark Rd

This is where the wetland impact will be.



(2) 2019_04_30 Wetland C crossing area



(3) 2019_04_30 Hall Schoolhouse Rd (Class VI)



(4) 2019_05_01 typ. view of old wet orchard opening



(5) 2019_06_19 SW boundary corner of site along Class VI road



(6) 2020_11_12 view of Pike Gate P from near SW corner of site

2.6 Photo Log – Airpark Road, Lebanon



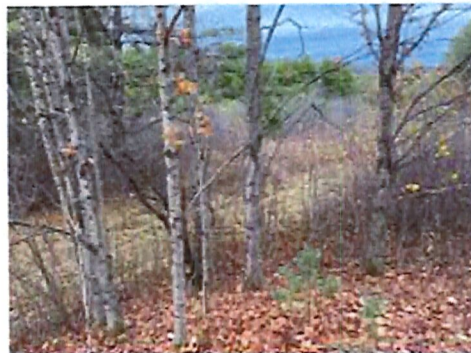
(7a) 2020_11_12 cellar hole lkg E from near SW corner



(7b) 2020_11_12 cellar hole lkg N



(8a) 2020_11_12 view of old drive toward cellar hole



(8b) 2020_11_12 view east down cellar hole drive towards airstrip

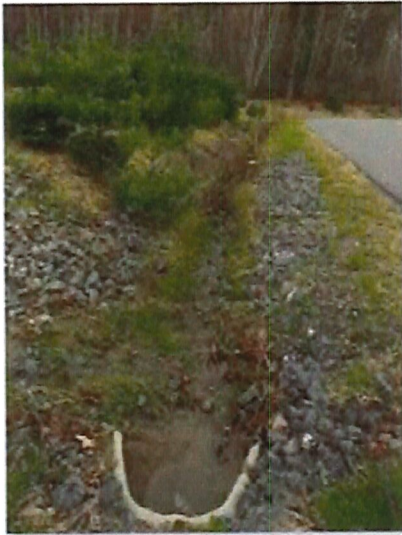


(9) 2019_05_01 view NE at beginning of cellar hole drive



(10) 2019_04_30 lkg N along access road by Wetland F ditch

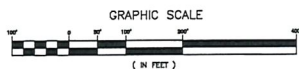
2.6 Photo Log – Airpark Road, Lebanon



(11) 2019_05_01 outflow ditch near access road
beginning



2019_04_30 (09) Wetland F ditch - typ. GPS#33



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[illegible]AIRPARK ROAD DEVELOPMENT
CONTRACT 2020-2

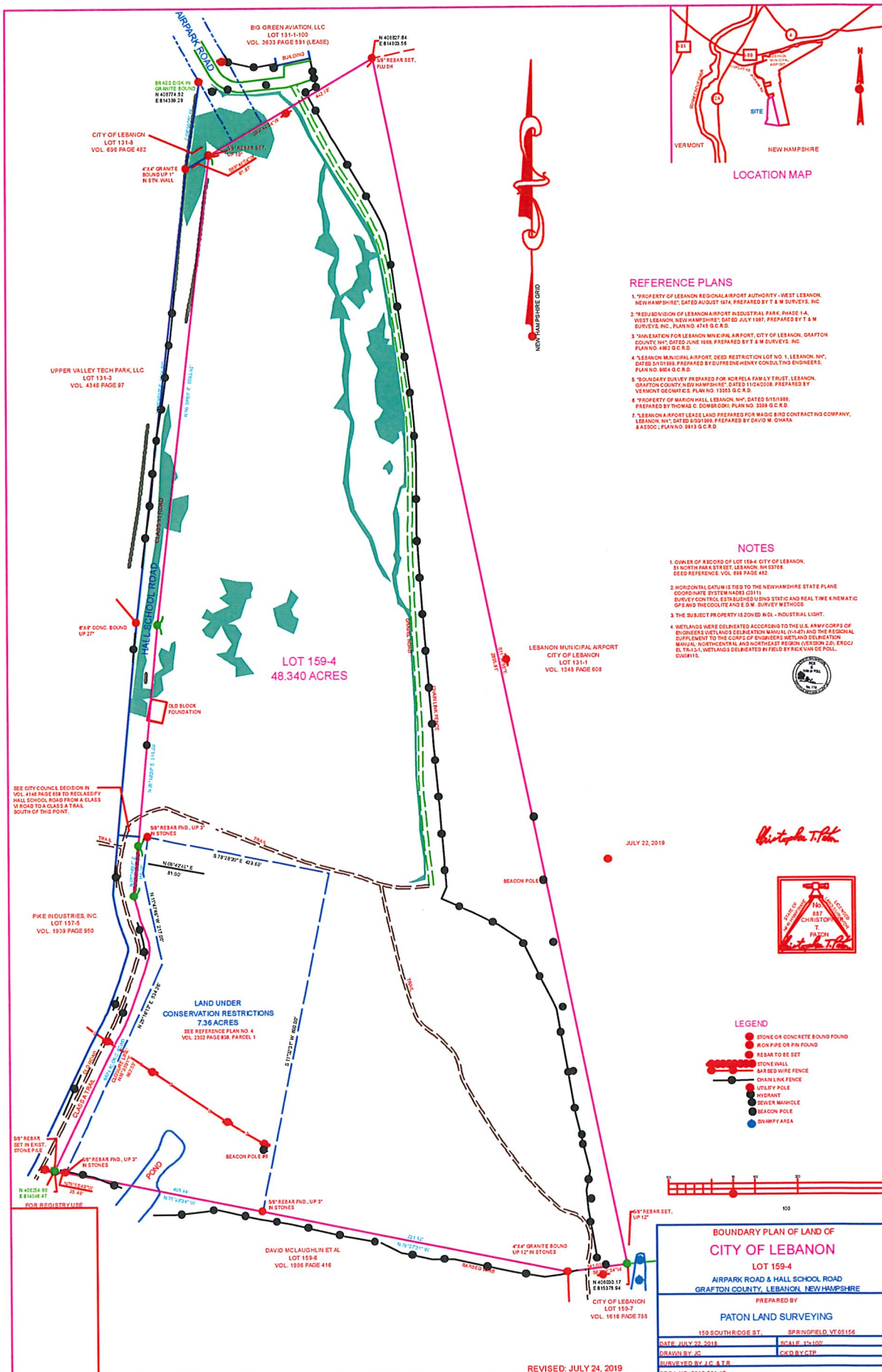
EXISTING CONDITIONS SITE PLAN

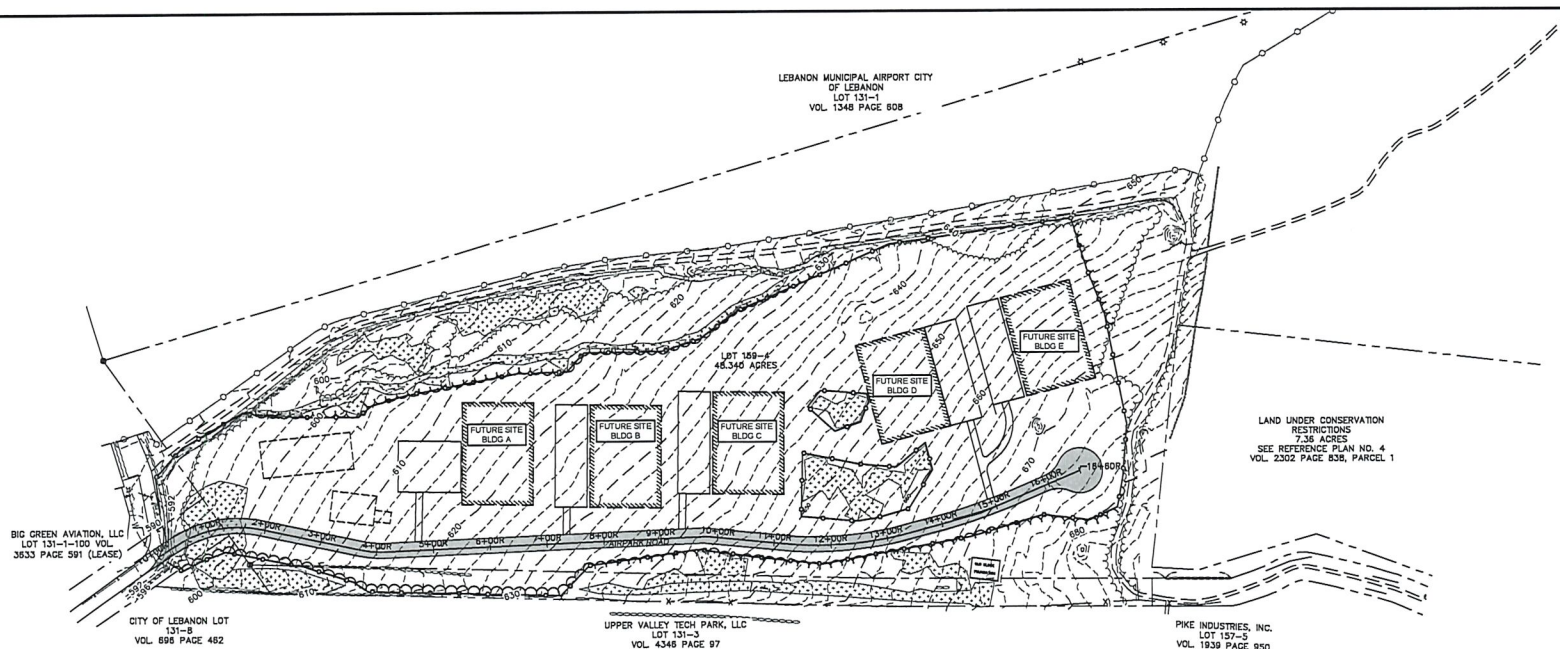
LEBANON, NEW HAMPSHIRE

Project #	31202003
Project Mgr.	T.P.KNAPP
Design by	T.P.KNAPP
Drawn by	M.C.BISSELL
Reviewed by	R.N.GOODWIN
Approved by	N.R.JOHNSON
Date	SEPTEMBER 28, 2020
Scale	AS SHOWN

G2

SHEET	OF	X
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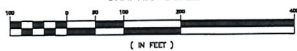


PROPOSED SITE PLAN
SCALE: 1"=100'

LEGEND

EXISTING:	PROPOSED:
--- PROPERTY LINE	--- CLEARING LIMITS
--- EDGE OF PAVEMENT	--- PAVED ROAD
--- EDGE OF GRAVEL	--- FUTURE BUILDING OUTLINE
--- TREE LINE	--- EDGE OF PARKING AREA
--- OHJ --- OVERHEAD UTILITY	--- BIORETENTION SYSTEM W/FOREBAY
--- W --- WATER MAIN	--- STORMWATER DETENTION POND
--- D --- STORM DRAIN MAIN	--- PROJECT DELINEATION FENCE
--- S --- SEWER MAIN	
+ UTILITY POLE	
△ SIGN	
△ SURVEY CONTROL POINT	
▽ WATER VALVE	
☆ WATER SHUT OFF	
⊕ FIRE HYDRANT	
⊙ SEWER MANHOLE	
⊙ DRAIN MANHOLE	
⊙ CATCH BASIN	
⊙ TREE / SHRUB	
--- BUILDING	
--- WIRE FENCE	
⊙ SOIL BORING	
--- SHRUBS	
--- CHAINLINK FENCE	
--- STONEWALL	
--- WETLAND	
--- 10 CONTOUR	
--- 2' CONTOUR	

GRAPHIC SCALE



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Manchester, VT: Tel: (802) 768-0091

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7.30.2020

REVISIONS	DATE	BY	COMMENTS
	12/1		REVISED LAYOUT BLDG D/ROAD

AIRPARK ROAD DEVELOPMENT

PROPOSED SITE PLAN

LEBANON, NEW HAMPSHIRE

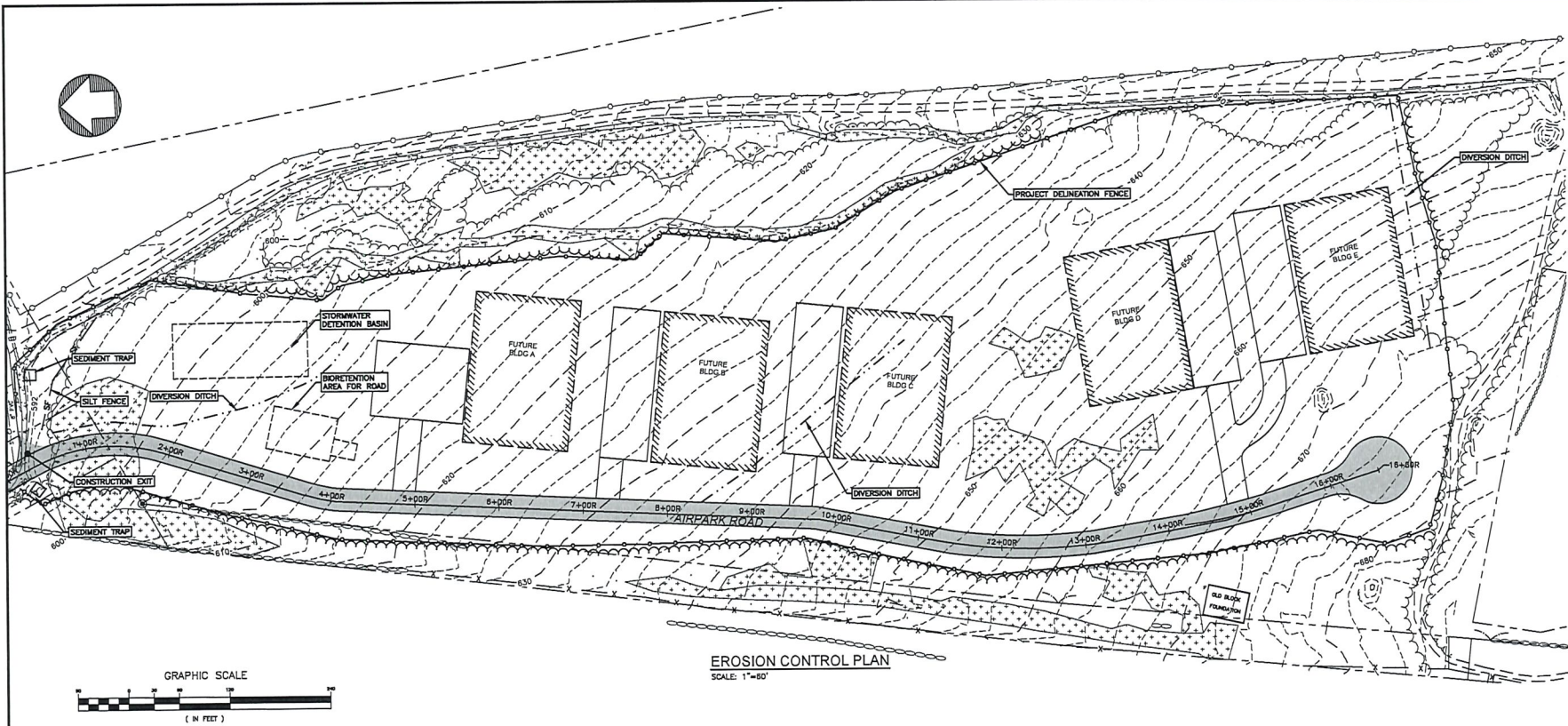
NOTES:

1. THE PROPOSED SITE USE IS COMMERCIAL/INDUSTRIAL DEVELOPMENT.
2. THE PROJECT IS INTENDED TO BE CONSTRUCTED IN PHASES. THE ROADWAY AND UTILITIES, EXCEPT THOSE SERVING INDIVIDUAL LOTS, WILL BE CONSTRUCTED BY THE OWNER (CITY OF LEBANON). INDIVIDUAL BUILDINGS, PARKING AND DRIVEWAYS WILL BE CONSTRUCTED AS EACH SITE IS DEVELOPED. THE BIORETENTION SYSTEMS AND STORMWATER CONVEYANCE COMPONENTS FOR EACH SITE ARE REQUIRED TO BE CONSTRUCTED TO THE DIMENSIONS AND SPECIFICATIONS SHOWN ON THESE PLANS. REFER TO SHEETS C17-C19.
3. THE CONSTRUCTION PROJECT CONSISTS OF ROADWAY AND UTILITY CONSTRUCTION, STORMWATER POND CONSTRUCTION AND THE CONSTRUCTION OF THE BIORETENTION SYSTEM FOR THE ROAD. THE PROJECT ALSO INCLUDES CLEARING AND ROUGH GRADING OUTSIDE THE ROADWAY, STORMWATER POND AND BIORETENTION SYSTEM FOR THE ROAD. REFER TO SHEETS C7 AND C8 FOR ROUGH GRADING INFORMATION.
4. SOIL DISTURBANCE IN THE AREAS OUTSIDE OR BEYOND THE PROJECT DELINEATION FENCE AT THE SITE PERIMETER AND INSIDE THE PROJECT DELINEATION FENCING BETWEEN THE FUTURE SITES OF BUILDINGS C AND D IS PROHIBITED.

Project #	31202003
Project Mgr.	T.P.KNAPP
Design by	N.R.JOHNSON
Drawn by	K.MENEES/M.BISSELL
Reviewed by	R.N.GOODWIN
Approved by	N.R.JOHNSON
Date	SEPTEMBER 28, 2020
Scale	AS SHOWN

C1

SHEET 3 OF 25



NOTES:

1. GENERAL REQUIREMENTS:
 - a. PERMETER CONTROLS MUST BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
 - b. STORMWATER TREATMENT PONDS AND DRAINAGE SWALES MUST BE INSTALLED BEFORE ROUGH GRADING THE SITE.
 - c. RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMPs ARE STABILIZED.
 - d. BASINS, DITCHES AND SWALES MUST BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
 - e. ROADWAYS AND PARKING AREAS MUST BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
 - f. CUT AND FILL SLOPES MUST BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
 - g. ALL AREAS OF UNSTABILIZED SOIL MUST BE STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 45 DAYS AFTER INITIAL DISTURBANCE.
 - h. EROSION CONTROL PRACTICES MUST BE INSPECTED AT LEAST WEEKLY AND AFTER EVERY RAIN EVENT OF 0.5 INCH OR MORE.
 - i. EROSION CONTROL METHODS ARE SHOWN ON THE PLAN, FOR SOME METHODS, THE GRAPHIC REPRESENTATIONS ARE NOT THE SOLE REQUIREMENTS.
2. CONSTRUCTION SEQUENCE (REFER TO INDIVIDUAL DRAWINGS FOR CONSTRUCTION REQUIREMENTS):
 - a. PHASE 1
 - i. ESTABLISH LIMITS OF DISTURBANCE AND INSTALL PROJECT DELINEATION FENCING (PDF)
 - ii. CONSTRUCT TEMPORARY MEASURES INCLUDING:
 - STABILIZED CONSTRUCTION EXIT
 - SEDIMENT TRAPS
 - SILT FENCE
 - DIVERSION DITCHES
 - iii. CONSTRUCT THE STORMWATER TREATMENT POND AND OUTLET PIPE
 - iv. COMPLETE DITCHES TO DIVERT RUNOFF TO THE STORMWATER POND
 - v. CLEAR AND ROUGH GRADE SITE (ALL BLD SITES) AND STABILIZE WITH SEED AND MULCH. THE AREA OF CLEARING AND ROUGH GRADING IS REQUIRED TO BE COMPLETED IN SECTIONS TO LIMIT EACH WORK AREA TO 5 ACRES OR LESS. EACH SECTION SHALL BE SEED AND MULCHED FOR STABILIZATION BEFORE ADDITIONAL DISTURBANCE IS INITIATED.

- vi. CONSTRUCT PHASE 1 ROAD (STATION 0+00 TO 8+00)
- vii. CONSTRUCT BIOTREATMENT AREA FOR ROAD AND PIPING TO POND
- viii. INDIVIDUAL SITES DEVELOPMENT (FUTURE CONSTRUCTION)
 - INSTALL DIVERSION DITCHES UPGRADIENT OF WORK AREA
 - INSTALL SILT FENCE DOWNGRADIENT OF WORK AREA
 - CONSTRUCT INDIVIDUAL SITE IMPROVEMENTS INCLUDING BIOTREATMENT SYSTEM
 - STABILIZE SITE WITH SEED AND MULCH
- ix. PHASE 2 (FUTURE CONSTRUCTION)
 - i. ESTABLISH LIMITS OF DISTURBANCE AND INSTALL PROJECT DELINEATION FENCING (PDF)
 - ii. CONSTRUCT TEMPORARY MEASURES INCLUDING:
 - STABILIZED CONSTRUCTION EXIT
 - SEDIMENT TRAP
 - SILT FENCE
 - iii. CONSTRUCT TEMPORARY DITCH/SWALE TO DIVERT RUNOFF FROM THE PHASE 2 PROJECT WORK AREA AND TO THE EASTERN DITCH
 - iv. CONSTRUCT PHASE 2 ROAD
 - v. INDIVIDUAL SITES DEVELOPMENT
 - INSTALL DIVERSION DITCHES UPGRADIENT OF WORK AREA
 - INSTALL SILT FENCE DOWNGRADIENT OF WORK AREA
 - CONSTRUCT INDIVIDUAL SITE IMPROVEMENTS INCLUDING BIOTREATMENT SYSTEM
 - STABILIZE SITE WITH SEED AND MULCH
- x. IN AREAS THAT WILL NOT BE PAVED, "STABLE" MEANS THAT:
 - a. A MINIMUM OF 85% VEGETATIVE COVER HAS BEEN ESTABLISHED;
 - b. A MINIMUM OF 3 INCHES OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
 - c. EROSION CONTROL BLANKETS HAVE BEEN INSTALLED IN ACCORDANCE WITH ENV-WQ 1508.03.
- xi. IN AREAS TO BE PAVED, "STABLE" MEANS THAT BASE COURSE GRAVELS MEETING THE REQUIREMENTS OF INDOT STANDARD FOR ROAD AND BRIDGE CONSTRUCTION, 2018, ITEM 304.2 HAVE BEEN INSTALLED.
- xii. NO MORE THAN 5 ACRES SHALL BE DISTURBED (NOT STABILIZED) AT ANY TIME.
- xiii. SPECIFICATIONS FOR TEMPORARY AND PERMANENT SEEDING ARE PROVIDED IN THE TECHNICAL SPECIFICATIONS SECTION.

7. COLD WEATHER SITE STABILIZATION (ENV-WQ 1505.06):

- (A) TO ADEQUATELY PROTECT WATER QUALITY DURING COLD WEATHER AND DURING SPRING RUNOFF, THE ADDITIONAL STABILIZATION TECHNIQUES SPECIFIED IN THIS SECTION SHALL BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15 THROUGH MAY 1.
- (B) SUBJECT TO (C), BELOW, THE AREA OF EXPOSED, UNSTABILIZED SOIL SHALL BE:
 - (1) LIMITED TO ONE ACRE; AND
 - (2) PROTECTED AGAINST EROSION BY THE METHODS DESCRIBED IN THIS SECTION PRIOR TO ANY TOWN OR SPRING MELT EVENT.
- (C) THE ALLOWABLE AREA OF EXPOSED SOIL MAY BE INCREASED IF A WINTER CONSTRUCTION PLAN IS DEVELOPED BY A QUALIFIED ENGINEER OR A CREEP SPECIALIST AND SUBMITTED TO THE DEPARTMENT FOR APPROVAL AS A REQUEST TO WAIVE THE ONE-ACRE LIMIT.
- (D) SUBJECT TO (F) AND (G), BELOW, ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF LESS THAN 15% THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR THAT ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEED AND COVERED WITH A PROPERLY INSTALLED AND ANCHORED EROSION CONTROL BLANKET OR WITH AT LEAST 4 INCHES OF EROSION CONTROL MIX MEETING THE CRITERIA OF ENV-WQ 1508.05(B).
- (E) SUBJECT TO (F) AND (G), BELOW, ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF 15% OR GREATER THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR THAT ARE DISTURBED AFTER OCTOBER 15, SHALL BE SEED AND COVERED WITH A PROPERLY INSTALLED AND ANCHORED EROSION CONTROL BLANKET OR WITH AT LEAST 4 INCHES OF EROSION CONTROL MIX MEETING THE CRITERIA OF ENV-WQ 1508.05(B).
- (F) ANCHORED HAY MULCH OR EROSION CONTROL MIX THAT MEETS THE CRITERIA OF ENV-WQ 1508.05(B) SHALL NOT BE INSTALLED OVER SNOW GREATER THAN ONE INCH IN DEPTH.
- (G) EROSION CONTROL BLANKETS SHALL NOT BE INSTALLED OVER SNOW GREATER THAN ONE INCH IN DEPTH OR ON FROZEN GROUND.
- (H) ALL PROPOSED STABILIZATION IN ACCORDANCE WITH (D) OR (E), ABOVE, SHALL BE COMPLETED WITHIN A DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 3 DAYS.
- (I) ALL DITCHES OR SWALES THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR THAT ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH EROSION OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS, AS DETERMINED BY THE OWNER'S ENGINEERING CONSULTANT.
- (J) AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING AREAS WHERE ACTIVE CONSTRUCTION OF THE ROAD OR PARKING AREA HAS STOPPED FOR THE WINTER SEASON SHALL BE PROTECTED WITH A MINIMUM 3-INCH LAYER OF BASE COURSE GRAVELS MEETING THE CRADATION REQUIREMENTS OF INDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, TABLE 304-1, ITEM NO. 304.1, 304.2, OR 304.3, AVAILABLE AS NOTED IN APPENDIX B.
- LOT DISTURBANCE FOR INDIVIDUAL SITES, OTHER THAN THAT SHOWN ON THE APPROVED PLANS, SHALL NOT COMMENCE UNTIL AFTER THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.



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7.30.2020

REVISIONS		BY	DATE
1	COMMENTS		
1/1	REVISED LAYOUT BLDG. D/ROAD		

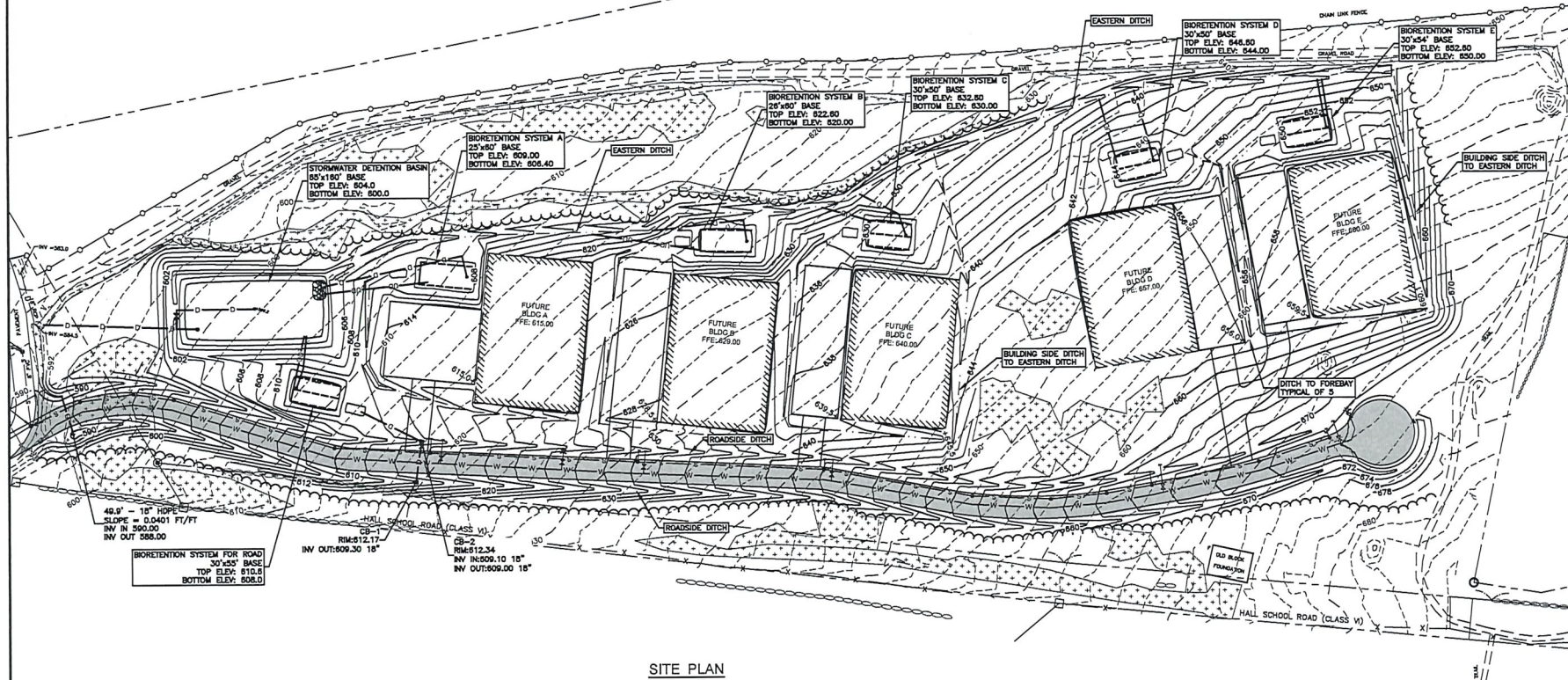
AIRPARK ROAD DEVELOPMENT

EROSION CONTROL PLAN

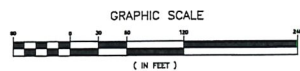
LEBANON, NEW HAMPSHIRE

Project #	31202003
Project Mgr.	T.P.KNAPP
Design by	N.R. JOHNSON
Drawn by	K. MENEESIM, BISSELL
Reviewed by	R.N. GOODWIN
Approved by	N.R. JOHNSON
Date	SEPTEMBER 28, 2020
Scale	AS SHOWN

C2



SITE PLAN
SCALE: 1"=50'



NOTES:

1. THE FINISH FLOOR ELEVATIONS (FFE) ARE ASSUMED FOR DEVELOPING THE SITE GRADING, BUILDING AND PARKING AREA ELEVATIONS AND SIZES MAY CHANGE FROM THIS PLAN, HOWEVER, THE TOTAL IMPERVIOUS AREA MAY NOT INCREASE. THE TOTAL SHOWN IS 22,500 SF PER SITE AS THE STORMWATER TREATMENT DESIGN IS DIRECTLY AFFECTED BY THE IMPERVIOUS AREA.
2. GRADING OUTSIDE THE ROAD AND STORMWATER SYSTEMS (FOR INDIVIDUAL SITE DEVELOPMENT) MAY BE MODIFIED FROM THE INFORMATION SHOWN ON THIS PLAN, MODIFICATIONS TO THE STORMWATER TREATMENT AND THE CONVEYANCE AND CONSTRUCTION REQUIREMENTS ELEVATIONS ARE NOT PERMISSIBLE.
3. CULVERTS FOR INDIVIDUAL DRIVEWAYS ARE NOT SHOWN.
4. REFER TO THE TYPICAL DRAINAGE DITCH SECTION FOR DITCH DIMENSIONS AND LINING REQUIREMENTS.
5. RIPRAP APRONS ARE REQUIRED AT EACH PIPE OUTLET, REFER TO OUTLET PROTECTION DETAIL.
6. REFER TO THE BIORETENTION PLAN AND SECTION FOR FOREBAY DIMENSIONS AND SYSTEM CONSTRUCTION, REQUIREMENTS.

Page 45



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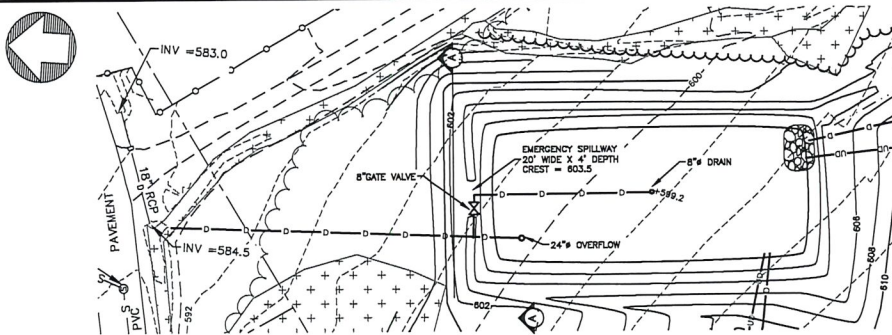
AIRPARK ROAD DEVELOPMENT

STORMWATER TREATMENT PLAN

LEBANON, NEW HAMPSHIRE

Project #	31202003
Project Mgr.	T.P.KNAPP
Design by	N.R.JOHNSON
Drawn by	K. MENEES/M. BISSELL
Reviewed by	R.N.GOODWIN
Approved by	N.R.JOHNSON
Date	SEPTEMBER 28, 2020
Scale	AS SHOWN

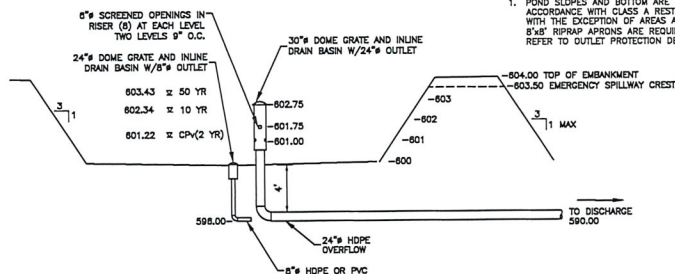
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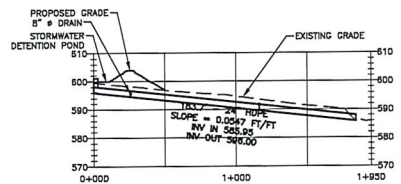
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NOTE:

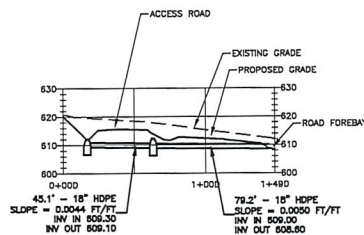
NOTE:
1. POND SLOPES AND BOTTOM ARE TO BE STABILIZED IN ACCORDANCE WITH CLASS A RESTORATION OF GROWTH, WITH THE EXCEPTION OF AREAS AT THE PIPE OUTLETS. 8"x8" RIPRAP APRONS ARE REQUIRED AT PIPE OUTLETS. REFER TO OUTLET PROTECTION DETAIL.



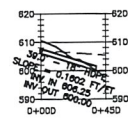
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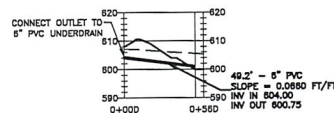
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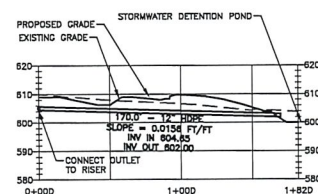
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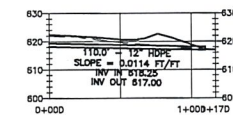
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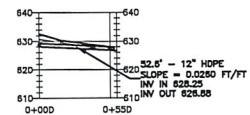
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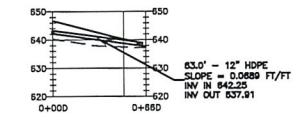
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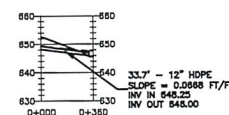
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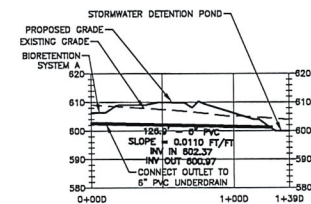
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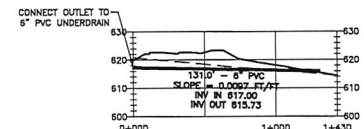
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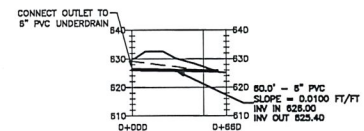
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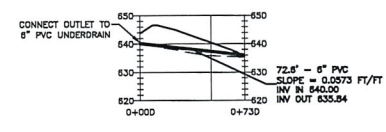
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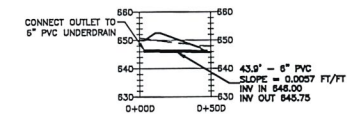
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SCALE: H: 1"=40'
V: 1"=20'



SCALE: H: 1"=40'
V: 1"=20'



SCALE: H: 1"=4'
V: 1"=2'



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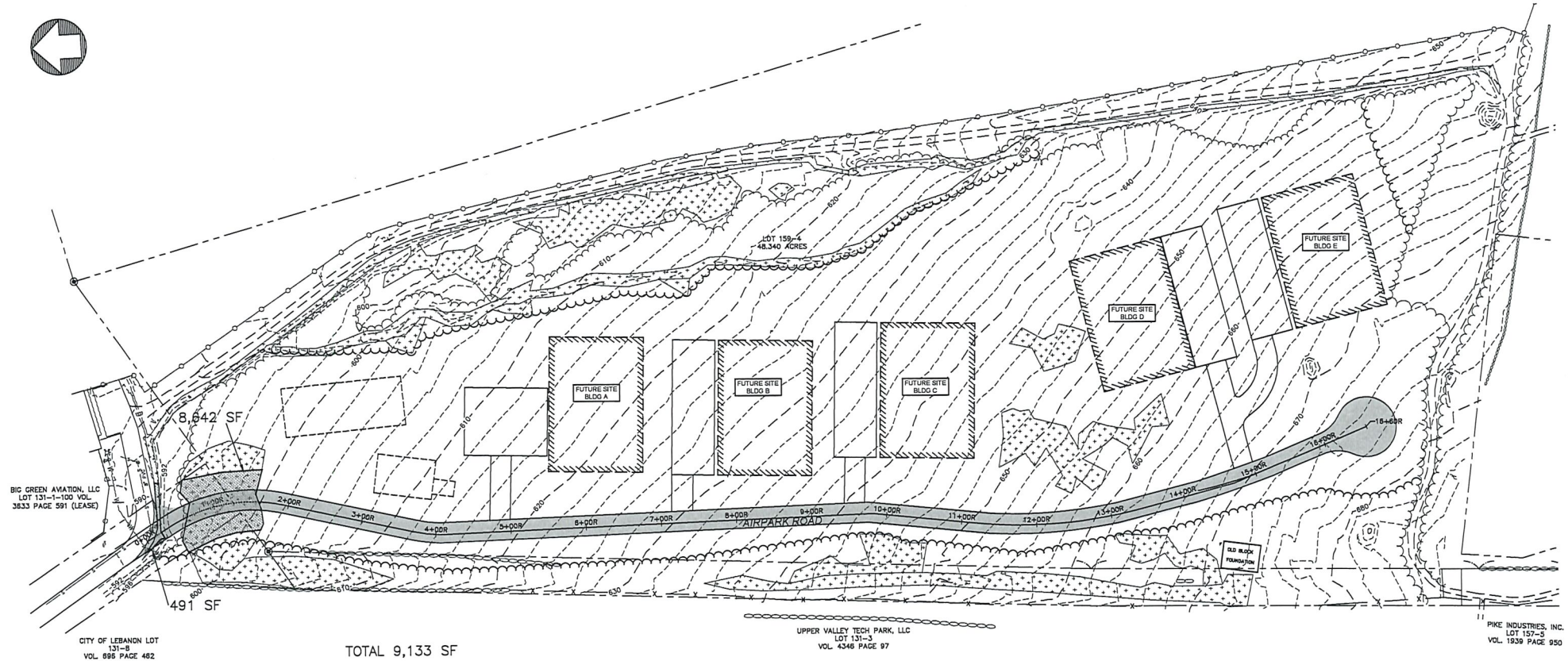
AIRPARK ROAD DEVELOPMENT

LEBANON, NEW HAMPSHIRE

STORMWATER TREATMENT SECTIONS

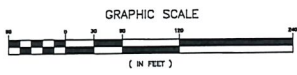
Project #	31202003
Project Mgr.	T.P.KNAPP
Design by	N.R.JOHNSON
Drawn by	K. MENEES/M. BISSELL
Reviewed by	R.N.GOODWIN
Approved by	N.R.JOHNSON
Date	SEPTEMBER 28, 2020
Scale	AS SHOWN

C18



TOTAL 9,133 SF

WETLAND IMPACTS
SCALE: 1"=80'





Ecosystem Management Consultants, LLC
c/o Rick Van de Poll, Ph.D.
30 No. Sandwich Rd.
Center Sandwich, NH 03227

September 27, 2019

To:

David Brooks
City of Lebanon Planning Department
51 North Park Street
Lebanon, NH 03766

From:

Rick Van de Poll, Ph.D.
Ecosystem Management Consultants

Re: Wetland Delineation on Lot 159-4, 'Airport B' Lot

Dear David;

The following is a short report on my delineation of wetlands at the above-cited Airport 'B' Lot 159-4 at the corner of Airpark Road and Hall School Road, so called. It includes the general findings and maps, as well as a brief description of methods used in the delineation. I have also included a short description of wetland functions for the six wetland evaluation units I identified. I have reviewed information known for the area to date including the following:

- Lebanon NRI, as published in *Natural Lebanon* (Van de Poll 2010, available at <https://lebanonnh.gov/646/Natural-Resources-Inventory>)
- Wetland GIS coverages as updated by Mark Goodwin in your office
- 2010, 2012, and 2015 aerial orthophotography
- 2-foot contours prepared from 2008 photogrammetric data sources in your office
- 2018 LiDAR imagery for the state of NH

The latter dataset contained the latest and most accurate topographic relief data for the site and was used extensively for map verification. The following summarized the field methods used.

Methods

Field site visits were conducted on April 30, May 1, and June 19 of this year. Each site visit included a review of all 21.5 acres in the north portion of the 54-acre lot. Aerial photograph and LiDAR imagery were used to locate initial wetland areas. These sites were compared against previous wetland delineations of the site by Peter Spear and Jim McClammer. In the field, a

hand-held Garmin 12XL GPS unit was used initially to locate approximate wetland edges and the extent of each wetland evaluation unit. Data points were placed in each of the wetland community types found on the property, two of which were highly disturbed in the last 20 years. Data points were placed according to standards in the 1987 *Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (2012, v.2.0) published by the Army Corps of Engineers. All four data points utilized Section 5, "Difficult Wetland Situations" owing to the degree of past disturbance. Data points were placed no greater than 23 feet (7 m) apart. Wetland plots were sampled first followed by upland plots. Standard plot sizes were used with the exception of W-1, where the configuration of the seepage swamp required altering the plot size. Soil test pits were dug at each sample point to a minimum depth of 20 inches or refusal, whichever came first. Given the time of year, notation were made on above-average water tables and elevated hydrology. Accommodations were also made for wetland vegetation by estimating maximum coverage during the growing season.

Wetland edges were then flagged alphanumerically in five of the six wetland areas. The sixth site required placing wire wands around the open, emergent, created wetland just west of the roadside ditch wetland. These flags were not numbered. The ditch itself (Wetland F) was not delineated other than noting ditch widths at various points along its length. Whereas all wetland flags were initially pointed in using a hand-held GPS unit, the flags were later picked up compass and tape after the City indicated that a survey crew was not able to pick up the flag locations. These data were then uploaded onto an ArcGIS Pro 2.3 platform and cross-checked with the LiDAR imagery to ensure accurate positional location.

The following set of findings are based on field observations during the aforesaid dates, as well as map interpretation using both ArcGIS Pro and ArcGIS 10.0 platforms:

Six wetland evaluation units were identified by 251 wetland flags in the 21.5-acre site as described herein:

- a. Wetland A – (.54 acres, 58 flags) This entailed a seepage swamp along an old byway that ran from the southwest corner of the study area near the old cellar hole northerly to roughly halfway to the Airport Access Road. It included the roadbed itself as well as a seepage area to the east below the cellar hole that appeared to be a former livestock holding area. Groundwater movement off of the roadway created a small forested swamp in the terrace east of the roadway at one point. Other than the disturbed roadbed with loamy Endoaquents, the hydric soil type conformed to the Stissing series. Wetland function was fairly low in the wetland owing to the level of prior disturbance. Some groundwater recharge value was noted.
- b. Wetland B – (.34 acres, 40 flags) This wetland included an old farm ditch that was dug across the lower northeast part of the lot in an apparent attempt to divert water in the lower part of the slope. The ditch varied from one meter to two meters in width, and had three separate areas where associated groundwater discharge had extended the width to at least 15 m. The eastern edge was associated with the fill pile from the scraped ditch to the east and skidder ruts criss-crossed the lower part. The outflow joined the main ditch (Wetland F) along the access road. This wetland was also low functioning.
- c. Wetland C – (.53 acres, 27 flags) This wetland comprised the intermittent stream and seepage area in the very northwest part of the lot. The upper part also included the old

byway that traversed Wetland A and was consequently artificially disturbed. The lower part in the eastern section was largely a created wetland from logging activity that had altered the groundwater table above the hardpan soil. Several skidder ruts criss-crossed the area, wherein depressions in excess of 50% of the area was used as the determinant of wetland extent. Soils were loamy Endoaquents throughout most of the wetland; very little morphological difference was noted between the upland and wetland positions. As a result, hydrology was the primary determinant of the wetland extent. A dense cover of gray birch and glossy buckthorn added to the disturbance nature of this largely created wetland. The outflow of this wetland was into rip-rapped ditch next to the Airport Park Road. Very few functions were noted for this wetland other than limited flood storage.

- d. Wetland D – (.076 acres, 11 flags) This was a seepage wetland within an old apple orchard area. White pine was the predominant regeneration species, along with red maple and white ash. The seepage was persistent enough to support a number of hydrophytes, however, including American elm, witherod, glossy buckthorn, sensitive fern, bladder sedge and manna grass. Since the succession from orchard appeared natural, normal circumstances appeared to exist and standard plot measurements were used. This was one of just two small wetland areas that had not been disturbed significantly after initial land clearing and plowing. Limited wildlife habitat was noted for this wetland.
- e. Wetland E – (.26 acres, 33 flags) This wetland was just west of Wetland D and also entailed an old apple orchard that had regenerated to white pine and red maple. The seepage slope had also been heavily pastured in the 20th century, and so the soils exhibited 'cow-punch morphology.' Some of the old orchard was still open and so the cover was a mix of trees, scrub-shrub and emergent wetlands. The apical extent of the up and downslope seeps were mostly determined by soil morphology since earthworm activity has limited natural regeneration of herbaceous plants. Wildlife habitat was moderate to good in this wetland, otherwise it had low functional ratings.
- f. Wetland F – (.78 acres, 82 flags) This sixth wetland was determined on the basis of its being the most recently disturbed area of the entire lot. It included the main ditch along the west side of the gravel access road and the associated pan terraces to the west where stumps and soil had been scraped off. The latter areas were delimited by wire wands with red flags; these were corrected slightly during the June site visit on the basis of persistent hydrology and fully grown hydrophytes. The four to five year old excavation and stump removal had compressed the loose fill soils in a slight pan area and created wetlands that were likely not there previously. It at least two locales it was determined that this terrace wetland was hydrologically connected to the main ditch and so the units were joined together as a single wetland. A low mound had been created in between most of the remaining areas and is therefore acting as an upland 'island.' Owing to the recency of the disturbance, only emergent vegetation was found in this wetland. Other than flood control, this wetland had little value.

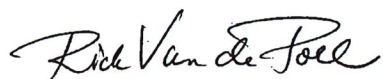
In sum, the 2.52-acre wetland area on the north part of the Airport B Lot was comprised of six, highly disturbed seepage and drainage wetlands that have very low value in terms of wetland function. Some groundwater recharge and flood storage value is offered by these wetlands, as well as limited wildlife habitat. The entire lot was formerly farmed and used as a residence in the 19th century. Evidence of stonework, foundations, walls, barbed wire fence, and livestock-disturbed soils characterizes hundreds of years of alteration. The presence of numerous invasive

plant species also indicates this level of persistent disturbance, wherein restoration of the site to original conditions is not likely possible without a great deal of cost and effort. Subsequent development of this site will need to address groundwater discharge since a very firm, densipan layer underlies the entire area. Further proliferation of invasive plant species should also be curtailed as much as possible since they currently dominate the site.

It should be noted that there were two other small pocket wetland areas in the old farm road that accesses the cellar hole in the southern part of the study area. Soil tests indicate that these may contain very small pocket wetlands of less than 20 s.f. each, both of which has resulted from continuous compaction of this access way by heavy machinery.

I would be happy to answer any questions you or the City's planning staff may have about this report.

Respectfully submitted;



Rick Van de Poll, Principal
Ecosystem Management Consultants



Fig. 1 Wetlands of the Airport B Lot lie generally alongside the west edge of the airport access road

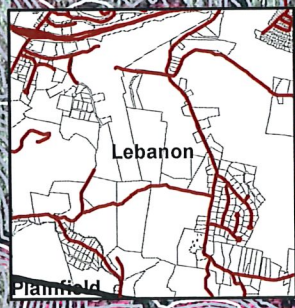
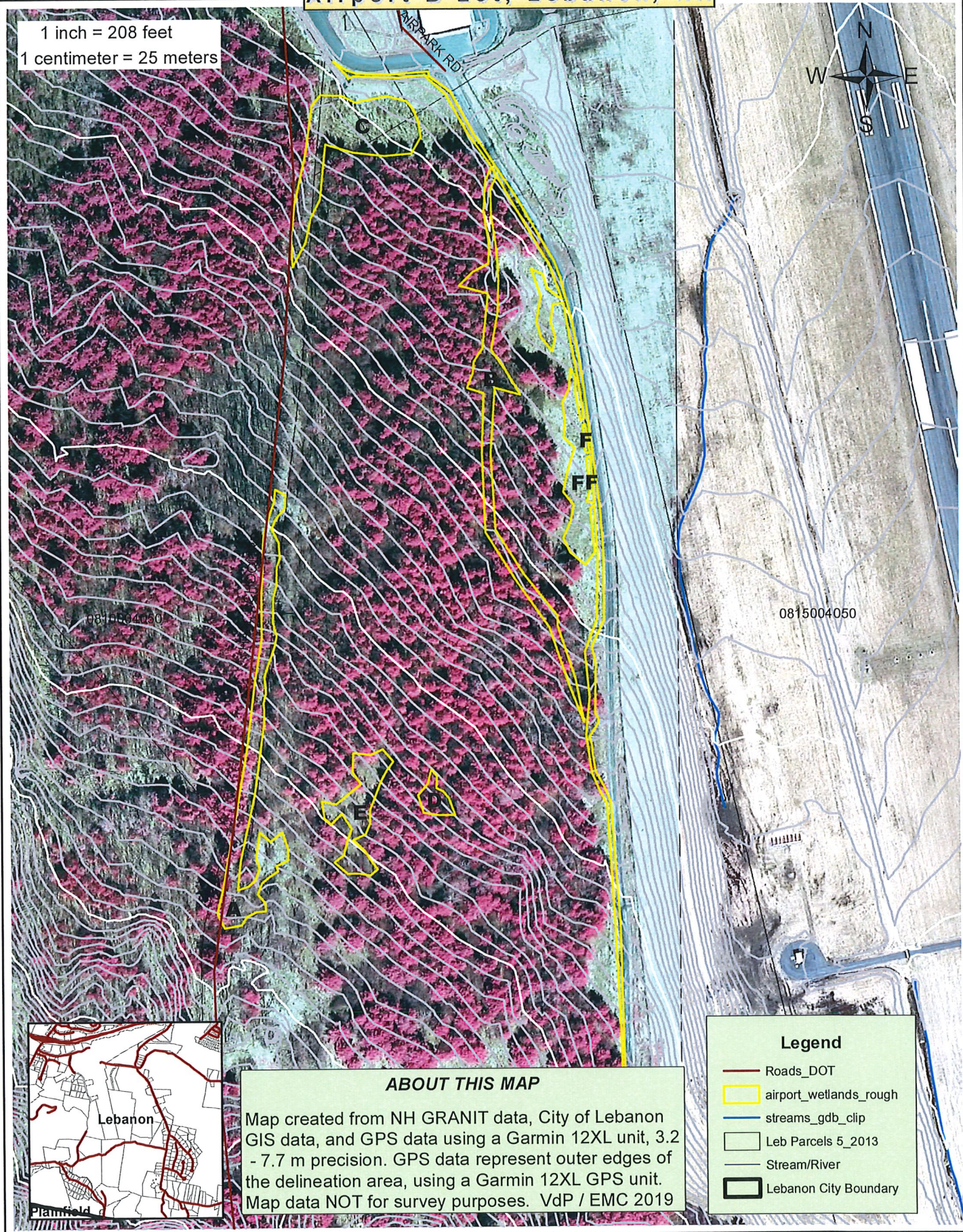


Fig. 2 General topography and location of the wetlands on the Airport B Lot

1:2,500

Airport B Lot, Lebanon, NH

1 inch = 208 feet
1 centimeter = 25 meters



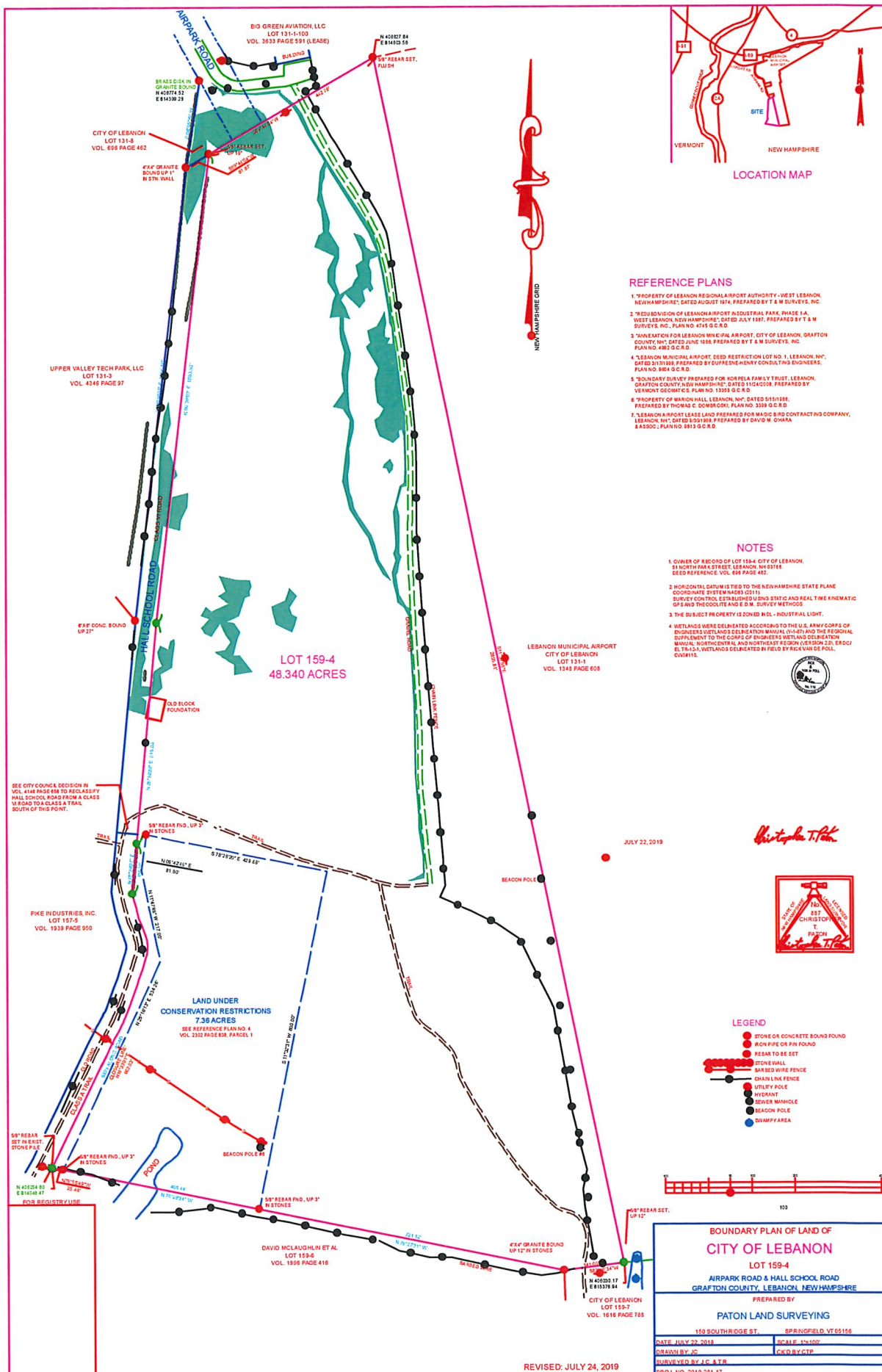
ABOUT THIS MAP

Map created from NH GRANIT data, City of Lebanon GIS data, and GPS data using a Garmin 12XL unit, 3.2 - 7.7 m precision. GPS data represent outer edges of the delineation area, using a Garmin 12XL GPS unit. Map data NOT for survey purposes. VdP / EMC 2019

Legend

- Roads_DOT
- airport_wetlands_rough
- streams_gdb_clip
- Leb Parcels 5_2013
- Stream/River
- Lebanon City Boundary

220 110 0 220 Meters





File Name : 2019_04_30 (03) Plot W-1 area a-long W boundary.JPG



File Name : 2019_04_30 (04) depleted matrix in Plot A-1 .JPG



File Name : 2019_04_30 (07) Plot U-1 soil pit-.JPG



File Name : 2019_04_30 (09) Wetland F ditch - typ. GPS#33.JPG



File Name : 2019_04_30 (10) Plot U-2 in GB sapling area Wetland C.JPG



File Name : 2019_04_30 (13) Wetland C edge.JPG



File Name : 2019_04_30 (14) outflow of Wetland C above rip-rap.JPG



File Name : 2019_05_01 (01) stone pile in seepage area.JPG



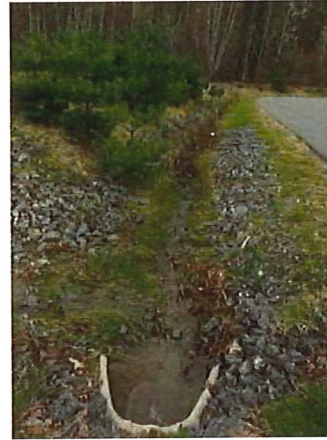
File Name : 2019_05_01 (02) Plot W-3 in Wetland D.JPG



File Name : 2019_05_01 (03) Wetland D - typ. view.JPG



File Name : 2019_05_01 (04) Wetland E - typ. view.JPG



File Name : 2019_05_01 (06) outflow ditch for all wetlands GPS#22.JPG



File Name : 2019_05_01 (08) depleted matrix at Plot W-4 Wetland F.JPG



File Name : 2019_05_01 (09) soil pit at Plot U-4.JPG



File Name : 2019_05_01 (10) edge wetland soil sample.JPG



File Name : 2019_05_01 (11) begin open ditch again to N.JPG



File Name

: 2019_05_01 (14) N-most Wetland
F panne.JPG



File Name

: 2019_06_19 (02) lower F ditch fr-
om end B.JPG



File Name

: 2019_06_19 (03) gen. view of E
seepage.JPG



File Name

: 2019_06_19 (05) upper roadside
wet spot.JPG



File Name

: 2019_06_19 (06) road bend wet
spot.JPG

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lebanon Airport B Lot City/County: Lebanon / Gratton Sampling Date: 4/30/2019
 Applicant/Owner: City of Lebanon State: NH Sampling Point: W-1
 Investigator(s): R. Vande Poll Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): channelized Slope (%): 2
 Subregion (LRR or MLRA): R Lat: 43.61615 Long: -72.308564 Datum: NAD 83
 Soil Map Unit Name: S4Serrg NWI classification: PEMUB

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

Are Vegetation ☒, Soil ☒, or Hydrology ☒ significantly disturbed?

Are "Normal Circumstances" present? Yes _____ No ☒

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic?

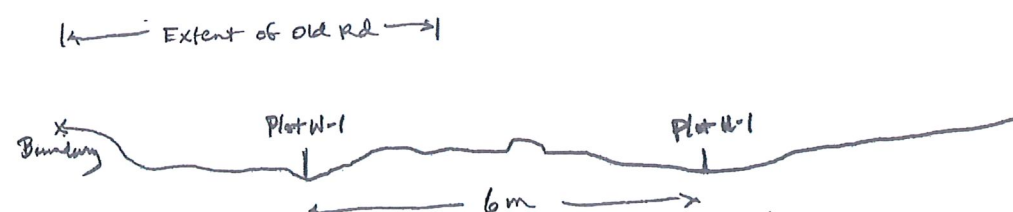
(If needed, explain any answers in Remarks.)

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
 Plot dimensions were 5m x 10m to conform with orientation & size of seepage wetland. As a result, no trees were included in the vegetation tally. The seepage was created by an old farm road that altered the hydrology & soils & subsequent sedimentation sequence.

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 _____	Depth (inches): <u>0-1"</u>	Wetland Hydrology Present? Yes ☒ No _____
Water Table Present? Yes ☒ No _____	Depth (inches): <u>0"</u>	
Saturation Present? Yes ☒ No _____	Depth (inches): <u>0"</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: <u>None available</u>		
Remarks: 		

VEGETATION – Use scientific names of plants.Sampling Point: W-1

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
			= Total Cover

Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
			= Total Cover

Herb Stratum (Plot size: <u>5 x 10 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carex erinosa</u>	<u>80%</u>	<u>✓</u>	<u>OBL</u>
2. <u>Onoclea sensibilis</u>	<u>35%</u>	<u>✓</u>	<u>FACW</u>
3. <u>Ribes hirtellum</u>	<u>15%</u>		<u>FACW</u>
4. <u>Veronica americanum</u>	<u>7%</u>		<u>OBL</u>
5. <u>Carex projecta</u>	<u>5%</u>		<u>FACW</u>
6. <u>Rhamnus cathartica</u>	<u>3%</u>		<u>FAC</u>
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
			= Total Cover

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
			= Total Cover

Remarks: (Include photo numbers here or on a separate sheet.)

Dominance Test worksheet:Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)Total Number of Dominant Species Across All Strata: 2 (B)Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)**Prevalence Index worksheet:**

Total % Cover of: Multiply by:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0¹
- ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**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.

Hydrophytic Vegetation Present?

Yes ✓ No _____

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lebanon Airport B Lot City/County: Lebanon/Grafton Sampling Date: 4/30/2019
 Applicant/Owner: City of Lebanon State: NH Sampling Point: W-1
 Investigator(s): R. Van de Poll Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): R Lat: 43.61614 Long: -72.308493 Datum: NAD 83
 Soil Map Unit Name: Pitts town NWI classification: U

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 ☒ No _____	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present? Yes _____ No ☒	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes ☒ No _____	
Remarks: (Explain alternative procedures here or in a separate report.) <u>Plot W-1 19 feet E of Plot W-1</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☒ Water-Stained Leaves (B9) ☐ High Water Table (A2) ☐ Aquatic Fauna (B13) ☐ Saturation (A3) ☐ Marl Deposits (B15) ☐ Water Marks (B1) ☐ Hydrogen Sulfide Odor (C1) ☐ Sediment Deposits (B2) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Drift Deposits (B3) ☐ Presence of Reduced Iron (C4) ☐ Algal Mat or Crust (B4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Iron Deposits (B5) ☐ Thin Muck Surface (C7) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes ☒ No _____ Depth (inches): <u>20"</u> Saturation Present? Yes ☒ No _____ Depth (inches): <u>12"</u> (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Water table & saturation high due to time of year</u>		

VEGETATION – Use scientific names of plants.Sampling Point: U-1

Tree Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>92</u>	<u>✓</u>	<u>FAC</u>
2. <u>Fraxinus americana</u>	<u>5</u>		<u>FACW</u>
3. <u>Pinus strobus</u>	<u>2</u>		<u>FACW</u>
4. <u>Betula populifolia</u>	<u>1</u>		<u>FAC</u>
5. _____			
6. _____			
7. _____			
<u>100</u> = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15' radius</u>)			
1. <u>Rhamnus frangula</u>	<u>45</u>	<u>✓</u>	<u>FAC</u>
2. <u>Vitis riparia</u>	<u>15</u>		<u>FACW</u>
3. <u>Prunus serotinus</u>	<u>15</u>		<u>FACW</u>
4. <u>Acer rubrum</u>	<u>8</u>		<u>FAC</u>
5. _____			
6. _____			
7. _____			
_____ = Total Cover			
Herb Stratum (Plot size: <u>5' radius</u>)			
1. <u>Oxyclea sensibilis</u>	<u>90</u>	<u>✓</u>	<u>FACW</u>
2. <u>Carex crinita</u>	<u>20</u>		<u>OBL</u>
3. <u>Viburnum nudum var. cassinoides</u>	<u>10</u>		<u>FACW</u>
4. <u>Cornus amomum</u>	<u>8</u>		<u>FACW</u>
5. _____			
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			
11. _____			
12. _____			
_____ = Total Cover			
Woody Vine Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
_____ = Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (Include photo numbers here or on a separate sheet.)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lebanon Airport B Lot City/County: Lebanon / Grafton Sampling Date: 4/20/2019
 Applicant/Owner: City of Lebanon State: NH Sampling Point: W-2
 Investigator(s): R. VandePol Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR or MLRA): R Lat: 43.19429 Long: -72.20748 Datum: NAD 83
 Soil Map Unit Name: Endoaquepts, loamy NWI classification: PFO1E
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☒, or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes _____ 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 ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present? Yes ☒ No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes ☒ No _____	
Remarks: (Explain alternative procedures here or in a separate report.) <u>Area in 20-year old cut with shidden cuts throughout area</u>	

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 _____	Depth (inches): <u>4" (and)</u>	Wetland Hydrology Present? Yes ☒ No _____	
Water Table Present? Yes ☒ No _____	Depth (inches): <u>2"</u>		
Saturation Present? Yes ☒ No _____	Depth (inches): <u>0"</u>		
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: <u>Area significantly degraded by shidden cuts; wetland plot placed in artificially depressed area</u>			

VEGETATION – Use scientific names of plants.

Sampling Point: W-2

Tree Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Betula populifolia</u>	<u>100%</u>	☒	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

100% = Total Cover

Sapling/Shrub Stratum (Plot size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Betula populifolia</u>	<u>75%</u>	☒	<u>FAC</u>
2. <u>Frangula alnus</u>	<u>25%</u>	☒	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

100% = Total Cover

Herb Stratum (Plot size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Rubus hispidus</u>	<u>15%</u>	☒	<u>FACW</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____

15% = Total Cover

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____

_____ = Total Cover

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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.

Hydrophytic Vegetation Present? Yes ☒ No _____

Remarks: (Include photo numbers here or on a separate sheet.)

Dense shading & time of year prevented much herbaceous spp.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lebanon Airport B Lot City/County: Lebanon / Grafton Sampling Date: 4/30/2019
 Applicant/Owner: City of Lebanon State: NH Sampling Point: U-2
 Investigator(s): R. Van de Pol Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): R Lat: 43.61952 Long: -72.307442 Datum: NAD83
 Soil Map Unit Name: Endoaquents NWI classification: U
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☒, or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes _____ 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 ☒ No _____	Is the Sampled Area within a Wetland?	Yes _____ No ☒
Hydric Soil Present?	Yes _____ No ☒		
Wetland Hydrology Present?	Yes ☒ No _____	If yes, optional Wetland Site ID: _____	

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

Plot U-2 12 feet NE of Plot W-2**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 ☒ Depth (inches): _____
 Water Table Present? Yes ☒ No _____ Depth (inches): 12"
 Saturation Present? Yes ☒ No _____ Depth (inches): 4"
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No _____

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

Remarks:

saturation observed due to time of year

VEGETATION – Use scientific names of plants.

Sampling Point: U-2

Tree Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Betula populifolia</u>	<u>100</u>	<u>✓</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
<u>100</u> = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Frangula alnus</u>	<u>45%</u>	<u>✓</u>	<u>FAC</u>
2. <u>Betula populifolia</u>	<u>35%</u>	<u>✓</u>	<u>FAC</u>
3. <u>Prunus pennsylvanica</u>	<u>35%</u>	<u>✓</u>	<u>FACU</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
<u>115%</u> = Total Cover			
Herb Stratum (Plot size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Paratetopterus novboracensis</u>	<u>40%</u>	<u>✓</u>	<u>FAC</u>
2. <u>Rubus hirsutus</u>	<u>15%</u>	<u>✓</u>	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
<u>55%</u> = Total Cover			
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
_____ = Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (Include photo numbers here or on a separate sheet.)

Cover type artificial w/ predominance of invasive species (blackthorn)

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WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lebanon Airport B Lot City/County: Lebanon / Grafton Sampling Date: 5/1/2019
 Applicant/Owner: City of Lebanon State: NH Sampling Point: W-3
 Investigator(s): R. Vanda Poll Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 2%
 Subregion (LRR or MLRA): R Lat: 43.616371 Long: -72.307285 Datum: NAD 83
 Soil Map Unit Name: St5smg NWI classification: PFA1/E
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present? Yes ☒ No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes ☒ No _____	
Remarks: (Explain alternative procedures here or in a separate report.) <u>1st old apple orchard area regen with pine</u>	

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 ☒ Depth (inches): _____
 Water Table Present? Yes ☒ No _____ Depth (inches): 10"
 Saturation Present? Yes ☒ No _____ Depth (inches): 0"
 (Includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No _____

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

Remarks:

VEGETATION – Use scientific names of plants.Sampling Point: W-3

Tree Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Pinus strobus</u>	<u>46%</u>	☒	<u>FACU</u>
2. <u>Populus tremuloides</u>	<u>28%</u>	☒	<u>FACU</u>
3. <u>Acer rubrum</u>	<u>22%</u>		<u>FAC</u>
4. <u>Ulmus americana</u>	<u>18%</u>		<u>FACW</u>
5. <u>Fraxinus americana</u>	<u>10%</u>		<u>FACU</u>
6. <u>Betula populifolia</u>	<u>2%</u>		<u>FAC</u>
7. _____			
<u>126%</u> = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Frangula alnus</u>	<u>55%</u>	☒	<u>FAC</u>
2. <u>Ulmus americana</u>	<u>7%</u>		<u>FACW</u>
3. <u>Viburnum nudum var. cocc.</u>	<u>5%</u>		<u>FACW</u>
4. <u>Fraxinus americana</u>	<u>2%</u>		<u>FACU</u>
5. _____			
6. _____			
7. _____			
<u>69%</u> = Total Cover			
Herb Stratum (Plot size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Oxycoccus sensibilis</u>	<u>40%</u>	☒	<u>FACU</u>
2. <u>Glyceria striata</u>	<u>45%</u>	☒	<u>OBL</u>
3. <u>Carex intumescens</u>	<u>10%</u>		<u>OBL</u>
4. <u>Carex debilis</u>	<u>35%</u>	☒	<u>FACU</u>
5. <u>Lonicera morrowi</u>	<u>3%</u>		<u>FACU</u>
6. <u>Ranunculus acris</u>	<u>3%</u>		<u>FAC</u>
7. <u>Pragaria vesca</u>	<u>1%</u>		<u>FACU</u>
8. _____			
9. _____			
10. _____			
11. _____			
12. _____			
<u>137%</u> = Total Cover			
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
_____ = Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____	(A) _____ (B) _____
Prevalence Index = B/A = _____	

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☐ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-3

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lebanon Airport B Lot City/County: Lebanon / Grafton Sampling Date: 5/1/2019
 Applicant/Owner: City of Lebanon State: NH Sampling Point: U-3
 Investigator(s): R. Vande Pol Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope (%): 2
 Subregion (LRR or MLRA): R Lat: 43.616404 Long: -72.307211 Datum: NAD 83
 Soil Map Unit Name: Pittstown NWI classification: U
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 _____ No ☒	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present? Yes _____ No ☒	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes _____ No ☒	
Remarks: (Explain alternative procedures here or in a separate report.) <u>Plot U-3 7m to NE of Plot W-3</u>	

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 ☒	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No ☒	
Water Table Present? Yes ☒ No _____	Depth (inches): <u>26"</u>		
Saturation Present? Yes ☒ No _____	Depth (inches): <u>16"</u>		
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION – Use scientific names of plants.

Sampling Point: 4-3

Tree Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Pinus strobus</u>	<u>64%</u>	☒	<u>FACU</u>
2. <u>Populus tremuloides</u>	<u>32%</u>	☒	<u>FACU</u>
3. <u>Acer rubrum</u>	<u>2%</u>		<u>FAC</u>
4. <u>Fraxinus americana</u>	<u>2%</u>		<u>FACU</u>
5. _____			
6. _____			
7. _____			
<u>100%</u> = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Frangula alnus</u>	<u>65%</u>	☒	<u>FAC</u>
2. <u>Acer rubrum</u>	<u>18%</u>		<u>FAC</u>
3. <u>Malus pumila</u>	<u>15%</u>		<u>FACU</u>
4. <u>Ulmus americana</u>	<u>2%</u>		<u>FACU</u>
5. _____			
6. _____			
7. _____			
<u>100%</u> = Total Cover			
Herb Stratum (Plot size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carex debilis</u>	<u>30%</u>	☒	<u>FACW</u>
2. <u>Oenothera sensibilis</u>	<u>12%</u>	☒	<u>FACW</u>
3. <u>Prunus virginiana</u>	<u>12%</u>	☒	<u>FACU</u>
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			
11. _____			
12. _____			
_____ = Total Cover			
Woody Vine Stratum (Plot size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Celastrus orbiculatus</u>	<u>35%</u>	☒	<u>UPL</u>
2. _____			
3. _____			
4. _____			
<u>35%</u> = Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 43% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☐ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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.

Hydrophytic Vegetation Present? Yes _____ No ☒

Remarks: (Include photo numbers here or on a separate sheet.)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lebanon Airport B Lot City/County: Lebanon / Grafton Sampling Date: 5/1/2019
 Applicant/Owner: City of Lebanon State: NH Sampling Point: W-9
 Investigator(s): R. Vande Poll Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): R Lat: 43.617366 Long: -72.306408 Datum: NAD 83
 Soil Map Unit Name: Endoquents, Loamy NWI classification: PEM1B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☒, or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes _____ 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 ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present? Yes ☒ No _____	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present? Yes ☒ No _____	

Remarks: (Explain alternative procedures here or in a separate report.)
Area of compacted fill from adjacent ditch, after scraped stumps pushed off

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 _____	Depth (inches): <u>4"</u>	Wetland Hydrology Present? Yes ☒ No _____
Water Table Present? Yes _____ No _____	Depth (inches): <u>?</u>	
Saturation Present? Yes ☒ No _____	Depth (inches): <u>0"</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: <u>None available</u>		
Remarks: <u>Plot within inundated scrape pool with excavator tracks</u>		

VEGETATION – Use scientific names of plants.Sampling Point: W-4

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																																																																																																																																													
1. _____	_____	_____	_____																																																																																																																																													
2. _____	_____	_____	_____																																																																																																																																													
3. _____	_____	_____	_____																																																																																																																																													
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				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%</u> (A/B)																																																																																																																																												
				Prevalence Index worksheet:																																																																																																																																												
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				FACW species _____ x 2 = _____																																																																																																																																												
				FAC species _____ x 3 = _____																																																																																																																																												
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				UPL species _____ x 5 = _____																																																																																																																																												
				Column Totals: _____ (A) _____ (B)																																																																																																																																												
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				☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)																																																																																																																																												
				☐ Problematic Hydrophytic Vegetation ¹ (Explain)																																																																																																																																												
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WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lebanon Airport B Lot City/County: Lebanon / Grafton Sampling Date: 8/1/2009
 Applicant/Owner: City of Lebanon State: NH Sampling Point: U-4
 Investigator(s): R. Vande Pol Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 0
 Subregion (LRR or MLRA): R Lat: 43.617743 Long: -72.306237 Datum: NAD83
 Soil Map Unit Name: Udorthents, smoothed NWI classification: U

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☒, or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes _____ 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 ☒ No _____	Is the Sampled Area within a Wetland?	Yes _____ No ☒
Hydric Soil Present?	Yes _____ No ☒	If yes, optional Wetland Site ID: _____	
Wetland Hydrology Present?	Yes _____ No ☒		
Remarks: (Explain alternative procedures here or in a separate report.) <u>Plot U-4 6.5 m SE of Plot W-4</u> <u>Plot consisting of low ridge formed between ditch and compact far area</u>			

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 ☒	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No ☒	
Water Table Present? Yes _____ No ☒	Depth (inches): _____		
Saturation Present? Yes ☒ No _____	Depth (inches): <u>16"</u>		
(Includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION – Use scientific names of plants.Sampling Point: U-4

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
_____ = Total Cover			

Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
_____ = Total Cover			

Herb Stratum (Plot size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Digitaria sanguinalis</u>	<u>65%</u>	<u>✓</u>	<u>FACU</u>
2. <u>Dichanthelium acuminatum</u>	<u>35%</u>	<u>✓</u>	<u>FAC</u>
3. <u>Erigeron canadensis</u>	<u>15%</u>		<u>FACU</u>
4. <u>Fragaria vesca</u>	<u>10%</u>		<u>FACU</u>
5. <u>Solidago canadensis</u>	<u>7%</u>		<u>FACU</u>
6. <u>Euthamia graminifolia</u>	<u>5%</u>		<u>FAC</u>
7. <u>Oenothera biennis</u>	<u>3%</u>		<u>FACU</u>
8. _____			
9. _____			
10. _____			
11. _____			
12. _____			
<u>140%</u> = Total Cover			

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
_____ = Total Cover			

Remarks: (Include photo numbers here or on a separate sheet.)
All plants from artificial disturbance of site

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

 Total Number of Dominant Species Across All Strata: 2 (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)
Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
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.

Hydrophytic Vegetation Present?

 Yes ✓ No _____

NH Method Summary of Scores

Airport B Lot

Town: Lebanon

Add qualitative information to rows 6 through 9

Do not add data to Scores columns - Functional Scores are automatically recorded from data sheets for each

Wetland name/code	SAMPLE	A	B	C	D	E	F	MEAN
Date Evaluated	7/2/2010	9/16/2020	9/16/2020	9/16/2020	9/16/2020	9/16/2020	9/16/2020	
Investigator	F. Mitchell	R. Van de Poll	R. Van de Poll	R. Van de Poll	R. Van de Poll	R. Van de Poll	R. Van de Poll	
Wetland Acres	61	0.54	0.34	0.53	0.08	0.26	0.78	0.42
Watershed Acres	873	15.62	28.2	2.83	2.03	1.73	66.51	19.49
Wetland Functions & Scores		A	B	C	D	E	F	
1. ECOLOGICAL INTEGRITY	8.5	4.9	2.8	1.0	1.0	1.0	0.0	1.78
2. WETLAND WILDLIFE HABITAT	7.5	4.9	3.4	1.4	1.4	1.4	0.3	2.13
3. FISH & AQUATIC HABITAT	6.1	2.5	2.2	2.2	2.2	2.2	1.3	2.09
4. SCENIC QUALITY	9.2	2.3	0.0	0.0	0.0	0.0	0.0	0.39
5. EDUCATIONAL POTENTIAL	6.4	3.4	0.9	0.5	0.5	0.5	0.2	1.01
6. WETLAND-BASED RECREATION	6.5	4.5	0.6	0.2	0.2	0.2	0.1	0.98
7. FLOODWATER STORAGE	5.5	1.7	0.8	3.9	1.8	3.7	0.8	2.11
8. GROUNDWATER	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.00
9. SEDIMENT TRAPPING	5.9	7.0	0.1	0.6	0.3	0.5	0.1	1.43
10. NUTRIENT TRANSFORMATION	5.8	7.7	4.2	4.9	4.4	4.9	4.2	5.04
11. SHORELINE ANCHORING	7.5	3.4	0.0	0.0	0.0	0.0	0.0	0.56
12. NOTEWORTHINESS	30.0	10.0	0.0	0.0	0.0	0.0	0.0	1.67

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code WETLAND A Date Evaluated: 9/16/2019
Wetland area (acres) 0.54 Evaluated by: R. Van de Poll
Watershed area (acres) 15.62

Do not enter data into cells highlighted in blue. These cells contain formulas that automatically carry data over from function to function, or total and average functional scores.

1. ECOLOGICAL INTEGRITY	Score	10	5	1	0	Notes
1. Land uses in watershed that degrade water quality?	10.0	<5% of watershed with such land uses	5-10% of watershed with such land uses	>10% of watershed with such land uses		
2. Fill in Wetland?	1.0	Less than 1%	1-3%	>3%		
3. Agriculture in wetland?	10.0	Less than 5%	5-25%	> 25%		former ag in 20th century
4. Logging activity in wetland?	10.0	Less than 1%	1-10%	> 10%		
5. Human activity in wetland?	1.0	Low	Moderate	High		most used as roadway
6. Invasive plants in wetland?	1.0	<1%	1-5%	> 5%		glossy buckthorn
7. Road/driveway/railroad crossings?	1.0	None	within 500ft of wetland	adjacent to or crossing wetland		most is a former roadway
8. Human activity within 500 ft?	5.0	Little or None	evident in up to 25% of 500 ft zone	evident in more than 25% of 500 ft zone		trails & gravel roads
9. % impervious surface within 500 ft.?	5.0	< 3%	3-10%	>10%		including gravel roads
10. Structure regulating water flow?	5.0	None	Slight modification	Severe modification		stonewall at edge of flow
Average Score - Ecological Integrity		4.9				

2. WETLAND WILDLIFE HABITAT	Score	10	5	1	0	Notes
1. Wetland acres?	1.0	> 100 acres	20-100 acres	<20 acres		
2. Ecological Integrity Avg. score?	4.9					
3. Water quality (Use F1, Q1 score)?	10.0					
4. Open water < 6.6ft deep?	1.0	> 3 acres	0.5 - 3 acres	< 0.5 acre		
5. Deepwater Habitats?	1.0	stream ≥ 1 mile and/or lake/pond >10 acres	stream < 1 mile and/or lake/pond <10 acres	No deepwater		
6. Wetland vegetation class diversity?	5.0	3 or more classes	2 classes	1 class		
7. Proximity to other wetlands?	10.0	connected/unconnected within 0.25 mile	connected 0.5-1mi. or unconnected 0.25-0.5 mi.	Not connected within 1 mile or > 0.5 mi. from unconnected		
8. Wildlife travel corridors?	10.0	Free access	Access partially blocked	Access blocked		
9. % of wetland edge undisturbed?	5.0	>95%	75-95%	< 75%		
10. Invasive plants (Use F1, Q6 score)	1.0					
Average Score - Wildlife Habitat		4.9				

3. FISH & AQUATIC HABITAT	Score	10	5	1	0	Notes
1. Dominant land use in watershed?	10.0	Woodland, wetland, inactive farmland	Active farm/rural res	Heavily developed residential, commercial, industrial		
2. Water Quality? (use F1, Q1 score)	10.0					
3. Open water?(use F2, Q4 score)	1.0					
4. Deepwater habitats > 6.6 ft. deep?	0.0	> 100 acres	10-100 acres	< 10 acres	Not present	
5. Stream width in wetland?	0.0	> 50 ft.	25-50 ft.	< 25 ft.	Not present	
6. Alteration of stream channel?	0.0	Natural channel / low gradient or steep gradient w/ riffles	Recently modified or formerly channelized	Recently channelized or stream in non-vegetated chute/pipe	Not present	
7. Diversity of substrate types?	1.0	4 or more substrates	2-3 substrates	1 substrate		
8. Coarse woody material and large rocks?	5.0	> 10% of cover in water	< 10% of cover in water	No visible cover		
9. Floating & submerged vegetation?	1.0	> 70% cover in water	30-70% cover in water	< 30% cover		
10. Artificial Barriers to aquatic life?	0.0	No barriers	Artificial barrier with provision for passage	Barrier with no provision for passage	No stream	

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code **WETLAND A** Date Evaluated: **9/16/2019**
 Wetland area (acres) **0.54** Evaluated by: **R. Van de Poll**
 Watershed area (acres) **15.62**

11. Fish or aquatic life that is rare, threatened, endangered or species of conservation concern?	0.0	Documented occurrence in or near wetland	Documented occurrence within 1/2 mi. & suitable habitat	No documented occurrence in 1/2 mi. but suitable habitat	No occurrence & no suitable habitat	
Average Score - Fish & Aquatic Habitat 2.5						

4. SCENIC QUALITY	Score	10	5	1	0	Notes
1. Wetland vegetation classes visible?	5.0	≥ 3 classes	2 classes	1 class		
2. Public access?	1.0	Public access & trails/road	Public access; no trails	No public access		
3. Visible extent across wetland?	1.0	Large expanse	Somewhat restricted view	Forested; limited view		
4. Open water visible?	1.0	> 3 acres	1-3 acres	< 1 acre		
5. Visual contrast with landscape?	1.0	High level of contrast	Some visual contrast	Little contrast or developed		
6. General appearance of wetland?	5.0	Undisturbed & natural	Minor visual detractors	Severe visual detractors		gravel pit equipment view from Old New Ipswich Rd
Average Score - Scenic Quality 2.3						

5. EDUCATIONAL POTENTIAL	Score	10	5	1	0	Notes
1. Ecological Integrity Score?	4.9					
2. Wildlife Habitat Score?	4.9					
3. Fish & Aquatic Habitat Score?	2.5					
4. Public access?	1.0	Public access & trails/road	Public access; no trails	No public access		
5. Adequate parking for 10-15 cars or bus?	10.0	< 5 mins from site	5-15 min walk from site or parking limited	> 15 mins walk / limited parking		if gate was opened
6. Wetland vegetation classes accessible?	5.0	≥ 3 classes	2 classes	1 class		
7. Access to perennial stream / pond?	0.0	Direct water access	Access 5 mins or less	Limited/no access	No open water	
8. Scenic Quality Score?	2.3					
9. Disabled access	0.0	Yes			No	
Average Score - Education 3.4						

6. WETLAND RECREATION	Score	10	5	1	0	Notes
1. Wildlife Habitat Score?	4.9					
2. Open water access (canoes & kayaks)?	0.0	Open water & easy access	open water; limited access	Open water but no access	No open water	
3. Trails-based recreation?	5.0	Maintained trails present	Trails but not maintained	No trails		
4. Off-trail recreation opportunities?	5.0	Open water > .5 acre, and undisturbed buffer ≥ 75% of edge	Open water > .5 acre, or undisturbed buffer ≥ 75% of edge	Neither open water > .5 acre, or undisturbed buffer	No trails	
5. Off-road parking for two or more cars?	10.0	< 5 mins walk from site	5-10 min walk from site	> 10 mins walk/no parking	No access to site	
6. Scenic Quality Score?	2.3					
Average Score - Wetland Recreation 4.5						

7. FLOOD WATER STORAGE	Score	10	5	1	0	Notes
Use separate Flood Storage Index worksheet Field work is not needed for this function						

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code	WETLAND A	Date Evaluated:	9/16/2019
Wetland area (acres)	0.54	Evaluated by:	R. Van de Poll
Watershed area (acres)	15.62		

Average Score - Flood Storage	1.7					
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8. GROUNDWATER	Score	10	5	1	0	Notes
1. Stratified drift aquifer beneath wetland?	1.0	Wetland overlies aquifer	Aquifer within 1/4 mile	Aquifer >1/4 mile of wetland		
2. Public water supply area?	1.0	Wetland in Favorable Gravel Well area	Wetland within 1/4 mile of Favorable Gravel Well area	Wetland > 1/4 mile of Favorable Gravel Well area		
3. Public wellhead protection area (WHPA)?	1.0	>75% of WHPA includes wetland	25%-75% of WHPA includes wetland	<25% of WHPA includes wetland		
4. Percent cover of highly permeable soils within 100 ft.?	1.0	> 50% of Table 3 soils	25-50% of Table 3 soils	< 25% of Table 3 soils		
5. Percent cover of highly permeable soils WITHIN the wetland	1.0	> 50% of Table 4 soils	25-50% of Table 4 soils	< 25% of Table 4 soils		

Average Score - Groundwater 1.0

9. SEDIMENT TRAPPING	Score	10	5	1	0	Notes
1. Flood Storage Score?	1.7					
2. Wetland outlet?	10.0	No outlet or outlet is constricted or outlet is ponded	Outlet not constricted but primary flow through wetland is sheet flow.	Primary flow through wetland is in the channel.		
3. Character of water flow through the wetland?	7.5	No stream channel OR inlet but no outlet OR outlet impounded OR inlet&outlet and sinuosity >1.5	Channel sinuosity is <1.5 and >1.0	Straight channel - sinuosity = 1.0 and no impoundments		small stream channel at outflow
4. Wetland to watershed size ratio?	5.0	Wetland > 10% of watershed	Wetland 1-10% of watershed	Wetland <1% of watershed		
5. Gradient of wetland?	5.0	Gradient < 0.5% or no outlet	Gradient 0.5-3%	Gradient > 3%		
6. Areal extent (% coverage) of vegetation	10.0	Persistent emergent, forested scrub-shrub, bogs >90%	Persistent & nonpersistent emergents, trees, shrubs 50-90%	Persistent & nonpersistent emergents, trees, shrubs <50%		
7. Avg. water depth in growing season?	10.0	< 1 ft. deep or no open water	> 1 ft. deep and < 6.6 ft. deep	> 6.6 ft. deep		

Average Score - Sediment Trapping 7.0

10. NUTRIENTS	Score	10	5	1	0	Notes
1. Flood Storage Score?	1.7					
2. Sediment Trapping Score?	7.0					
3. % vegetation cover (use F9, Q6)	10.0					
4. Hydroperiod?	10.0	Semipermanent or seasonal flooding or saturated	Seasonally or temporarily flooded	Permanent flooding or intermittently exposed		
5. Dominant soils in wetland?	10.0	Fine-textured soils (Table in Appendix D)	Organic and/or peat soils (Table in Appendix D)	Sands and gravels (Table in Appendix D)		

Average Score - Nutrients 7.7

11. SHORELINE ANCHORING	Score	10	5	1	0	Notes
1. Gradation of wetland vegetation?	5.0	≥ 3 vegetation classes	2 wetland classes	1 wetland class		

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code *WETLAND A*
Wetland area (acres) *0.54*
Watershed area (acres) *15.62*

Date Evaluated: *9/16/2019*
Evaluated by: *R. Van de Poll*

2. Vegetation density in wetland?	5.0	> 90% cover	70-90% cover	< 70% cover		
3. Width of wetland along water body?	1.0	> 20 ft.	10-20 ft.	< 10 ft.		
4. Substrate "roughness" of wetland?	2.5	Many boulders, stones, cobbles	Few stones, mostly sand & gravel	Smooth, mostly silts & fine sands or organic material		
Average Score - Shoreline Anchoring 3.4						

12. NOTEWORTHINESS		10			0	Notes
1. Wetland within 500ft of Highest Ranked Habitat (NH WAP)?		YES			NO	
2. Local significance, high scores, largest		YES			NO	
3. Local or regional or statewide significance?		YES			NO	
4. Known rare/unique biological or geological features		YES			NO	
5. Documented historic/archaeological site?	10.0	YES			NO	cellar hole & root cellar part of wetland
6. Connected to designated river?		YES			NO	
7. Wetland in urban setting?		YES			NO	
Average Score - Noteworthiness 10.0						

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code **WETLAND B**
 Wetland area (acres) **0.34**
 Watershed area (acres) **28.2**

Date Evaluated: 9/16/2019
 Evaluated by: R. Van de Poll

Do not enter data into cells highlighted in blue. These cells contain formulas that automatically carry data over from function to function, or total and average functional scores.

1. ECOLOGICAL INTEGRITY	Score	10	5	1	0	Notes
1. Land uses in watershed that degrade water quality?	10.0	<5% of watershed with such land uses	5-10% of watershed with such land uses	>10% of watershed with such land uses		
2. Fill in Wetland?	1.0	Less than 1%	1-3%	>3%		
3. Agriculture in wetland?	1.0	Less than 5%	5-25%	> 25%		Wetland created by past ag activities
4. Logging activity in wetland?	10.0	Less than 1%	1-10%	> 10%		
5. Human activity in wetland?	1.0	Low	Moderate	High		
6. Invasive plants in wetland?	1.0	<1%	1-5%	> 5%		
7. Road/driveway/railroad crossings?	1.0	None	within 500ft of wetland	adjacent to or crossing wetland		
8. Human activity within 500 ft?	1.0	Little or None	evident in up to 25% of 500 ft zone	evident in more than 25% of 500 ft zone		
9. % impervious surface within 500 ft.?	1.0	< 3%	3-10%	>10%		
10. Structure regulating water flow?	1.0	None	Slight modification	Severe modification		ditched
Average Score - Ecological Integrity		2.8				

2. WETLAND WILDLIFE HABITAT	Score	10	5	1	0	Notes
1. Wetland acres?	1.0	> 100 acres	20-100 acres	<20 acres		
2. Ecological Integrity Avg. score?	2.8					
3. Water quality (Use F1, Q1 score)?	10.0					
4. Open water < 6.6ft deep?	1.0	> 3 acres	0.5 - 3 acres	< 0.5 acre		
5. Deepwater Habitats?	1.0	stream $\geq$ 1 mile and/or lake/pond >10 acres	stream < 1 mile and/or lake/pond <10 acres	No deepwater		
6. Wetland vegetation class diversity?	1.0	3 or more classes	2 classes	1 class		
7. Proximity to other wetlands?	10.0	connected/unconnected within 0.25 mile	connected 0.5-1mi. or unconnected 0.25-0.5 mi.	Not connected within 1 mile or > 0.5 mi. from unconnected		
8. Wildlife travel corridors?	5.0	Free access	Access partially blocked	Access blocked		
9. % of wetland edge undisturbed?	1.0	>95%	75-95%	< 75%		
10. Invasive plants (Use F1, Q6 score)	1.0					
Average Score - Wildlife Habitat		3.4				

3. FISH & AQUATIC HABITAT	Score	10	5	1	0	Notes
1. Dominant land use in watershed?	10.0	Woodland, wetland, inactive farmland	Active farm/rural res	Heavily developed residential, commercial, industrial		
2. Water Quality? (use F1, Q1 score)	10.0					
3. Open water?(use F2, Q4 score)	1.0					
4. Deepwater habitats > 6.6 ft. deep?	0.0	> 100 acres	10-100 acres	< 10 acres	Not present	
5. Stream width in wetland?	0.0	> 50 ft.	25-50 ft.	< 25 ft.	Not present	
6. Alteration of stream channel?	0.0	Natural channel / low gradient or steep gradient w/ riffles	Recently modified or formerly channelized	Recently channelized or stream in non-vegetated chute/pipe	Not present	
7. Diversity of substrate types?	1.0	4 or more substrates	2-3 substrates	1 substrate		
8. Coarse woody material and large rocks?	1.0	> 10% of cover in water	< 10% of cover in water	No visible cover		
9. Floating & submerged vegetation?	1.0	> 70% cover in water	30-70% cover in water	< 30% cover		

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code **WETLAND B** Date Evaluated: 9/16/2019
 Wetland area (acres) **0.34** Evaluated by: R. Van de Poll
 Watershed area (acres) **28.2**

10. Artificial Barriers to aquatic life?	0.0	No barriers	Artificial barrier with provision for passage	Barrier with no provision for passage	No stream	
11. Fish or aquatic life that is rare, threatened, endangered or species of conservation concern?	0.0	Documented occurrence in or near wetland	Documented occurrence within 1/2 mi. & suitable habitat	No documented occurrence in 1/2 mi. but suitable habitat	No occurrence & no suitable habitat	
Average Score - Fish & Aquatic Habitat 2.2						

4. SCENIC QUALITY	Score	10	5	1	0	Notes
1. Wetland vegetation classes visible?		≥ 3 classes	2 classes	1 class		
2. Public access?		Public access & trails/road	Public access; no trails	No public access		
3. Visible extent across wetland?		Large expanse	Somewhat restricted view	Forested; limited view		
4. Open water visible?		> 3 acres	1-3 acres	< 1 acre		
5. Visual contrast with landscape?		High level of contrast	Some visual contrast	Little contrast or developed		
6. General appearance of wetland?		Undisturbed & natural	Minor visual detractors	Severe visual detractors		
Average Score - Scenic Quality 0.0						

5. EDUCATIONAL POTENTIAL	Score	10	5	1	0	Notes
1. Ecological Integrity Score?	2.8					
2. Wildlife Habitat Score?	3.4					
3. Fish & Aquatic Habitat Score?	2.2					
4. Public access?		Public access & trails/road	Public access; no trails	No public access		
5. Adequate parking for 10-15 cars or bus?		< 5 mins from site	5-15 min walk from site or parking limited	> 15 mins walk / limited parking		
6. Wetland vegetation classes accessible?		≥ 3 classes	2 classes	1 class		
7. Access to perennial stream / pond?		Direct water access	Access 5 mins or less	Limited/no access	No open water	
8. Scenic Quality Score?	0.0					
9. Disabled access		Yes			No	
Average Score - Education 0.9						

6. WETLAND RECREATION	Score	10	5	1	0	Notes
1. Wildlife Habitat Score?	3.4					
2. Open water access (canoes & kayaks)?		Open water & easy access	open water; limited access	Open water but no access	No open water	
3. Trails-based recreation?		Maintained trails present	Trails but not maintained	No trails		
4. Off-trail recreation opportunities?		Open water > .5 acre, and undisturbed buffer ≥ 75% of edge	Open water > .5 acre, or undisturbed buffer ≥ 75% of edge	Neither open water > .5 acre, or undisturbed buffer	No trails	
5. Off-road parking for two or more cars?		< 5 mins walk from site	5-10 min walk from site	> 10 mins walk/no parking	No access to site	
6. Scenic Quality Score?	0.0					
Average Score - Wetland Recreation 0.6						

7. FLOOD WATER STORAGE	Score	10	5	1	0	Notes
Use separate Flood Storage						

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code *WETLAND B* Date Evaluated: 9/16/2019
 Wetland area (acres) 0.34 Evaluated by: R. Van de Poll

Watershed area (acres) 28.2

Index worksheet

Field work is not needed for this function

Average Score - Flood Storage

0.8

8. GROUNDWATER	Score	10	5	1	0	Notes
1. Stratified drift aquifer beneath wetland?	1.0	Wetland overlies aquifer	Aquifer within 1/4 mile	Aquifer > 1/4 mile of wetland		
2. Public water supply area?	1.0	Wetland in Favorable Gravel Well area	Wetland within 1/4 mile of Favorable Gravel Well area	Wetland > 1/4 mile of Favorable Gravel Well area		
3. Public wellhead protection area (WHPA)?	1.0	>75% of WHPA includes wetland	25%-75% of WHPA includes wetland	<25% of WHPA includes wetland		
4. Percent cover of highly permeable soils within 100 ft.?	1.0	> 50% of Table 3 soils	25-50% of Table 3 soils	< 25% of Table 3 soils		
5. Percent cover of highly permeable soils WITHIN the wetland	1.0	> 50% of Table 4 soils	25-50% of Table 4 soils	< 25% of Table 4 soils		

Average Score - Groundwater

1.0

9. SEDIMENT TRAPPING	Score	10	5	1	0	Notes
1. Flood Storage Score?	0.8					
2. Wetland outlet?		No outlet or outlet is constricted or outlet is ponded	Outlet not constricted but primary flow through wetland is sheet flow.	Primary flow through wetland is in the channel.		
3. Character of water flow through the wetland?		No stream channel OR inlet but no outlet OR outlet impounded OR inlet&outlet and sinuosity >1.5	Channel sinuosity is <1.5 and >1.0	Straight channel - sinuosity = 1.0 and no impoundments		
4. Wetland to watershed size ratio?		Wetland > 10% of watershed	Wetland 1-10% of watershed	Wetland <1% of watershed		
5. Gradient of wetland?		Gradient < 0.5% or no outlet	Gradient 0.5-3%	Gradient > 3%		
6. Areal extent (% coverage) of vegetation		Persistent emergent, forested scrub-shrub, bogs >90%	Persistent & nonpersistent emergents, trees, shrubs 50-90%	Persistent & nonpersistent emergents, trees, shrubs <50%		
7. Avg. water depth in growing season?		< 1 ft. deep or no open water	> 1 ft. deep and < 6.6 ft. deep	> 6.6 ft. deep		

Average Score - Sediment Trapping

0.1

10. NUTRIENTS	Score	10	5	1	0	Notes
1. Flood Storage Score?	0.8					
2. Sediment Trapping Score?	0.1					
3. % vegetation cover (use F9, Q6)	0.0					
4. Hydroperiod?	10.0	Semipermanent or seasonal flooding or saturated	Seasonally or temporarily flooded	Permanent flooding or intermittently exposed		
5. Dominant soils in wetland?	10.0	Fine-textured soils (Table in Appendix D)	Organic and/or peat soils (Table in Appendix D)	Sands and gravels (Table in Appendix D)		

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code	WETLAND B	Date Evaluated:	9/16/2019
Wetland area (acres)	0.34	Evaluated by:	R. Van de Poll
Watershed area (acres)	28.2		
Average Score - Nutrients	4.2		

11. SHORELINE ANCHORING	10	5	1	0	Notes
1. Gradation of wetland vegetation?	≥ 3 vegetation classes	2 wetland classes	1 wetland class		
2. Vegetation density in wetland?	> 90% cover	70-90% cover	< 70% cover		
3. Width of wetland along water body?	> 20 ft.	10-20 ft.	< 10 ft.		
4. Substrate "roughness" of wetland?	Many boulders, stones, cobbles	Few stones, mostly sand & gravel	Smooth, mostly silts & fine sands or organic material		

Average Score - Shoreline Anchoring 0.0

12. NOTEWORTHINESS	10			0	Notes
1. Wetland within 500ft of Highest Ranked Habitat (NH WAP)?	YES			NO	
2. Local significance, high scores, largest	YES			NO	
3. Local or regional or statewide significance?	YES			NO	
4. Known rare/unique biological or geological features	YES			NO	
5. Documented historic/archaeological site?	YES			NO	
6. Connected to designated river?	YES			NO	
7. Wetland in urban setting?	YES			NO	

Average Score - Noteworthiness 0.0

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code **WETLAND C**
 Wetland area (acres) **0.53**
 Watershed area (acres) **2.83**

Date Evaluated: 9/16/2019
 Evaluated by: R. Van de Poll

Do not enter data into cells highlighted in blue. These cells contain formulas that automatically carry data over from function to function, or total and average functional scores.

1. ECOLOGICAL INTEGRITY	Score	10	5	1	0	Notes
1. Land uses in watershed that degrade water quality?	10.0	<5% of watershed with such land uses	5-10% of watershed with such land uses	>10% of watershed with such land uses		
2. Fill in Wetland?		Less than 1%	1-3%	>3%		dredge & fill areas by ATV's
3. Agriculture in wetland?		Less than 5%	5-25%	> 25%		
4. Logging activity in wetland?		Less than 1%	1-10%	> 10%		
5. Human activity in wetland?		Low	Moderate	High		
6. Invasive plants in wetland?		<1%	1-5%	> 5%		
7. Road/driveway/railroad crossings?		None	within 500ft of wetland	adjacent to or crossing wetland		
8. Human activity within 500 ft?		Little or None	evident in up to 25% of 500 ft zone	evident in more than 25% of 500 ft zone		
9. % impervious surface within 500 ft.?		< 3%	3-10%	>10%		
10. Structure regulating water flow?		None	Slight modification	Severe modification		
Average Score - Ecological Integrity		1.0				

2. WETLAND WILDLIFE HABITAT	Score	10	5	1	0	Notes
1. Wetland acres?	1.0	> 100 acres	20-100 acres	<20 acres		
2. Ecological Integrity Avg. score?	1.0					
3. Water quality (Use F1, Q1 score)?	10.0					
4. Open water < 6.6ft deep?	1.0	> 3 acres	0.5 - 3 acres	< 0.5 acre		
5. Deepwater Habitats?	1.0	stream $\geq$ 1 mile and/or lake/pond >10 acres	stream < 1 mile and/or lake/pond <10 acres	No deepwater		
6. Wetland vegetation class diversity?		3 or more classes	2 classes	1 class		
7. Proximity to other wetlands?		connected/unconnected within 0.25 mile	connected 0.5-1mi. or unconnected 0.25-0.5 mi.	Not connected within 1 mile or > 0.5 mi. from unconnected		
8. Wildlife travel corridors?		Free access	Access partially blocked	Access blocked		
9. % of wetland edge undisturbed?		>95%	75-95%	< 75%		
10. Invasive plants (Use F1, Q6 score)	0.0					
Average Score - Wildlife Habitat		1.4				

3. FISH & AQUATIC HABITAT	Score	10	5	1	0	Notes
1. Dominant land use in watershed?	10.0	Woodland, wetland, inactive farmland	Active farm/rural res	Heavily developed residential, commercial, industrial		
2. Water Quality? (use F1, Q1 score)	10.0					
3. Open water?(use F2, Q4 score)	1.0					
4. Deepwater habitats > 6.6 ft. deep?	0.0	> 100 acres	10-100 acres	< 10 acres	Not present	
5. Stream width in wetland?	0.0	> 50 ft.	25-50 ft.	< 25 ft.	Not present	
6. Alteration of stream channel?	0.0	Natural channel / low gradient or steep gradient w/ riffles	Recently modified or formerly channelized	Recently channelized or stream in non-vegetated chute/pipe	Not present	
7. Diversity of substrate types?	1.0	4 or more substrates	2-3 substrates	1 substrate		
8. Coarse woody material and large rocks?	1.0	> 10% of cover in water	< 10% of cover in water	No visible cover		
9. Floating & submerged vegetation?	1.0	> 70% cover in water	30-70% cover in water	< 30% cover		

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code *WETLAND C*
 Wetland area (acres) **0.53**
 Watershed area (acres) **2.83**

Date Evaluated: 9/16/2019
 Evaluated by: R. Van de Poll

10. Artificial Barriers to aquatic life?	0.0	No barriers	Artificial barrier with provision for passage	Barrier with no provision for passage	No stream	
11. Fish or aquatic life that is rare, threatened, endangered or species of conservation concern?	0.0	Documented occurrence in or near wetland	Documented occurrence within 1/2 mi. & suitable habitat	No documented occurrence in 1/2 mi. but suitable habitat	No occurrence & no suitable habitat	
Average Score - Fish & Aquatic Habitat 2.2						

4. SCENIC QUALITY	Score	10	5	1	0	Notes
1. Wetland vegetation classes visible?		≥ 3 classes	2 classes	1 class		
2. Public access?		Public access & trails/road	Public access; no trails	No public access		
3. Visible extent across wetland?		Large expanse	Somewhat restricted view	Forested; limited view		
4. Open water visible?		> 3 acres	1-3 acres	< 1 acre		
5. Visual contrast with landscape?		High level of contrast	Some visual contrast	Little contrast or developed		
6. General appearance of wetland?		Undisturbed & natural	Minor visual detractors	Severe visual detractors		
Average Score - Scenic Quality 0.0						

5. EDUCATIONAL POTENTIAL	Score	10	5	1	0	Notes
1. Ecological Integrity Score?	1.0					
2. Wildlife Habitat Score?	1.4					
3. Fish & Aquatic Habitat Score?	2.2					
4. Public access?		Public access & trails/road	Public access; no trails	No public access		
5. Adequate parking for 10-15 cars or bus?		< 5 mins from site	5-15 min walk from site or parking limited	> 15 mins walk / limited parking		
6. Wetland vegetation classes accessible?		≥ 3 classes	2 classes	1 class		
7. Access to perennial stream / pond?		Direct water access	Access 5 mins or less	Limited/no access	No open water	
8. Scenic Quality Score?	0.0					
9. Disabled access		Yes			No	
Average Score - Education 0.5						

6. WETLAND RECREATION	Score	10	5	1	0	Notes
1. Wildlife Habitat Score?	1.4					
2. Open water access (canoes & kayaks)?		Open water & easy access	open water; limited access	Open water but no access	No open water	
3. Trails-based recreation?		Maintained trails present	Trails but not maintained	No trails		
4. Off-trail recreation opportunities?		Open water > .5 acre, and undisturbed buffer ≥ 75% of edge	Open water > .5 acre, or undisturbed buffer ≥ 75% of edge	Neither open water > .5 acre, or undisturbed buffer	No trails	
5. Off-road parking for two or more cars?		< 5 mins walk from site	5-10 min walk from site	> 10 mins walk/no parking	No access to site	
6. Scenic Quality Score?	0.0					
Average Score - Wetland Recreation 0.2						

7. FLOOD WATER STORAGE	Score	10	5	1	0	Notes
Use separate Flood Storage						

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code	WETLAND C	Date Evaluated:	9/16/2019		
Wetland area (acres)	0.53	Evaluated by:	R. Van de Poll		
Watershed area (acres)	2.83				
Index worksheet					
Field work is not needed for this function					
Average Score - Flood Storage	3.9				

8. GROUNDWATER	Score	10	5	1	0	Notes
1. Stratified drift aquifer beneath wetland?	1.0	Wetland overlies aquifer	Aquifer within 1/4 mile	Aquifer > 1/4 mile of wetland		
2. Public water supply area?	1.0	Wetland in Favorable Gravel Well area	Wetland within 1/4 mile of Favorable Gravel Well area	Wetland > 1/4 mile of Favorable Gravel Well area		
3. Public wellhead protection area (WHPA)?	1.0	>75% of WHPA includes wetland	25%-75% of WHPA includes wetland	<25% of WHPA includes wetland		
4. Percent cover of highly permeable soils within 100 ft.?	1.0	> 50% of Table 3 soils	25-50% of Table 3 soils	< 25% of Table 3 soils		
5. Percent cover of highly permeable soils WITHIN the wetland	1.0	> 50% of Table 4 soils	25-50% of Table 4 soils	< 25% of Table 4 soils		

Average Score - Groundwater	1.0
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9. SEDIMENT TRAPPING	Score	10	5	1	0	Notes
1. Flood Storage Score?	3.9					
2. Wetland outlet?		No outlet or outlet is constricted or outlet is ponded	Outlet not constricted but primary flow through wetland is sheet flow.	Primary flow through wetland is in the channel.		
3. Character of water flow through the wetland?		No stream channel OR inlet but no outlet OR outlet impounded OR inlet&outlet and sinuosity >1.5	Channel sinuosity is <1.5 and >1.0	Straight channel - sinuosity = 1.0 and no impoundments		
4. Wetland to watershed size ratio?		Wetland > 10% of watershed	Wetland 1-10% of watershed	Wetland <1% of watershed		
5. Gradient of wetland?		Gradient < 0.5% or no outlet	Gradient 0.5-3%	Gradient > 3%		
6. Areal extent (% coverage) of vegetation		Persistent emergent, forested scrub-shrub, bogs >90%	Persistent & nonpersistent emergents, trees, shrubs 50-90%	Persistent & nonpersistent emergents, trees, shrubs <50%		
7. Avg. water depth in growing season?		< 1 ft. deep or no open water	> 1 ft. deep and < 6.6 ft. deep	> 6.6 ft. deep		

Average Score - Sediment Trapping	0.6
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10. NUTRIENTS	Score	10	5	1	0	Notes
1. Flood Storage Score?	3.9					
2. Sediment Trapping Score?	0.6					
3. % vegetation cover (use F9, Q6)	0.0					
4. Hydroperiod?	10.0	Semipermanent or seasonal flooding or saturated	Seasonally or temporarily flooded	Permanent flooding or intermittently exposed		
5. Dominant soils in wetland?	10.0	Fine-textured soils (Table in Appendix D)	Organic and/or peat soils (Table in Appendix D)	Sands and gravels (Table in Appendix D)		

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code	WETLAND C	Date Evaluated:	9/16/2019
Wetland area (acres)	0.53	Evaluated by:	R. Van de Poll
Watershed area (acres)	2.83		
Average Score - Nutrients	4.9		

11. SHORELINE ANCHORING		10	5	1	0	Notes
1. Gradation of wetland vegetation?		≥ 3 vegetation classes	2 wetland classes	1 wetland class		
2. Vegetation density in wetland?		> 90% cover	70-90% cover	< 70% cover		
3. Width of wetland along water body?		> 20 ft.	10-20 ft.	< 10 ft.		
4. Substrate "roughness" of wetland?		Many boulders, stones, cobbles	Few stones, mostly sand & gravel	Smooth, mostly silts & fine sands or organic material		

Average Score - Shoreline Anchoring 0.0

12. NOTEWORTHINESS		10			0	Notes
1. Wetland within 500ft of Highest Ranked Habitat (NH WAP)?		YES			NO	
2. Local significance, high scores, largest		YES			NO	
3. Local or regional or statewide significance?		YES			NO	
4. Known rare/unique biological or geological features		YES			NO	
5. Documented historic/archaeological site?		YES			NO	
6. Connected to designated river?		YES			NO	
7. Wetland in urban setting?		YES			NO	

Average Score - Noteworthiness 0.0

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code WETLAND D
 Wetland area (acres) 0.08
 Watershed area (acres) 2.03

Date Evaluated: 9/16/2019
 Evaluated by: R. Van de Poll

Do not enter data into cells highlighted in blue. These cells contain formulas that automatically carry data over from function to function, or total and average functional scores.

1. ECOLOGICAL INTEGRITY	Score	10	5	1	0	Notes
1. Land uses in watershed that degrade water quality?	10.0	<5% of watershed with such land uses	5-10% of watershed with such land uses	>10% of watershed with such land uses		
2. Fill in Wetland?		Less than 1%	1-3%	>3%		>1% fill/dredge at P/L access rd
3. Agriculture in wetland?		Less than 5%	5-25%	> 25%		
4. Logging activity in wetland?		Less than 1%	1-10%	> 10%		
5. Human activity in wetland?		Low	Moderate	High		
6. Invasive plants in wetland?		<1%	1-5%	> 5%		
7. Road/driveway/railroad crossings?		None	within 500ft of wetland	adjacent to or crossing wetland		
8. Human activity within 500 ft?		Little or None	evident in up to 25% of 500 ft zone	evident in more than 25% of 500 ft zone		
9. % impervious surface within 500 ft.?		< 3%	3-10%	>10%		
10. Structure regulating water flow?		None	Slight modification	Severe modification		
Average Score - Ecological Integrity		1.0				

2. WETLAND WILDLIFE HABITAT	Score	10	5	1	0	Notes
1. Wetland acres?	1.0	> 100 acres	20-100 acres	<20 acres		
2. Ecological Integrity Avg. score?	1.0					
3. Water quality (Use F1, Q1 score)?	10.0					
4. Open water < 6.6ft deep?	1.0	> 3 acres	0.5 - 3 acres	< 0.5 acre		
5. Deepwater Habitats?	1.0	stream ≥ 1 mile and/or lake/pond >10 acres	stream < 1 mile and/or lake/pond <10 acres	No deepwater		
6. Wetland vegetation class diversity?		3 or more classes	2 classes	1 class		
7. Proximity to other wetlands?		connected/unconnected within 0.25 mile	connected 0.5-1mi. or unconnected 0.25-0.5 mi.	Not connected within 1 mile or > 0.5 mi. from unconnected		
8. Wildlife travel corridors?		Free access	Access partially blocked	Access blocked		
9. % of wetland edge undisturbed?		>95%	75-95%	< 75%		
10. Invasive plants (Use F1, Q6 score)	0.0					
Average Score - Wildlife Habitat		1.4				

3. FISH & AQUATIC HABITAT	Score	10	5	1	0	Notes
1. Dominant land use in watershed?	10.0	Woodland, wetland, inactive farmland	Active farm/rural res	Heavily developed residential, commercial, industrial		
2. Water Quality? (use F1, Q1 score)	10.0					
3. Open water?(use F2, Q4 score)	1.0					
4. Deepwater habitats > 6.6 ft. deep?	0.0	> 100 acres	10-100 acres	< 10 acres	Not present	
5. Stream width in wetland?	0.0	> 50 ft.	25-50 ft.	< 25 ft.	Not present	
6. Alteration of stream channel?	0.0	Natural channel / low gradient or steep gradient w/ riffles	Recently modified or formerly channelized	Recently channelized or stream in non-vegetated chute/pipe	Not present	
7. Diversity of substrate types?	1.0	4 or more substrates	2-3 substrates	1 substrate		
8. Coarse woody material and large rocks?	1.0	> 10% of cover in water	< 10% of cover in water	No visible cover		
9. Floating & submerged vegetation?	1.0	> 70% cover in water	30-70% cover in water	< 30% cover		

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code *WETLAND D*
 Wetland area (acres) **0.08**
 Watershed area (acres) **2.03**

Date Evaluated: 9/16/2019
 Evaluated by: R. Van de Poll

10. Artificial Barriers to aquatic life?	0.0	No barriers	Artificial barrier with provision for passage	Barrier with no provision for passage	No stream	
11. Fish or aquatic life that is rare, threatened, endangered or species of conservation concern?	0.0	Documented occurrence in or near wetland	Documented occurrence within 1/2 mi. & suitable habitat	No documented occurrence in 1/2 mi. but suitable habitat	No occurrence & no suitable habitat	
Average Score - Fish & Aquatic Habitat 2.2						

4. SCENIC QUALITY	Score	10	5	1	0	Notes
1. Wetland vegetation classes visible?		≥ 3 classes	2 classes	1 class		
2. Public access?		Public access & trails/road	Public access; no trails	No public access		
3. Visible extent across wetland?		Large expanse	Somewhat restricted view	Forested; limited view		
4. Open water visible?		> 3 acres	1-3 acres	< 1 acre		
5. Visual contrast with landscape?		High level of contrast	Some visual contrast	Little contrast or developed		
6. General appearance of wetland?		Undisturbed & natural	Minor visual detractors	Severe visual detractors		

Average Score - Scenic Quality **0.0**

5. EDUCATIONAL POTENTIAL	Score	10	5	1	0	Notes
1. Ecological Integrity Score?	1.0					
2. Wildlife Habitat Score?	1.4					
3. Fish & Aquatic Habitat Score?	2.2					
4. Public access?		Public access & trails/road	Public access; no trails	No public access		
5. Adequate parking for 10-15 cars or bus?		< 5 mins from site	5-15 min walk from site or parking limited	> 15 mins walk / limited parking		
6. Wetland vegetation classes accessible?		≥ 3 classes	2 classes	1 class		
7. Access to perennial stream / pond?		Direct water access	Access 5 mins or less	Limited/no access	No open water	
8. Scenic Quality Score?	0.0					
9. Disabled access		Yes			No	

Average Score - Education **0.5**

6. WETLAND RECREATION	Score	10	5	1	0	Notes
1. Wildlife Habitat Score?	1.4					
2. Open water access (canoes & kayaks)?		Open water & easy access	open water; limited access	Open water but no access	No open water	
3. Trails-based recreation?		Maintained trails present	Trails but not maintained	No trails		
4. Off-trail recreation opportunities?		Open water > .5 acre, and undisturbed buffer ≥ 75% of edge	Open water > .5 acre, or undisturbed buffer ≥ 75% of edge	Neither open water > .5 acre, or undisturbed buffer	No trails	
5. Off-road parking for two or more cars?		< 5 mins walk from site	5-10 min walk from site	> 10 mins walk/no parking	No access to site	
6. Scenic Quality Score?	0.0					

Average Score - Wetland Recreation **0.2**

7. FLOOD WATER STORAGE	Score	10	5	1	0	Notes
Use separate Flood Storage						

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code	WETLAND D	Date Evaluated:	9/16/2019			
Wetland area (acres)	0.08	Evaluated by:	R. Van de Poll			
Watershed area (acres)	2.03					
Index worksheet						
Field work is not needed for this function						
Average Score - Flood Storage	1.8					

8. GROUNDWATER	Score	10	5	1	0	Notes
1. Stratified drift aquifer beneath wetland?	1.0	Wetland overlies aquifer	Aquifer within 1/4 mile	Aquifer >1/4 mile of wetland		
2. Public water supply area?	1.0	Wetland in Favorable Gravel Well area	Wetland within 1/4 mile of Favorable Gravel Well area	Wetland > 1/4 mile of Favorable Gravel Well area		
3. Public wellhead protection area (WHPA)?	1.0	>75% of WHPA includes wetland	25%-75% of WHPA includes wetland	<25% of WHPA includes wetland		
4. Percent cover of highly permeable soils within 100 ft.?	1.0	> 50% of Table 3 soils	25-50% of Table 3 soils	< 25% of Table 3 soils		
5. Percent cover of highly permeable soils WITHIN the wetland	1.0	> 50% of Table 4 soils	25-50% of Table 4 soils	< 25% of Table 4 soils		

Average Score - Groundwater	1.0					
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9. SEDIMENT TRAPPING	Score	10	5	1	0	Notes
1. Flood Storage Score?	1.8					
2. Wetland outlet?		No outlet or outlet is constricted or outlet is ponded	Outlet not constricted but primary flow through wetland is sheet flow.	Primary flow through wetland is in the channel.		
3. Character of water flow through the wetland?		No stream channel OR inlet but no outlet OR outlet impounded OR inlet&outlet and sinuosity >1.5	Channel sinuosity is <1.5 and >1.0	Straight channel - sinuosity = 1.0 and no impoundments		
4. Wetland to watershed size ratio?		Wetland > 10% of watershed	Wetland 1-10% of watershed	Wetland <1% of watershed		
5. Gradient of wetland?		Gradient < 0.5% or no outlet	Gradient 0.5-3%	Gradient > 3%		
6. Areal extent (% coverage) of vegetation		Persistent emergent, forested scrub-shrub, bogs >90%	Persistent & nonpersistent emergents, trees, shrubs 50-90%	Persistent & nonpersistent emergents, trees, shrubs <50%		
7. Avg. water depth in growing season?		< 1 ft. deep or no open water	> 1 ft. deep and < 6.6 ft. deep	> 6.6 ft. deep		

Average Score - Sediment Trapping	0.3					
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10. NUTRIENTS	Score	10	5	1	0	Notes
1. Flood Storage Score?	1.8					
2. Sediment Trapping Score?	0.3					
3. % vegetation cover (use F9, Q6)	0.0					
4. Hydroperiod?	10.0	Semipermanent or seasonal flooding or saturated	Seasonally or temporarily flooded	Permanent flooding or intermittently exposed		
5. Dominant soils in wetland?	10.0	Fine-textured soils (Table in Appendix D)	Organic and/or peat soils (Table in Appendix D)	Sands and gravels (Table in Appendix D)		

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code	WETLAND D	Date Evaluated:	9/16/2019
Wetland area (acres)	0.08	Evaluated by:	R. Van de Poll
Watershed area (acres)	2.03		
Average Score - Nutrients	4.4		

11. SHORELINE ANCHORING	10	5	1	0	Notes
1. Gradation of wetland vegetation?	≥ 3 vegetation classes	2 wetland classes	1 wetland class		
2. Vegetation density in wetland?	> 90% cover	70-90% cover	< 70% cover		
3. Width of wetland along water body?	> 20 ft.	10-20 ft.	< 10 ft.		
4. Substrate "roughness" of wetland?	Many boulders, stones, cobbles	Few stones, mostly sand & gravel	Smooth, mostly silts & fine sands or organic material		

Average Score - Shoreline Anchoring 0.0

12. NOTEWORTHINESS	10			0	Notes
1. Wetland within 500ft of Highest Ranked Habitat (NH WAP)?	YES			NO	
2. Local significance, high scores, largest	YES			NO	
3. Local or regional or statewide significance?	YES			NO	
4. Known rare/unique biological or geological features	YES			NO	
5. Documented historic/archaeological site?	YES			NO	
6. Connected to designated river?	YES			NO	
7. Wetland in urban setting?	YES			NO	

Average Score - Noteworthiness 0.0

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code **WETLAND E** Date Evaluated: 9/16/2019
Wetland area (acres) **0.26** Evaluated by: R. Van de Poll
Watershed area (acres) **1.73**

Do not enter data into cells highlighted in blue. These cells contain formulas that automatically carry data over from function to function, or total and average functional scores.

1. ECOLOGICAL INTEGRITY	Score	10	5	1	0	Notes
1. Land uses in watershed that degrade water quality?	10.0	<5% of watershed with such land uses	5-10% of watershed with such land uses	>10% of watershed with such land uses		exposed gravel pit with old equipment
2. Fill in Wetland?		Less than 1%	1-3%	>3%		
3. Agriculture in wetland?		Less than 5%	5-25%	> 25%		
4. Logging activity in wetland?		Less than 1%	1-10%	> 10%		
5. Human activity in wetland?		Low	Moderate	High		
6. Invasive plants in wetland?		<1%	1-5%	> 5%		
7. Road/driveway/railroad crossings?		None	within 500ft of wetland	adjacent to or crossing wetland		
8. Human activity within 500 ft?		Little or None	evident in up to 25% of 500 ft zone	evident in more than 25% of 500 ft zone		
9. % impervious surface within 500 ft.?		< 3%	3-10%	>10%		
10. Structure regulating water flow?		None	Slight modification	Severe modification		
Average Score - Ecological Integrity		1.0				

2. WETLAND WILDLIFE HABITAT	Score	10	5	1	0	Notes
1. Wetland acres?	1.0	> 100 acres	20-100 acres	<20 acres		
2. Ecological Integrity Avg. score?	1.0					
3. Water quality (Use F1, Q1 score)?	10.0					
4. Open water < 6.6ft deep?	1.0	> 3 acres	0.5 - 3 acres	< 0.5 acre		
5. Deepwater Habitats?	1.0	stream ≥ 1 mile and/or lake/pond >10 acres	stream < 1 mile and/or lake/pond <10 acres	No deepwater		
6. Wetland vegetation class diversity?		3 or more classes	2 classes	1 class		
7. Proximity to other wetlands?		connected/unconnected within 0.25 mile	connected 0.5-1mi. or unconnected 0.25-0.5 mi.	Not connected within 1 mile or > 0.5 mi. from unconnected		
8. Wildlife travel corridors?		Free access	Access partially blocked	Access blocked		
9. % of wetland edge undisturbed?		>95%	75-95%	< 75%		
10. Invasive plants (Use F1, Q6 score)	0.0					
Average Score - Wildlife Habitat		1.4				

3. FISH & AQUATIC HABITAT	Score	10	5	1	0	Notes
1. Dominant land use in watershed?	10.0	Woodland, wetland, inactive farmland	Active farm/rural res	Heavily developed residential, commercial, industrial		
2. Water Quality? (use F1, Q1 score)	10.0					
3. Open water?(use F2, Q4 score)	1.0					
4. Deepwater habitats > 6.6 ft. deep?	0.0	> 100 acres	10-100 acres	< 10 acres	Not present	
5. Stream width in wetland?	0.0	> 50 ft.	25-50 ft.	< 25 ft.	Not present	
6. Alteration of stream channel?	0.0	Natural channel / low gradient or steep gradient w/ riffles	Recently modified or formerly channelized	Recently channelized or stream in non-vegetated chute/pipe	Not present	
7. Diversity of substrate types?	1.0	4 or more substrates	2-3 substrates	1 substrate		
8. Coarse woody material and large rocks?	1.0	> 10% of cover in water	< 10% of cover in water	No visible cover		
9. Floating & submerged vegetation?	1.0	> 70% cover in water	30-70% cover in water	< 30% cover		

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code *WETLAND E* Date Evaluated: 9/16/2019
 Wetland area (acres) 0.26 Evaluated by: R. Van de Poll
 Watershed area (acres) 1.73

10. Artificial Barriers to aquatic life?	0.0	No barriers	Artificial barrier with provision for passage	Barrier with no provision for passage	No stream	
11. Fish or aquatic life that is rare, threatened, endangered or species of conservation concern?	0.0	Documented occurrence in or near wetland	Documented occurrence within 1/2 mi. & suitable habitat	No documented occurrence in 1/2 mi. but suitable habitat	No occurrence & no suitable habitat	
Average Score - Fish & Aquatic Habitat 2.2						

4. SCENIC QUALITY	Score	10	5	1	0	Notes
1. Wetland vegetation classes visible?		≥ 3 classes	2 classes	1 class		
2. Public access?		Public access & trails/road	Public access; no trails	No public access		
3. Visible extent across wetland?		Large expanse	Somewhat restricted view	Forested; limited view		
4. Open water visible?		> 3 acres	1-3 acres	< 1 acre		
5. Visual contrast with landscape?		High level of contrast	Some visual contrast	Little contrast or developed		
6. General appearance of wetland?		Undisturbed & natural	Minor visual detractors	Severe visual detractors		

Average Score - Scenic Quality 0.0

5. EDUCATIONAL POTENTIAL	Score	10	5	1	0	Notes
1. Ecological Integrity Score?	1.0					
2. Wildlife Habitat Score?	1.4					
3. Fish & Aquatic Habitat Score?	2.2					
4. Public access?		Public access & trails/road	Public access; no trails	No public access		
5. Adequate parking for 10-15 cars or bus?		< 5 mins from site	5-15 min walk from site or parking limited	> 15 mins walk / limited parking		
6. Wetland vegetation classes accessible?		≥ 3 classes	2 classes	1 class		
7. Access to perennial stream / pond?		Direct water access	Access 5 mins or less	Limited/no access	No open water	
8. Scenic Quality Score?	0.0					
9. Disabled access		Yes			No	

Average Score - Education 0.5

6. WETLAND RECREATION	Score	10	5	1	0	Notes
1. Wildlife Habitat Score?	1.4					
2. Open water access (canoes & kayaks)?		Open water & easy access	open water; limited access	Open water but no access	No open water	
3. Trails-based recreation?		Maintained trails present	Trails but not maintained	No trails		
4. Off-trail recreation opportunities?		Open water > .5 acre, and undisturbed buffer ≥ 75% of edge	Open water > .5 acre, or undisturbed buffer ≥ 75% of edge	Neither open water > .5 acre, or undisturbed buffer	No trails	
5. Off-road parking for two or more cars?		< 5 mins walk from site	5-10 min walk from site	> 10 mins walk/no parking	No access to site	
6. Scenic Quality Score?	0.0					

Average Score - Wetland Recreation 0.2

7. FLOOD WATER STORAGE	Score	10	5	1	0	Notes
Use separate Flood Storage						

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code	WETLAND E	Date Evaluated:	9/16/2019			
Wetland area (acres)	0.26	Evaluated by:	R. Van de Poll			
Watershed area (acres)	1.73					
Index worksheet						
Field work is not needed for this function						
Average Score - Flood Storage	3.7					

8. GROUNDWATER	Score	10	5	1	0	Notes
1. Stratified drift aquifer beneath wetland?	1.0	Wetland overlies aquifer	Aquifer within 1/4 mile	Aquifer >1/4 mile of wetland		
2. Public water supply area?	1.0	Wetland in Favorable Gravel Well area	Wetland within 1/4 mile of Favorable Gravel Well area	Wetland > 1/4 mile of Favorable Gravel Well area		
3. Public wellhead protection area (WHPA)?	1.0	>75% of WHPA includes wetland	25%-75% of WHPA includes wetland	<25% of WHPA includes wetland		
4. Percent cover of highly permeable soils within 100 ft.?	1.0	> 50% of Table 3 soils	25-50% of Table 3 soils	< 25% of Table 3 soils		
5. Percent cover of highly permeable soils WITHIN the wetland	1.0	> 50% of Table 4 soils	25-50% of Table 4 soils	< 25% of Table 4 soils		

Average Score - Groundwater	1.0					
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9. SEDIMENT TRAPPING	Score	10	5	1	0	Notes
1. Flood Storage Score?	3.7					
2. Wetland outlet?		No outlet or outlet is constricted or outlet is ponded	Outlet not constricted but primary flow through wetland is sheet flow.	Primary flow through wetland is in the channel.		
3. Character of water flow through the wetland?		No stream channel OR inlet but no outlet OR outlet impounded OR inlet&outlet and sinuosity >1.5	Channel sinuosity is <1.5 and >1.0	Straight channel - sinuosity = 1.0 and no impoundments		
4. Wetland to watershed size ratio?		Wetland > 10% of watershed	Wetland 1-10% of watershed	Wetland <1% of watershed		
5. Gradient of wetland?		Gradient < 0.5% or no outlet	Gradient 0.5-3%	Gradient > 3%		
6. Areal extent (% coverage) of vegetation		Persistent emergent, forested scrub-shrub, bogs >90%	Persistent & nonpersistent emergents, trees, shrubs 50-90%	Persistent & nonpersistent emergents, trees, shrubs <50%		
7. Avg. water depth in growing season?		< 1 ft. deep or no open water	> 1 ft. deep and < 6.6 ft. deep	> 6.6 ft. deep		

Average Score - Sediment Trapping	0.5					
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10. NUTRIENTS	Score	10	5	1	0	Notes
1. Flood Storage Score?	3.7					
2. Sediment Trapping Score?	0.5					
3. % vegetation cover (use F9, Q6)	0.0					
4. Hydroperiod?	10.0	Semipermanent or seasonal flooding or saturated	Seasonally or temporarily flooded	Permanent flooding or intermittently exposed		
5. Dominant soils in wetland?	10.0	Fine-textured soils (Table in Appendix D)	Organic and/or peat soils (Table in Appendix D)	Sands and gravels (Table in Appendix D)		

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code	WETLAND E	Date Evaluated:	9/16/2019
Wetland area (acres)	0.26	Evaluated by:	R. Van de Poll
Watershed area (acres)	1.73		
Average Score - Nutrients	4.9		

11. SHORELINE ANCHORING	10	5	1	0	Notes
1. Gradation of wetland vegetation?	≥ 3 vegetation classes	2 wetland classes	1 wetland class		
2. Vegetation density in wetland?	> 90% cover	70-90% cover	< 70% cover		
3. Width of wetland along water body?	> 20 ft.	10-20 ft.	< 10 ft.		
4. Substrate "roughness" of wetland?	Many boulders, stones, cobbles	Few stones, mostly sand & gravel	Smooth, mostly silts & fine sands or organic material		

Average Score - Shoreline Anchoring 0.0

12. NOTEWORTHINESS	10			0	Notes
1. Wetland within 500ft of Highest Ranked Habitat (NH WAP)?	YES			NO	
2. Local significance, high scores, largest	YES			NO	
3. Local or regional or statewide significance?	YES			NO	
4. Known rare/unique biological or geological features	YES			NO	
5. Documented historic/archaeological site?	YES			NO	
6. Connected to designated river?	YES			NO	
7. Wetland in urban setting?	YES			NO	

Average Score - Noteworthiness 0.0

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code WETLAND F
 Wetland area (acres) 0.78
 Watershed area (acres) 66.51

Date Evaluated: 9/16/2019
 Evaluated by: R. Van de Poll

Do not enter data into cells highlighted in blue. These cells contain formulas that automatically carry data over from function to function, or total and average functional scores.

1. ECOLOGICAL INTEGRITY	Score	10	5	1	0	Notes
1. Land uses in watershed that degrade water quality?		<5% of watershed with such land uses	5-10% of watershed with such land uses	>10% of watershed with such land uses		roads, houses & ag fields
2. Fill in Wetland?		Less than 1%	1-3%	>3%		at roadway
3. Agriculture in wetland?		Less than 5%	5-25%	> 25%		
4. Logging activity in wetland?		Less than 1%	1-10%	> 10%		
5. Human activity in wetland?		Low	Moderate	High		
6. Invasive plants in wetland?		<1%	1-5%	> 5%		
7. Road/driveway/railroad crossings?		None	within 500ft of wetland	adjacent to or crossing wetland		
8. Human activity within 500 ft?		Little or None	evident in up to 25% of 500 ft zone	evident in more than 25% of 500 ft zone		
9. % impervious surface within 500 ft.?		< 3%	3-10%	>10%		
10. Structure regulating water flow?		None	Slight modification	Severe modification		culvert under roadway
Average Score - Ecological Integrity		0.0				

2. WETLAND WILDLIFE HABITAT	Score	10	5	1	0	Notes
1. Wetland acres?	1.0	> 100 acres	20-100 acres	<20 acres		
2. Ecological Integrity Avg. score?	0.0					
3. Water quality (Use F1, Q1 score)?	0.0					
4. Open water < 6.6ft deep?	1.0	> 3 acres	0.5 - 3 acres	< 0.5 acre		beaver pond
5. Deepwater Habitats?	1.0	stream $\geq$ 1 mile and/or lake/pond >10 acres	stream < 1 mile and/or lake/pond <10 acres	No deepwater		
6. Wetland vegetation class diversity?		3 or more classes	2 classes	1 class		
7. Proximity to other wetlands?		connected/unconnected within 0.25 mile	connected 0.5-1mi. or unconnected 0.25-0.5 mi.	Not connected within 1 mile or > 0.5 mi. from unconnected		
8. Wildlife travel corridors?		Free access	Access partially blocked	Access blocked		
9. % of wetland edge undisturbed?		>95%	75-95%	< 75%		
10. Invasive plants (Use F1, Q6 score)	0.0					
Average Score - Wildlife Habitat		0.3				

3. FISH & AQUATIC HABITAT	Score	10	5	1	0	Notes
1. Dominant land use in watershed?	10.0	Woodland, wetland, inactive farmland	Active farm/rural res	Heavily developed residential, commercial, industrial		some rural residential
2. Water Quality? (use F1, Q1 score)	0.0					
3. Open water?(use F2, Q4 score)	1.0					
4. Deepwater habitats > 6.6 ft. deep?	0.0	> 100 acres	10-100 acres	< 10 acres	Not present	
5. Stream width in wetland?	0.0	> 50 ft.	25-50 ft.	< 25 ft.	Not present	
6. Alteration of stream channel?	0.0	Natural channel / low gradient or steep gradient w/ riffles	Recently modified or formerly channelized	Recently channelized or stream in non-vegetated chute/pipe	Not present	
7. Diversity of substrate types?	1.0	4 or more substrates	2-3 substrates	1 substrate		
8. Coarse woody material and large rocks?	1.0	> 10% of cover in water	< 10% of cover in water	No visible cover		in stream portion
9. Floating & submerged vegetation?	1.0	> 70% cover in water	30-70% cover in water	< 30% cover		in ponded portion

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code *WETLAND F*
 Wetland area (acres) **0.78**
 Watershed area (acres) **66.51**

Date Evaluated: 9/16/2019
 Evaluated by: R. Van de Poll

10. Artificial Barriers to aquatic life?	0.0	No barriers	Artificial barrier with provision for passage	Barrier with no provision for passage	No stream	
11. Fish or aquatic life that is rare, threatened, endangered or species of conservation concern?	0.0	Documented occurrence in or near wetland	Documented occurrence within 1/2 mi. & suitable habitat	No documented occurrence in 1/2 mi. but suitable habitat	No occurrence & no suitable habitat	Blanding's turtle in vicinity; pond present
Average Score - Fish & Aquatic Habitat 1.3						

4. SCENIC QUALITY	Score	10	5	1	0	Notes
1. Wetland vegetation classes visible?		≥ 3 classes	2 classes	1 class		
2. Public access?		Public access & trails/road	Public access; no trails	No public access		view at roadside
3. Visible extent across wetland?		Large expanse	Somewhat restricted view	Forested; limited view		
4. Open water visible?		> 3 acres	1-3 acres	< 1 acre		
5. Visual contrast with landscape?		High level of contrast	Some visual contrast	Little contrast or developed		
6. General appearance of wetland?		Undisturbed & natural	Minor visual detractors	Severe visual detractors		
Average Score - Scenic Quality 0.0						

5. EDUCATIONAL POTENTIAL	Score	10	5	1	0	Notes
1. Ecological Integrity Score?	0.0					
2. Wildlife Habitat Score?	0.3					
3. Fish & Aquatic Habitat Score?	1.3					
4. Public access?		Public access & trails/road	Public access; no trails	No public access		to property as a whole
5. Adequate parking for 10-15 cars or bus?		< 5 mins from site	5-15 min walk from site or parking limited	> 15 mins walk / limited parking		
6. Wetland vegetation classes accessible?		≥ 3 classes	2 classes	1 class		
7. Access to perennial stream / pond?		Direct water access	Access 5 mins or less	Limited/no access	No open water	
8. Scenic Quality Score?	0.0					
9. Disabled access		Yes			No	
Average Score - Education 0.2						

6. WETLAND RECREATION	Score	10	5	1	0	Notes
1. Wildlife Habitat Score?	0.3					
2. Open water access (canoes & kayaks)?		Open water & easy access	open water; limited access	Open water but no access	No open water	
3. Trails-based recreation?		Maintained trails present	Trails but not maintained	No trails		
4. Off-trail recreation opportunities?		Open water > .5 acre, and undisturbed buffer ≥ 75% of edge	Open water > .5 acre, or undisturbed buffer ≥ 75% of edge	Neither open water > .5 acre, or undisturbed buffer	No trails	
5. Off-road parking for two or more cars?		< 5 mins walk from site	5-10 min walk from site	> 10 mins walk/no parking	No access to site	1200 ft from gate
6. Scenic Quality Score?	0.0					
Average Score - Wetland Recreation 0.1						

7. FLOOD WATER STORAGE	Score	10	5	1	0	Notes
Use separate Flood Storage						

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code	WETLAND F	Date Evaluated:	9/16/2019			
Wetland area (acres)	0.78	Evaluated by:	R. Van de Poll			
Watershed area (acres)	66.51					
Index worksheet						
Field work is not needed for this function						
Average Score - Flood Storage	0.8					

8. GROUNDWATER	Score	10	5	1	0	Notes
1. Stratified drift aquifer beneath wetland?	1.0	Wetland overlies aquifer	Aquifer within 1/4 mile	Aquifer >1/4 mile of wetland		
2. Public water supply area?	1.0	Wetland in Favorable Gravel Well area	Wetland within 1/4 mile of Favorable Gravel Well area	Wetland > 1/4 mile of Favorable Gravel Well area		
3. Public wellhead protection area (WHPA)?	1.0	>75% of WHPA includes wetland	25%-75% of WHPA includes wetland	<25% of WHPA includes wetland		
4. Percent cover of highly permeable soils within 100 ft.?	1.0	> 50% of Table 3 soils	25-50% of Table 3 soils	< 25% of Table 3 soils		
5. Percent cover of highly permeable soils WITHIN the wetland	1.0	> 50% of Table 4 soils	25-50% of Table 4 soils	< 25% of Table 4 soils		

Average Score - Groundwater	1.0					
-----------------------------	-----	--	--	--	--	--

9. SEDIMENT TRAPPING	Score	10	5	1	0	Notes
1. Flood Storage Score?	0.8					
2. Wetland outlet?		No outlet or outlet is constricted or outlet is ponded	Outlet not constricted but primary flow through wetland is sheet flow.	Primary flow through wetland is in the channel.		some constriction at outlet
3. Character of water flow through the wetland?		No stream channel OR inlet but no outlet OR outlet impounded OR inlet&outlet and sinuosity >1.5	Channel sinuosity is <1.5 and >1.0	Straight channel - sinuosity = 1.0 and no impoundments		
4. Wetland to watershed size ratio?		Wetland > 10% of watershed	Wetland 1-10% of watershed	Wetland <1% of watershed		
5. Gradient of wetland?		Gradient < 0.5% or no outlet	Gradient 0.5-3%	Gradient > 3%		
6. Areal extent (% coverage) of vegetation		Persistent emergent, forested scrub-shrub, bogs >90%	Persistent & nonpersistent emergents, trees, shrubs 50-90%	Persistent & nonpersistent emergents, trees, shrubs <50%		
7. Avg. water depth in growing season?		< 1 ft. deep or no open water	> 1 ft. deep and < 6.6 ft. deep	> 6.6 ft. deep		

Average Score - Sediment Trapping	0.1					
-----------------------------------	-----	--	--	--	--	--

10. NUTRIENTS	Score	10	5	1	0	Notes
1. Flood Storage Score?	0.8					
2. Sediment Trapping Score?	0.1					
3. % vegetation cover (use F9, Q6)	0.0					
4. Hydroperiod?	10.0	Semipermanent or seasonal flooding or saturated	Seasonally or temporarily flooded	Permanent flooding or intermittently exposed		mostly seasonally flooded/saturated
5. Dominant soils in wetland?	10.0	Fine-textured soils (Table in Appendix D)	Organic and/or peat soils (Table in Appendix D)	Sands and gravels (Table in Appendix D)		

Lebanon Airport B Lot Wetland Assessment

VdP/EMC 2019

Wetland name/code	WETLAND F	Date Evaluated:	9/16/2019
Wetland area (acres)	0.78	Evaluated by:	R. Van de Poll
Watershed area (acres)	66.51		
Average Score - Nutrients	4.2		

11. SHORELINE ANCHORING	10	5	1	0	Notes
1. Gradation of wetland vegetation?	≥ 3 vegetation classes	2 wetland classes	1 wetland class		only 2 classes where stream lies
2. Vegetation density in wetland?	> 90% cover	70-90% cover	< 70% cover		
3. Width of wetland along water body?	> 20 ft.	10-20 ft.	< 10 ft.		
4. Substrate "roughness" of wetland?	Many boulders, stones, cobbles	Few stones, mostly sand & gravel	Smooth, mostly silts & fine sands or organic material		

Average Score - Shoreline Anchoring 0.0

12. NOTEWORTHINESS	10			0	Notes
1. Wetland within 500ft of Highest Ranked Habitat (NH WAP)?	YES			NO	
2. Local significance, high scores, largest	YES			NO	highest scores in 2 functions
3. Local or regional or statewide significance?	YES			NO	
4. Known rare/unique biological or geological features	YES			NO	
5. Documented historic/archaeological site?	YES			NO	
6. Connected to designated river?	YES			NO	
7. Wetland in urban setting?	YES			NO	

Average Score - Noteworthiness 0.0

3.0 Authorization Letter

**Ecosystem Management Consultants, LLC
c/o Rick Van de Poll, Ph.D.
30 No. Sandwich Rd.
Center Sandwich, NH 03227**

January 13, 2021

NH DES Wetlands Bureau
PO Box 95 29 Hazen Drive
Concord, NH 03301-0095

Re: Authorization to File Wetlands Application

To Whom it May Concern:

This letter is to authorize Rick Van de Poll, Ph.D., CWS #110 of Ecosystem Management Consultants to act as our agent in the submission of a wetlands permit application to the N.H. DES Wetlands Bureau, as well as all related activities in the completion of said permit at the property identified as the Lebanon Airport B Lot , Tax Map & Lot 159-4.

Sincerely;

DocuSigned by:

Shaun Mulholland

1/13/2021

Shaun Mulholland, City Manager
City of Lebanon
51 No. Park Street
Lebanon, NH 03766

CONFIDENTIAL – NH Dept. of Environmental Services review**Memo**

NH Natural Heritage Bureau
HB Datacheck Results Letter

To: Rick Van de Poll, Ecosystem Management Consultants
30 North Sandwich Road
Center Sandwich, NH 03227

From: Amy Lamb, NH Natural Heritage Bureau

Date: 10/22/2020 (valid for one year from this date)

Re: Review by NH Natural Heritage Bureau

NHB File ID: NHB20-3113

Town: Lebanon

Location: Tax Maps: 159-4

Description: Expansion of the Airport Industrial Park on City land next to the airport

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

Comments: Please address the potential for greater fringed-gentian to occur within the portion of the airfield that lies within the project area (as mapped below). Information can be sent to me at Amy.Lamb@dncr.nh.gov.

Plant species

	State ¹	Federal	Notes
greater fringed-gentian (<i>Gentianopsis crinita</i>)	T	--	Vulnerable to shading by invading trees and to disturbances that destroy plants or impede their ability to reproduce (such as mowing in the mid-summer while the plants are in bloom).

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

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

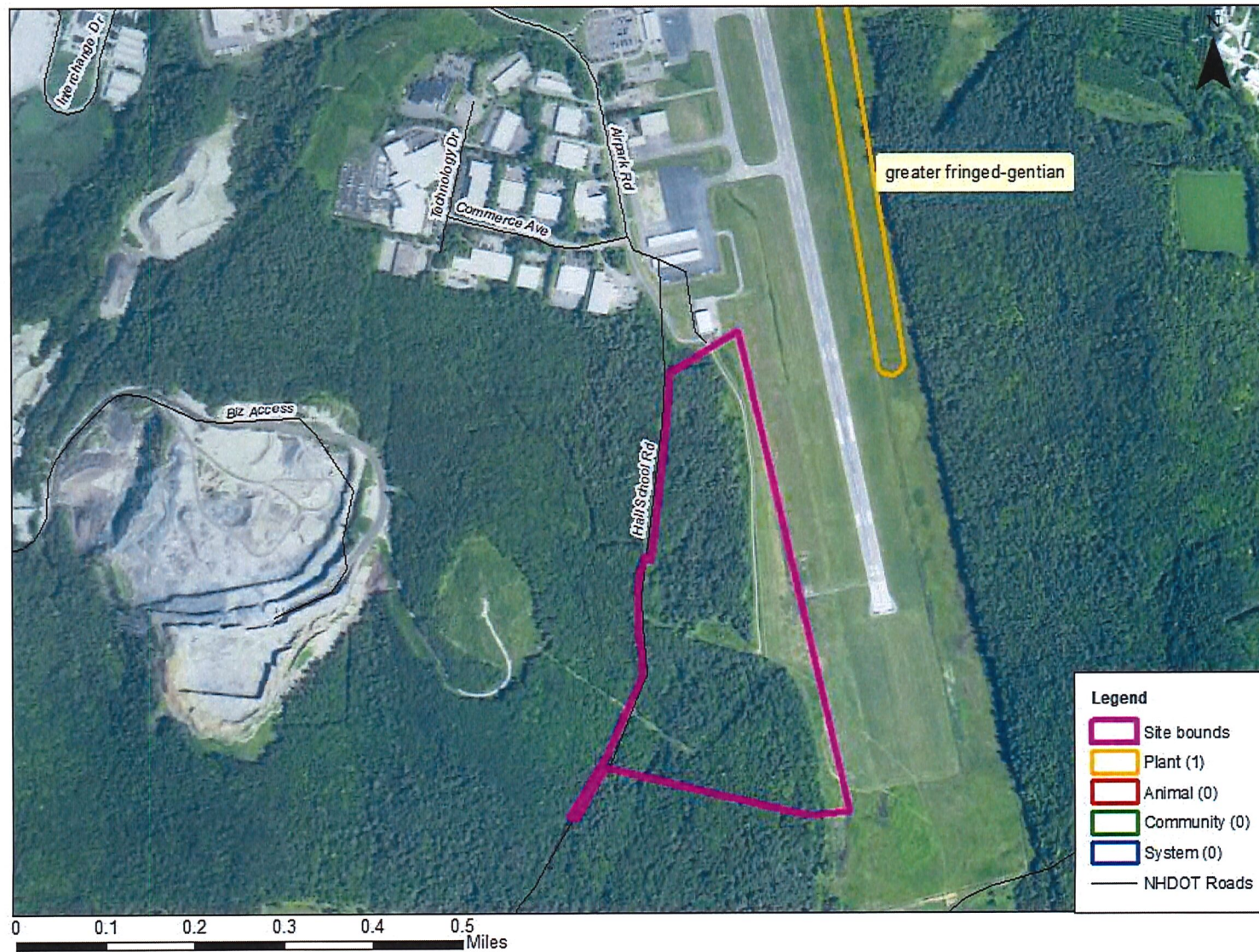
Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

Page 107

CONFIDENTIAL – NH Dept. of Environmental Services review

NHB20-3113



New Hampshire Natural Heritage Bureau - Plant Record

greater fringed-gentian (*Gentianopsis crinita*)**Legal Status**

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2009: 50-100 plants estimated, scattered through ca. 1 mile linear area.
General Area: 2009: Mowed access next to airport security fence in both wet meadow and upland.
Associated species include: nodding ladies' tresses (*Spiranthes cernua*), soft rush (*Juncus effusus*), *Phalaris arundinacea* (reed canary grass), purple loosestrife (*Lythrum salicaria*), and various sedges and grasses.
General Comments: 2009: We did not conduct a comprehensive survey for fringed gentian but noted, anecdotally, where it was occurring. It may be in other locations besides those noted on the plan.
Management Comments: 2010: Environmental Assessment in progress for improvements to runways. Potential impacts to this population will be evaluated.

Location

Survey Site Name: Lebanon Airport
Managed By:

County: Grafton
Town(s): Lebanon
Size: 12.2 acres Elevation:

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

Directions: 2009: Lebanon Airport. Plants found near fence parallel and north of Runway 36.

Dates documented

First reported: 2009-09-14 Last reported: 2009-09-14



Rick Van de Poll <rickvdp@gmail.com>

RE: Mitigation for Lebanon Airport - NHB20-3113

1 message

Lamb, Amy <Amy.E.Lamb@dnrc.nh.gov>
To: Rick Van de Poll <rickvdp@gmail.com>

Fri, Nov 6, 2020 at 10:50 AM

Hi Rick,

Thanks for your quick responses!

Thank you for confirming that Wetland C was previously forested with white pine; a harvesting date of 2006 makes more sense given the size of the birches.

Thank you for confirming that Wetland E is too closed to support *Gentianopsis crinita*.

Lastly, thank you for confirming that the "wet spot" in photo "2019_06_19 (05) upper roadside wet spot.JPG" is outside of impact areas but could potentially support *G. crinita*.

Based on the above, and the assertion that the project will have no impacts to known *Gentianopsis crinita* populations or potential habitat, NHB has no further comments or questions about the proposal. You can use this email correspondence as documentation of NHB coordination in your permit application.

Best,

Amy

From: Rick Van de Poll <rickvdp@gmail.com>
Sent: Friday, November 6, 2020 10:41 AM
To: Lamb, Amy <Amy.E.Lamb@dnrc.nh.gov>
Subject: Re: Mitigation for Lebanon Airport

EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.

Amy, yes! Good to talk specifics afterwards.

Wetland C was previously forested with white pine. My guess is that it was logged and cleared when Big Green Aviation upgraded their site in 2006 as David mentioned, since the gray birch did seem about that old.

Wetland E is too closed in for Gentianopsis. I watched the Keene site grow in during the 1990s and saw how we lost that pop as a result.

That photo of the 'wet spot' is south of the site plan area and so will be unaffected. I cruised that area just in case there needed to be a back entrance and see if there were jurisdictional wetlands. All of the "holes" had non-hydric soils. That said, it does seem like a possible Gentianopsis area, but I found no evidence of them occurring. (It's almost all invasives and non-native grasses).

Thanks for your interest!

Rick

On Fri, Nov 6, 2020 at 10:33 AM Lamb, Amy <Amy.E.Lamb@dncr.nh.gov> wrote:

Hi Rick,

I had a couple quick questions that I didn't get a chance to ask today; I didn't want to make everyone else stay on past 10!

Was wetland C, the wetland currently with youngish gray birch, forested prior to the 1990's logging by your estimation?

I also wanted to confirm that wetland E, the former apple orchard/cow pasture, could not presently support Gentianopsis.

Lastly, the photo on page 18 titled ": 2019_06_19 (05) upper roadside wet spot.JPG" – is that wetland F?

Thanks so much!

Amy

From: Rick Van de Poll <rickvdp@gmail.com>

Sent: Thursday, October 29, 2020 2:37 PM

To: Guerdet, Carolyn <CAROLYN.C.GUERDET@des.nh.gov>

Cc: Sommer, Lori <LORI.L.SOMMER@des.nh.gov>; Davidson, Tyler <Tyler.J.Davidson@des.nh.gov>; Rennie, Craig <CRAIG.D.RENNIE@des.nh.gov>; Tilton, Mary Ann <mary.a.tilton@des.nh.gov>; Mauck, Ridgely <Addison.R.Mauck@des.nh.gov>; lindsey.e.lefebvre@usace.army.mil; Brochi.Jean@epa.gov; Lamb, Amy <Amy.E.Lamb@dncr.nh.gov>; Doperalski, Melissa <Melissa.Doperalski@wildlife.nh.gov>; tknapp@dufresnegroup.com; njohnson@dufresnegroup.com

Subject: Re: Mitigation for Lebanon Airport

EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.

Page 111

Hi Carolyn;

Attached please find the materials for review prior to the pre-app meeting next Friday the 6th at 9 am. I have included narrative and map materials as requested, although not the entire plan set prepared for the development of the Airport B Lot in Lebanon. If the entire plan set is desired by the team, I would be happy to forward it. Please advise.

I look forward to our meeting next week.

Rick

On Fri, Oct 9, 2020 at 1:34 PM Guerdet, Carolyn <CAROLYN.C.GUERDET@des.nh.gov> wrote:

Hello Everyone,

Rick Van de Poll has requested a mitigation meeting for the project below. Please use the Doodle poll link to indicate which dates would work for you to meet via WebEx.

Lebanon is developing its 54-acre 'Airport B parcel' and expanding the industrial park in that area. We anticipate a mitigation-required amount of impacts.

<https://doodle.com/poll/asyi7iyywp8k8y74>

Thank you,

Carolyn Guerdet

Water Division

NH Department of Environmental Services

29 Hazen Drive, PO Box 95

Concord, NH 03301

Phone: (603) 271-3434

Carolyn.Guerdet@des.nh.gov



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printing, or copying of this e-mail is strictly prohibited. If you believe that you have received this e-mail in error, please notify me at the Department of Environmental Services at 603.271.3434.

--

Rick Van de Poll, PhD

Ecosystem Management Consultants of New England, LLC

[30 N. Sandwich Rd](#)

[Center Sandwich, NH 03227](#)

rickvdp@gmail.com

www.rickvandepoll.com

--

Rick Van de Poll, PhD

Ecosystem Management Consultants of New England, LLC

[30 N. Sandwich Rd](#)

[Center Sandwich, NH 03227](#)

rickvdp@gmail.com

www.rickvandepoll.com

Please mail the completed form and required material to:

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

DHR Use Only

R&C # _____

Log In Date ____ / ____ / ____

Response Date ____ / ____ / ____

Sent Date ____ / ____ / ____

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

☒ This is a new submittal

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

GENERAL PROJECT INFORMATION

Project Title Lebanon Airpark Road Development

Project Location Lebanon

City/Town Lebanon Tax Map 159 Lot # 04

NH State Plane - Feet Geographic Coordinates: Easting 814608 Northing 407546
(See RPR Instructions and R&C FAQs for guidance.)

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

State Agency and Contact (if applicable) NHDES, Craig Rennie

Permit Type and Permit or Job Reference # Airport B Parcel

APPLICANT INFORMATION

Applicant Name City of Lebanon

Mailing Address 51 N. Park St. Phone Number 603-448-1457

City Lebanon State NH Zip 03766 Email david.brooks@lebanonnh.gov

CONTACT PERSON TO RECEIVE RESPONSE

Name/Company Rick Van de Poll, Ecosystem Management Consultants

Mailing Address 30 N. Sandwich Rd Phone Number 6036772473

City Center Sandwich State NH Zip 03227 Email rickvdp@gmail.com

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

Project Boundaries and Description

- ☒ Attach the Project Mapping **using EMMIT or relevant portion of a 7.5' USGS Map.** (See RPR Instructions and
- ☒ Attach a detailed narrative description of the proposed project.
- ☒ Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- ☒ Attach photos of the project area (overview of project location and area adjacent to project location, and specific ar
- ☒ A DHR records search must be conducted to identify properties within or adjacent to the project area.
Provide records search results via EMMIT or in **Table 1.** (Blank table forms are available on the DHR website.)
EMMIT or in-house records search conducted on 12/01/2020.

Architecture

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

Approximate age(s): 100 - 160 years

- ☒ Photographs of **each** resource or streetscape located within the project area, with captions, along with a mapped p
- ☐ If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provi

Archaeology

Does the proposed undertaking involve ground-disturbing activity? ☒ Yes ☐ No

If yes, submit all of the following information:

- ☒ Description of current and previous land use and disturbances.
- ☐ Available information concerning known or suspected archaeological resources within the project area (such as cel

Please note that for many projects an a

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

- ☐ **Insufficient information to initiate review.** ☐ Additional information is needed in order to complete review.
- ☐ No Potential to cause Effects ☐ No Historic Properties Affected ☐ No Adverse Effect ☐ Adverse Effect

Comments: _____

If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resource

Authorized Signature: _____ Date: _____

DHR RPR – Lebanon Airpark Road

NHDHR Project Review Request
Lebanon Airpark Road Development
Airport B Lot, Lebanon, NH

Applicant: City of Lebanon

Contact Info: David Brooks, Director

City of Lebanon Planning Department
51 N. Park St.
Lebanon, NH 03766
603-448-1457
david.brooks@lebanonnh.gov

Rick Van de Poll, CWS#110, Agent for the Applicant
Ecosystem Management Consultants
30 North Sandwich Rd
Center Sandwich, NH 03227
603-677-2473
rickvdp@gmail.com

Narrative Description:

The City of Lebanon intends to continue its expansion of the commercial-industrial development associated with the City's Airport in West Lebanon. The existing Airpark Drive will be extended approximately 1660 feet from its current terminus in front of Big Green Aviation on the west side of the City's north-south airstrip. The extension will run southerly along the western side of the 48-acre lot and will eventually service up to five (5) commercial-industrial buildings as illustrated on the attached site plans. Grading will take place across roughly 12 acres of the 21 acre north part of the lot. This will include the 1660-foot access drive, five .5-acre buildings, and their access drives and parking areas. A total of 5.0 acres of impervious surfaces will be added to the site. Stormwater will be handled by the establishment of five bioretention basins, one for each building and parking area, that range between 1500 and 1620 s.f. each. A separate, 1650 s.f. bioretention basin will be constructed to handle road run-off, and a 10,400 s.f. detention basin will capture the bioretention basin discharges and other surface run-off from site slopes uphill. Final discharge will be less than existing and will utilize the culvert and ditch system that was previously constructed on the east and north sides of the lot. This surface water conveyance runs northerly along the western side of the airport and eventually leads westerly down towards the Connecticut River.

The project site has been continuously disturbed since the early 19th century when it was first cleared for pasture and used as an orchard for many decades that lasted until the early 20th century. The existing and proposed Airpark Road was formerly known as the Hall Schoolhouse Road, which leads southerly along the west side of the lot towards Stockwell Brook past the former site of the Hall Schoolhouse. Whereas the Hall Schoolhouse is well south of the property, there is an old cellar hole in the southwest

DHR RPR – Lebanon Airpark Road

part of the 21-acre north part of the lot (see location of the “Old Block Foundation” on the attached site plans, and see photos as attached). It is uncertain what this foundation supported, but from the evidence recorded during the site inspection, it does not appear to have been a residence. There is no chimney foundation and the size is quite small. It is suspected that this structure was used for cidering and storage of apples and apple products. Like the wetland areas on the site, it will be avoided during the construction process. All other structures associated with former land use, i.e. stonewalls, stone piles, old dumps, and ditches, will also be unaffected by the project.

In terms of current land use on the site, the existing access road along the airstrip fence will remain open to public recreation and access. A strip of trees will buffer the proposed buildings from this access road, and no improvements will be made to the former drive to the orchard building from the east. The latter exists as a snowmobile and walking trail, although it also serves as a right-of-way access to the Pike Industries Gate “P.” In terms of other future development in the area, the abutting Upper Valley Tech Park property has previously been approved for development (which did not ultimately occur) and is actively pursuing new development opportunities, and the Pike Industries lot will continue to be utilized for hard rock quarrying.

Please mail the completed form and required material to:

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

RECEIVED
 DEC 09 2020

DHR Use Only	
R&C #	12275
Log In Date	12/9/20
Response Date	12/15/20
Sent Date	12/18/20

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

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

GENERAL PROJECT INFORMATION

Project Title Lebanon Airpark Road Development

Project Location Lebanon

City/Town Lebanon Tax Map 159 Lot # 04

NH State Plane - Feet Geographic Coordinates: Easting 814608 Northing 407546
 (See RPR Instructions and R&C FAQs for guidance.)

Lead Federal Agency and Contact (if applicable)
 (Agency providing funds, licenses, or permits)

Permit Type and Permit or Job Reference #

State Agency and Contact (if applicable) NHDES, Craig Rennie

Permit Type and Permit or Job Reference # Airport B Parcel

APPLICANT INFORMATION

Applicant Name City of Lebanon

Mailing Address 51 N. Park St. Phone Number 603-448-1457

City Lebanon State NH Zip 03766 Email david.brooks@lebanonnh.gov

CONTACT PERSON TO RECEIVE RESPONSE

Name/Company Rick Van de Poll, Ecosystem Management Consultants

Mailing Address 30 N. Sandwich Rd Phone Number 6036772473

City Center Sandwich State NH Zip 03227 Email rickvdp@gmail.com

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Project Boundaries and Description

- ☒ Attach the Project Mapping **using EMMIT or relevant portion of a 7.5' USGS Map.** (See RPR Instructions at [http://www.dhr.nh.gov/rpr](#))
- ☒ Attach a detailed narrative description of the proposed project.
- ☒ Attach a site plan. The site plan should include the project boundaries and areas of proposed excavation.
- ☒ Attach photos of the project area (overview of project location and area adjacent to project location, and specific areas of excavation).
- ☒ A DHR records search must be conducted to identify properties within or adjacent to the project area. Provide records search results via EMMIT or in Table 1. (Blank table forms are available on the DHR website.) EMMIT or in-house records search conducted on 12/01/2020.

Architecture

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

Approximate age(s): 100 - 160 years

- ☒ Photographs of **each** resource or streetscape located within the project area, with captions, along with a mapped location.
- ☐ If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, provide a description of the work.

Archaeology

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

- ☒ Description of current and previous land use and disturbances.
- ☐ Available information concerning known or suspected archaeological resources within the project area (such as a site plan, historical maps, etc.)

Please note that for many projects an

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

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

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

Comments: _____

If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources at 603-271-2200.

Authorized Signature: Margi Miller, DSHR Date: 12/15/2020

**Agenda
Conservation Commission
February 11, 2021**

**Agenda Item #4B
Study Items**

NH DOT Route 120 MultiModal Project ConCom Recommendations

Feb. 8, 2021

DRAFT MEMORANDUM

TO: NH DOT

FROM: Lebanon, NH Conservation Commission

RE: Comments the NH Route 120 study (I-89 exit 18 to Etna Rd.)

In response to the request for comments on the proposed modifications to Route 120 between I-89 exit 18 and Etna Rd. to alleviate traffic congestion, especially during the morning and evening rush hours, we offer the following suggestions and concerns:

1. Mitigating traffic noise levels and traffic speeds

We encourage you to take actions that will reduce traffic noise. Given that this section of Rt. 120 has numerous small businesses, schools, residences, and professional offices near the corridor, there will be significant benefits if the traffic speeds can be decreased as congestion is addressed.

2. Protecting wildlife habitat and corridors

The ecological systems between Signal Hill, Mt. Support, and the flood plain of the Mascoma River (and its tributaries) are inhabited by diverse wildlife communities that migrate annually and move regularly in the diverse topography there. We encourage you to build and upgrade wildlife corridors under Rt. 120. Considerable research has been done on the wildlife populations in that area, so that information can be used in the design of crossings.

3. Providing diverse mass transit, pedestrian, and cycling options

Building and extending sidewalks along this section of Rt. 120 will encourage pedestrian travel, and bicycle lanes will be a great benefit, especially if extended eventually beyond Etna Rd. to the Dartmouth-Hitchcock Medical Center and Centerra Plaza. Building bike lanes and sidewalks now to Etna Rd. will be a start for extensions up the hill and to Hanover.

4. Landscaping the median strip from exit 18 to Hanover St.

Although this project focuses on the stretch of Rt. 120 from exit 18 to Etna Rd., we encourage you to extend it to include modifying the median strip between the exit and Hanover St. in Lebanon (approximately 200 yards). This is the north gateway to historic Lebanon, and from an aesthetic point of view, planting trees and other native species in gardens would enhance the beauty of that stretch of highway. If a median is considered for the exit 18-to-Etna Rd. section, this could be extended to Hanover St.

5. Protecting existing wetlands

There are significant areas of wetlands on the east and west sides of Rt. 120, especially north of Heater Rd. There has been a lot of disturbance and filling of these wetlands in years past, they are critically important for flood control, wildlife populations, biodiversity, and ecosystem integrity. We encourage you to avoid any further loss of wetlands in this area.

We thank the NH DOT for the opportunity to provide input into planning for modifications to this section of Rt. 120. If you have any questions, please contact Dr. Ernst Oidtmann, the chair of the Conservation Commission.

Tell us what YOU think!



The New Hampshire Department of Transportation (NHDOT) has recently begun a project to study multi-modal improvements to NH Route 120 from Hanover Street to Etna Road in Lebanon, NH. This project (NHDOT reference #29612) seeks to address traffic and safety needs for all travel modes along the approximately 1.1 mile long corridor of NH Route 120, including the I-89 Exit 18 interchange and short segments of the adjacent local road network.

YOUR INPUT IS NEEDED!

Help us find ways to improve safety and operations in the NH Route 120 Corridor by visiting our interactive, online mapping tool and completing a survey.

www.nhroute120study.com



Submit your ideas
by March 31, 2021!



www.nhroute120study.com



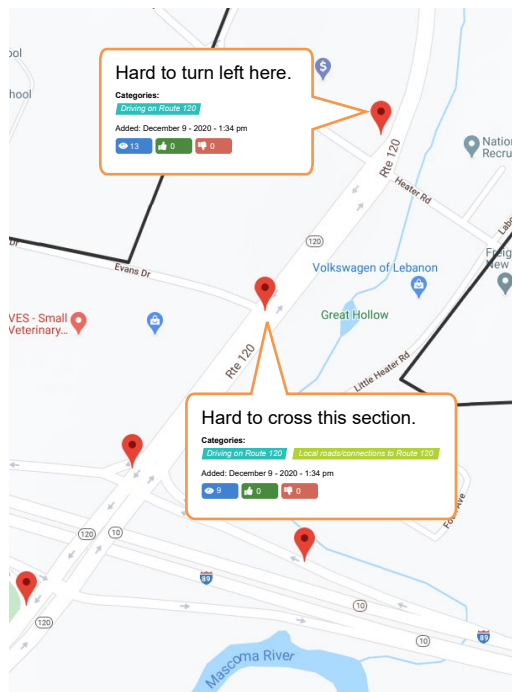
Drop a pin on an area
you want to discuss



Describe your
issue and/or make
recommendations
for improvements



See what others
have to say about
NH Route 120



VALLEY NEWS

(<https://www.vnews.com>)

News (/News/)

NH Transportation Department seeks input on traffic backups around I-89's Exit 18



Traffic piles up along southbound Route 120 towards Hanover Street due to the closure of the southbound Exit 18 ramp on Interstate 89 in Lebanon, N.H., on June 22, 2016. A detour has been created to help ameliorate the backups caused by the sewer infrastructure project occurring on the southbound Exit 18 ramp. (Valley News - Mac Snyder) Copyright Valley News. May not be reprinted or used online without permission. Send requests to permission@vnews.com. » [Buy this Image](#)

By [TIM CAMERATO \(/byline?byline=By TIM CAMERATO\)](#).

Valley News Staff Writer

Published: 2/3/2021 9:52:47 PM

Modified: 2/3/2021 9:52:43 PM

LEBANON — State transportation officials are soliciting ideas on how to reduce congestion around the Interstate 89 Exit 18 interchange in Lebanon as they consider how to ease traffic along the Route 120 corridor.

The New Hampshire Department of Transportation is asking the public in an online survey to share its views of a roughly 1.1-mile stretch of Route 120 between Hanover Street and Etna Road.

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Answers will help guide plans for a \$4.8 million infrastructure project that could come as early as 2023, according to Donald Lyford, a DOT engineer and the project's manager.

He said the study — which is active on Lebanon's [website \(https://lebanonnh.gov/CivicAlerts.aspx?AID=1600\)](https://lebanonnh.gov/CivicAlerts.aspx?AID=1600) through March 31 — is part of yearslong efforts to alleviate peak morning traffic that can often back up onto Interstate 89.

Heavy traffic can then lead to backups on Route 120, impacting several intersections heading north, Lyford said.

“So, we’re going to be looking to see if we can improve the efficiency of the ramp terminals and traffic control,” he said Wednesday, adding that the DOT doesn’t yet have concrete solutions lined up.

Route 120 between Lebanon and Hanover is the most trafficked corridor in the region, according to the Upper Valley Lake Sunapee Regional Planning Commission, which just wrapped up its own look at the roadway.

The state highway is particularly congested during morning and afternoon commutes — 7 to 9 a.m. and 4 to 6 p.m. — and sees high truck traffic, the commission said in a report (https://www.uvlsrpc.org/files/1215/9581/3734/120N_Chapter_90pctdraft.pdf) issued over the summer.

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Hestra Army Leather GORE-TEX 3-Finger \$189.95 	Heat Factory Balaclava \$19.99 

Overall, roughly 20,000 vehicles travel Route 120 near the Hanover town line daily, according to 2019 traffic counts.

While it may seem like most of those cars are headed to and from Dartmouth-Hitchcock Medical Center — the Upper Valley's largest employer and a draw for patients throughout northern New England — other institutions also contribute to traffic, said Meghan Butts, the planning commission's interim executive director.

Those include Lebanon High School and the Hanover Street School, which have student pickup and drop-off during regular commuter hours, and establishments within the city's nearby downtown neighborhoods.

"It's twice a day, five days a week and that's about it. That's where our problems lie," Butts said.

While engineers could construct more lanes to deal with traffic, Butts implored the DOT to also consider improving pedestrian and bicycle access, goals that were a main focus as the planning commission drew up its report last year. That document calls on Lebanon and Hanover to invest in park-and-rides, trails and greater access to public transportation that could take cars off the road.



“In the transportation world, we know when we build more road lanes that cars will fill them up again and we’ll still have a traffic problem,” Butts said.

Her views appear to be widely shared by those who have already participated in the DOT’s Route 120 survey.

Some pointed out that Hanover Street can be challenging for cyclists, who struggle to find alternative options in the hilly neighborhood.

Others said Route 120 north of Exit 18 can be dangerous for cyclists, and suggested extending sidewalks and bike lanes to the Hanover town line.

Elsewhere, people said the Route 120 intersection with Heater Road can be confusing for some drivers who don’t understand options for turning.

Traffic lights and the perceived shortness of green lights also are a common theme among the survey respondents.

“It’s basically impossible to leave Lebanon at 7:45 am Monday through Friday,” one person wrote of the Exit 18 interchange.

Lebanon Planning Director David Brooks said the state has made previous attempts to solve congestion issues, including the addition of a lane as Route 120 approaches Heater Road.



Brooks added that he also hopes whatever plan the DOT formulates for Route 120 will include some pedestrian and bike improvements, saying he’s often heard requests for a crosswalk at Etna Road.

“I think we’re hopeful that at least certain facets of that can be included,” he said.

Information on the ongoing Route 120 study is on LebanonNH.gov under “[NHDOT I89/Exit 18 Project Feedback](https://lebanonnh.gov/CivicAlerts.aspx?AID=1600) (<https://lebanonnh.gov/CivicAlerts.aspx?AID=1600>).”

The state also maintains a website on the project at [NH.gov/dot/projects/lebanon29612/index.htm](https://www.nh.gov/dot/projects/lebanon29612/index.htm). (<https://www.nh.gov/dot/projects/lebanon29612/index.htm>)

Tim Camerato can be reached at tcamerato@vnews.com or 603-727-3223.



Victoria F. Sheehan
Commissioner

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION



William Cass, P.E.
Assistant Commissioner

January 27, 2021

Re: Statewide 43131

Conservation Commission Chair
51 North Park Street
Lebanon, NH 03766

To Whom It May Concern:

The NH Department of Transportation (NHDOT) is planning the subject highway safety project in the Towns of Charlestown, Claremont, Cornish, Plainfield, Lebanon, and Hanover. The purpose of the project is to replace guardrail and guardrail end units that no longer meet current safety standards. The proposed work includes the replacement of existing deficient roadside cable barrier and w-beam guardrail with Manual for Assessing Hardware (MASH) approved w-beam guardrail with steel posts and extending the guardrail where necessary in order to meet current safety standards. Project limits are on NH Route 11 in Charlestown, NH Route 12A in Charlestown and Claremont, NH Route 120 in Claremont, Cornish, Plainfield, and Lebanon, and NH Route 10 in Hanover. Attached is a project location map. All proposed work is within the State right-of-way.

Engineering studies have been initiated to refine the scope and limits of work necessary for this project. The Department's Bureau of Environment is in the process of evaluating the potential environmental impacts associated with the project. To assist in this evaluation, I am asking that you notify me of any concerns relative to the project's potential impacts on environmental, social, economic, or cultural resources, such as wetlands, historic properties, and invasive plant species.

Some transportation projects require mitigation for possible wetland/stream impacts. The natural resources in this project area have not yet been identified and investigations are forthcoming. Preliminary engineering studies have begun and the Department will attempt to avoid, and minimize impacts through design before determining if there will be any stream or wetland impacts that may require mitigation. **As a proactive measure the Department would like to request a list of the Town's preferred/priority mitigation efforts that the Department may evaluate and consider undertaking if it is determined that the project does in fact require mitigation. Please let us know if your Town has identified such priorities.** In the absence of any Town priorities to evaluate the Department will pursue permittee responsible mitigation through the Stream Passage Improvement Program (SPIP). If it's determined that no viable options exist through the SPIP, the Department will pursue a payment into the Aquatic Resource Mitigation Fund (ARM Fund), at which time those funds will become competitively available through the ARM fund grant process.

As such, does the Town have a list of priority mitigation efforts (Top 10 Priority List) that the DOT may evaluate and consider undertaking if it is determined that the project does in fact require mitigation? If so, please provide the list. (e.g. problematic culvert/bridge crossings, land protection, habitat restoration, etc.)

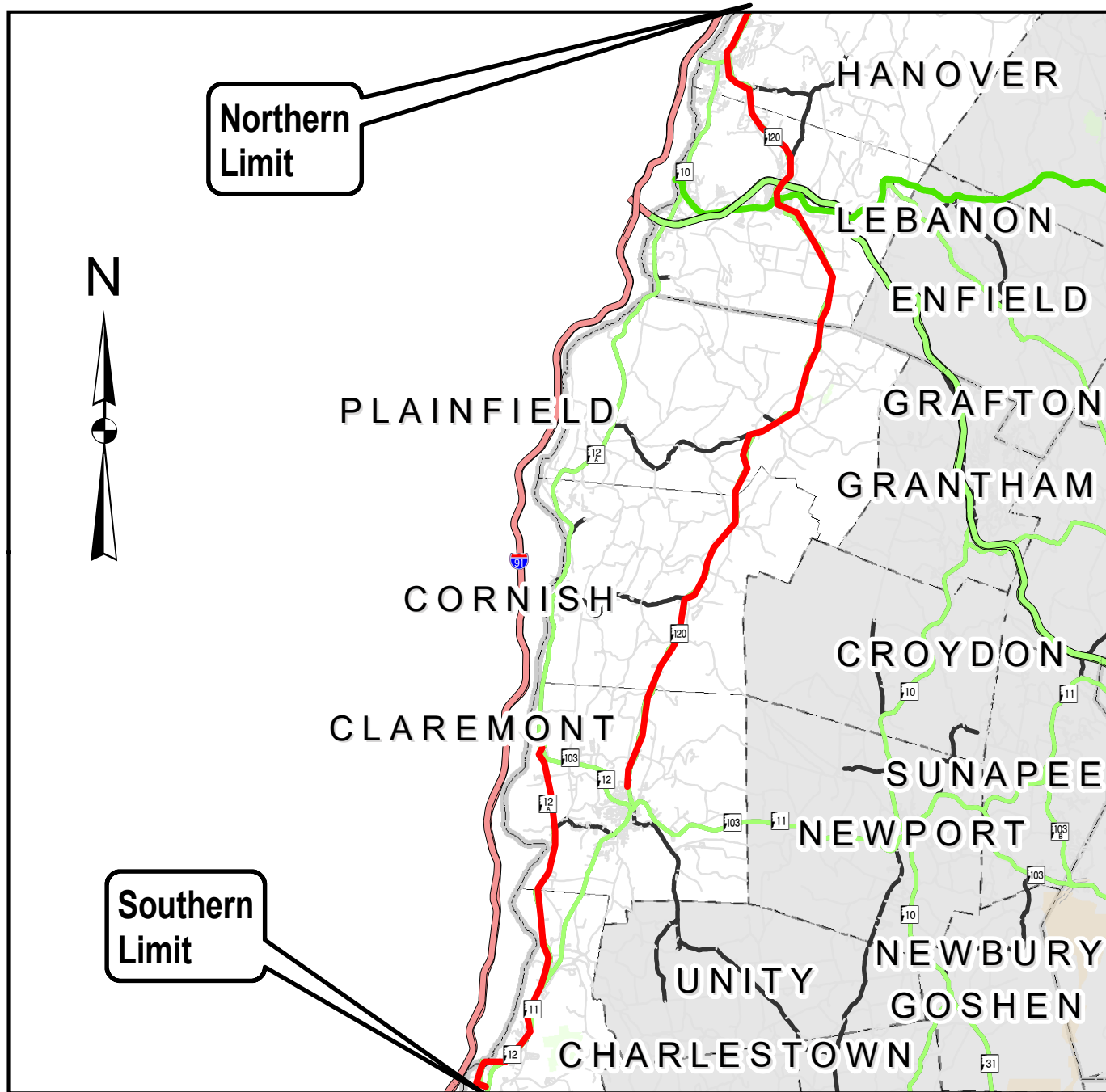
The tentative advertising date for this project is September 21, 2021. Please feel free to contact me, via email or phone, if you have any questions or require further information regarding the project. This letter has been sent to the Planning Board, Historical Society, Conservation Commission, and Board of Selectmen.

Thank you for your assistance.

Sincerely,

Kerry Ryan
Environmental Analyst
Kerry.ryan@dot.nh.gov

STATEWIDE W - GUARDRAIL



1 1/2 0 1 2 Miles

LEGEND

- Streams
- Water Bodies
- US Routes
- State Routes
- Interstates
- Local Roads
- Town Boundary

New Hampshire
DOT
 Department of Transportation

State #: 43131
 Federal #: X-A005 (046)
LOCATION MAP

