Joseph Garruba
28 Winchester Dr.
Hollis, NH 03049
Feb 10, 2020

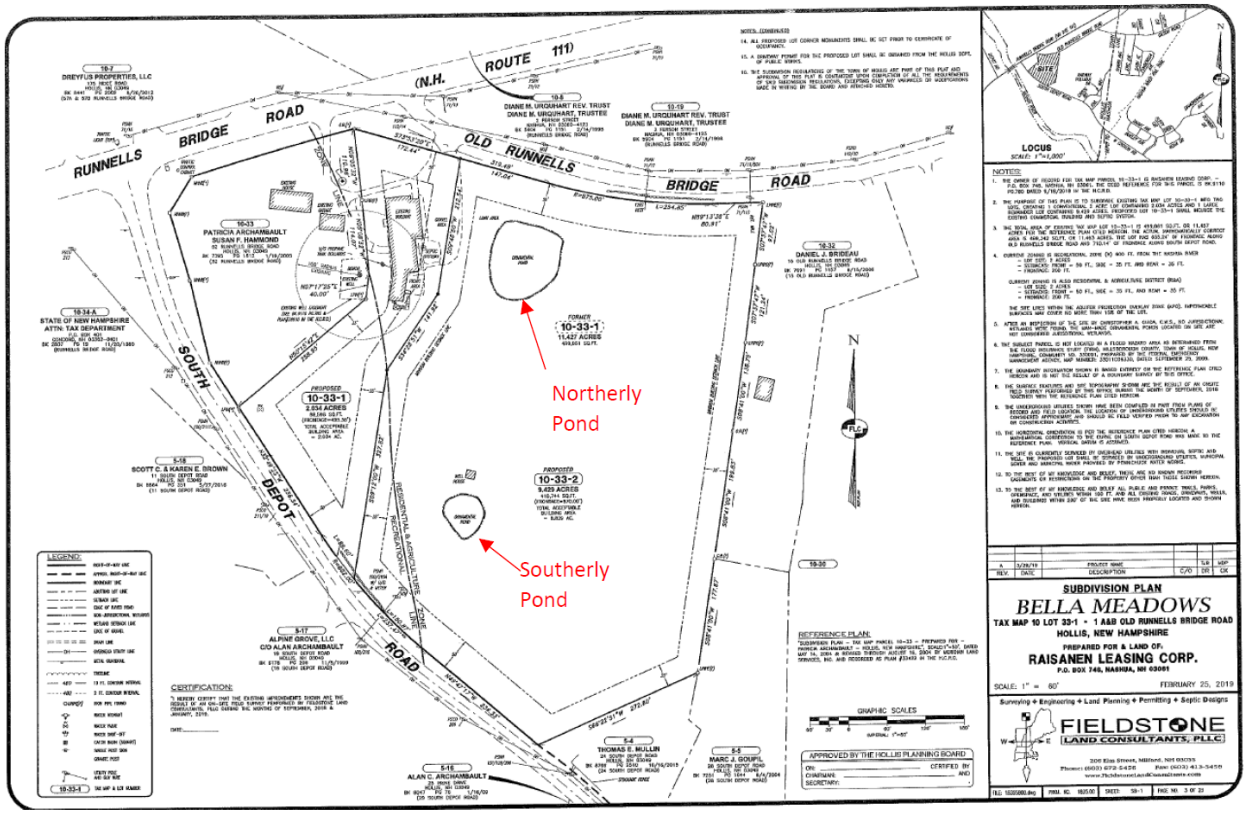
Jessica Bouchard:

I am writing to you in your capacity as reviewer of wetland fill permit 2020-00183 which was submitted by Rasianen Leasing requesting a standard fill permit for a pond in Hollis at tax map 10-33-1. I received a copy of the permit application from the Hollis planning department and I have reviewed its content. I find many areas of non-compliance and concern with this proposal and I am taking this opportunity to submit my comments so that you may consider them in your review. I had previously e-mailed an earlier letter describing problems that came up during the Hollis planning board process. Now that I have had a chance to see the submitted application which was received on Jan 31 2020, I want to offer further insight into the problems that I found specific to the application.

Contents

Overview

Wetland permit application 2020-00183 describes a project proposed for Hollis Tax map 10 Lot 33-1. The proposal involves subdividing a parcel of approximately 9 acres and constructing a 32 unit condominium complex on the site. The location has two jurisdictional wetlands. A northerly pond that was dredged from an existing natural wetland in the 1960s and a southerly pond which was created as a golf course water hazard in the mid 1990s. The proposal includes two significant wetland impacts. The developer proposes to fill in the southerly pond entirely and proposes directing storm water from newly proposed development into the northerly pond. Impacts to the northerly wetland were explicitly prohibited when the site was developed as a golf course in the 1990s. The proposal includes significant addition of impervious cover including two roads and 10 buildings. I have included an existing conditions map from the subdivision plans dated 3-29-19 for clarity below



My Review of the application includes this narrative as well as marked up copies of the applicant's submitted application in addition to markups of the following plans identified below.

Site plan	Rev E 1-30-20
Grading and Erosion Control Plan	Rev E 1-13-2002
Existing Conditions plan	Rev D 1-13-2020

Impact Avoidance and Minimization and Mitigation

The submitted application is deficient with regard to several areas related to the three step process of avoidance, minimization and mitigation which I believe need to be addressed before this application can be considered for approval. I will cite each regulation below and outline how the application is deficient with respect to each.

Env-Wt 313.03 Avoidance and Minimization (b)(1)

(b) For any major or minor project, the applicant shall demonstrate specifically that:
(1) There is no practicable alternative that would have a less adverse impact on the area and environments under the department's jurisdiction;

The applicant has not taken actions to implement a design that avoids impacts to the jurisdictional areas. In fact several alternatives exist.

1. The project buildings could be relocated further to the east and north to avoid impacts to the southerly pond.
2. The project's scope could be reduced (i.e build a few less units). This would reduce the impervious cover and reduce the area needed for storm water treatment.
3. The required storm water basin could be installed in a place other than the location of the southerly pond.
4. Planned positions of buildings and roads could be adjusted to accommodate the development without filling the pond.
5. The number of buildings could be reduced.
6. The size of the buildings could be reduced.

All of the avoidance / mitigation measures suggested above would have less adverse impact than filling the southerly pond which is known to support fish and is a likely habitat for turtles and other aquatic life. The developer has not provided specific reasons why these alternatives could not be accomplished. In order to prove that there is "no practicable alternative", the developer should submit a site plan for each of the above alternatives and **demonstrate** why they are not practical.

Env-Wt 313.03 Avoidance and Minimization (b)(4) (bold and colored emphasis added)

(b) For any major or minor project, the applicant shall demonstrate specifically that:
…
*(4) **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;*

The developer's application does not address the requirement to first avoid and then if necessary minimize impacts to areas of jurisdiction under RSA482-A such as the southerly pond. Neither does it address protected species and habitat or documented fisheries. A New Hampshire Natural Heritage Bureau search was conducted in May of 2019. This search indicated reports of protected species in the area. In addition, a member of the Hollis Conservation Commission indicated that the report is likely a Blanding's Turtle. These turtles are state endangered species. They are identified as a wildlife action species in greatest need of conservation and are also identified as critically imperiled. Avoidance and minimization of impacts to their habitat is required by Env-Wt 313.03. The fact that the Natural Heritage Bureau does not "expect" that they will be impacted does not relieve the applicant of the requirement to protect their habitat imposed by Env-Wt 313.03(b)(4)

Further, testimony of Mr Guida, the project's wetland scientist at the Hollis Conservation Commission confirms the presence of fish in the pond. The regulation requires the minimization and avoidance of impacts to **all** wetlands but especially to protected species, their habitat and to **documented fisheries**. The applicant must show that there are no practical alternatives to protecting this habitat.

The regulation is clear in its direction that impacts to wetlands and other areas of jurisdiction must be avoided if possible. The regulation goes on to enumerate specific areas of concern, but never the less it still

requires avoidance and minimization of **all areas of jurisdiction** under RSA 482A. This can be understood by the choice of the word "especially", which serves to ensure the protection of the enumerated list, not to exclude other areas of jurisdiction from the requirement to avoid and minimize.

Env-Wt 313.03 Avoidance and Minimization (b)(5)

(b) For any major or minor project, the applicant shall demonstrate specifically that:

…

(5) The project avoids and minimizes impacts that eliminate, depreciate, or obstruct public commerce, navigation, or recreation;

The project proposes to completely remove a jurisdictional pond and replace it with a drainage feature. The removal of the pond eliminates the public's opportunity to conduct recreational fishing in the pond. The applicant has not addressed a means of avoiding or minimizing this impact.

Definitions from wetland regulation

To be clear about the extent of protection for New Hampshire jurisdictional areas, the wetland regulations specifically define the related terms. I have included the definition of the regulation below. Emphasis in bold type added.

*Env-Wt 102.12 "Avoidance" means **not** impacting jurisdictional areas if there is a practicable alternative to the proposed project that would have less impact on the aquatic ecosystem or jurisdictional areas, so long as the alternative does not have other significant adverse environmental consequences and is consistent with 40CFR 230.10(a). **amended effective 12-24-2019***

*Env-Wt 102.13 "Avoidance, minimization, mitigation" means the 3-step sequence an applicant must follow to eliminate adverse impacts to jurisdictional areas to the **maximum extent practicable**.*

*Env-Wt 102.14 "Avoid and minimize" means to avoid impacts to the **maximum extent practicable and then** minimize those impacts that cannot be avoided.*

Env-Wt 313.03 Avoidance and Minimization conclusion

There are many alternatives that need to be evaluated prior to considering approving this permit. The burden of proof rests solely with the applicant to **demonstrate** that the suggested alternatives are not practical. This will require detailed engineering to support any claims of impracticability. The language of Wt 313.03 is strongly written and imposes a requirement on the applicant to present a convincing evidence as to why each of the proposed alternatives is not practical. This is further reinforced by Env-Wt 313.01 which describes the specific approval criteria. The relevant regulation language is quoted below for clarity.

Env-Wt 313.01 Criteria for Approving Standard Permit Applications.

…

(c) The requirements to avoid and minimize shall not be deemed to be met if:

(1) There is a practicable alternative that would have a less adverse impact on the area and environments under the department's jurisdiction;

Septic Setback

The language of Env-Wt 307.11 (d) specifically prevents fill from being used to meet septic setbacks. I am including the specific text of the regulation below.

Env-Wt 307.11 Filling Activity Conditions. In addition to all other applicable conditions in this part, the following conditions shall apply to all temporary and permanent filling activities:

…

(d) No fill shall be allowed to achieve setbacks to septic systems specified in Env-Wq 1000;

The chart below is taken from Env-wq 1000. Section 1008.04 represents the required minimum setback distances. The distance from surface water is outlined with a rectangular box for emphasis.

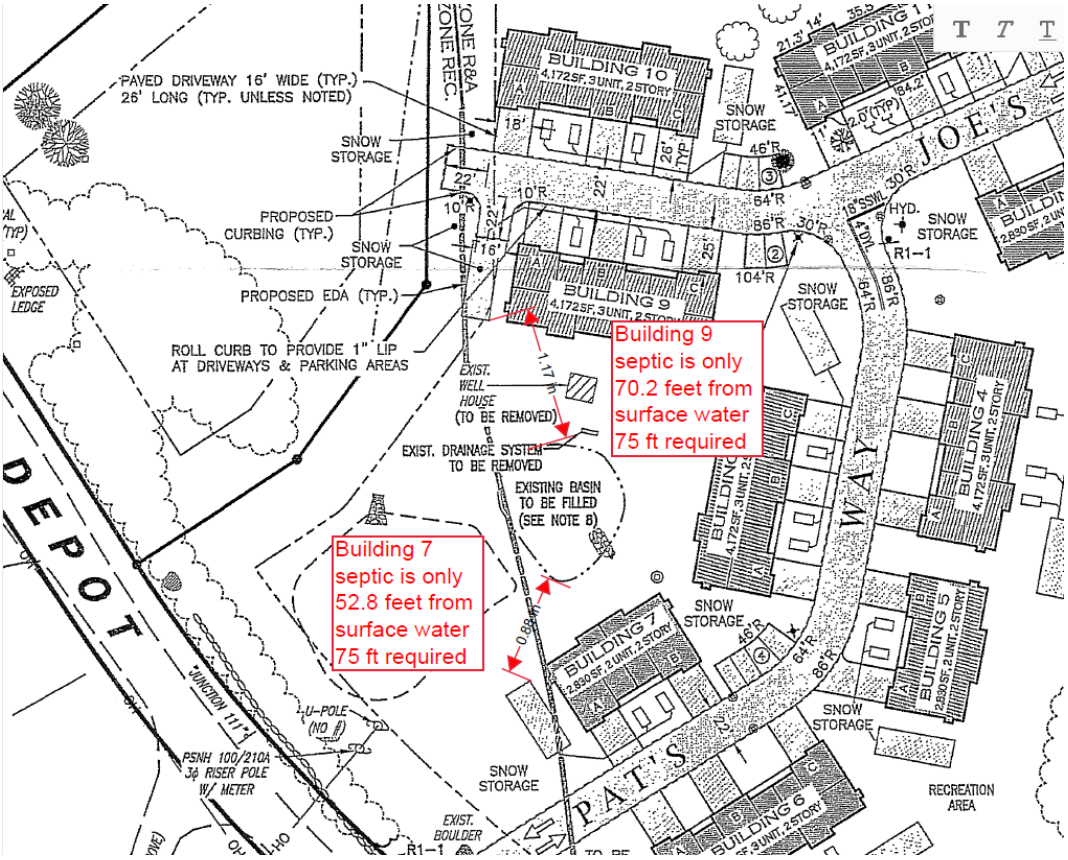
Env-Wq 1008.04 Minimum Distances.

(a) The minimum separation distance in feet between components of an ISDS and the identified receptors shall be as specified in Table 1008-2, subject to (b) through (j), below:

Table 1008-2: Minimum Separation Distances (in Feet)

Component→ / Receptor	Septic Tank	Bed	Sewer Line
Surface Water	75	75	
Poorly Drained Jurisdictional Wetland	50	50	
Very Poorly Drained Jurisdictional Wetland	75	75	
Open Drainage	75	75	
Culvert, Tight Pipe	10	25	
Catch Basin	35	35	
Reservoir	75	75	
Water Lines, pressure	10	25	10
Water lines, suction	50	50	50
Property lines	5	10	5
Foundation, any type, with Foundation Drains	5	15	
Foundation, full cellar, without Foundation Drains	5	10	
Foundation, slab, without Foundation Drains	5	5	
Foundation Drains Outfall Pipe (Solid)	5	5	
Foundation Drain Outfall (Discharge)	25	25	
Top of Natural Embankment or Natural Steep Slope	5	20	
Stormwater Pond intercepting SHWT	50	75	
Stormwater Pond not intercepting SHWT	25	35	
Geothermal well, open loop	75	75	
Geothermal well, closed loop	25	25	
Upgradient swale to divert surface water from EDA not intercepting SHWT, below finished grade of EDA	10	25	

Using the submitted site plan rev F dated 1/30/2020 one can observe that the required 75 foot setback from surface water would not be met unless the southerly pond is filled. It is incumbent upon the applicant to provide a site plan that does not rely upon filling the southerly pond in order to meet the required setback distances.



Submitted site plan rev F dated 1/30/2020

Further support indicating that the application is noncompliant specifically with regard to wetland regulations can be found in Env-Wt 307.03 (a) (4) which requires that no activity be conducted in violation of the requirements imposed by Env-Wq 1000 among others. This reinforces the need to have a compliant proposal re-engineered and resubmitted. The language of Env-Wt 307.03 (a) (4) is quoted below.

Env-Wt 307.03 Protection of Water Quality Required.

(a) No activity shall be conducted in such a way as to cause or contribute to any violation of:

…

*(4) Any provision of RSA 485-A, **Env-Wq 1000**, RSA 483-B, or Env-Wq 1400 that protects water quality.*

Compensatory Mitigation

Per Env-Wt 313.04 compensatory mitigation is required. The language of Env-Wt 313.04 is included below for reference.

Env-Wt 313.04 Mitigation Requirements.

(a) The applicant shall submit a compensatory mitigation proposal unless:

(1) There is no permanent impact to a PRA;

(2) The total project impacts less than 10,000 SF of non-tidal wetlands or less than the threshold for tidal wetlands established in Env-Wt 600; and

(3) The overall project:

a. Is limited to bank stabilization using rip-rap, bio-engineering methods, or other bank stabilization techniques to protect existing infrastructure such as highways, bridges, dams, or buildings, or includes such work in combination with other qualifying criteria;

b. Is limited to the installation of an accessory docking structure or the construction of a new or replacement shoreline structure or breakwater, or includes such work in combination with other qualifying criteria, provided the resulting dock surface area of all shoreline structures on the frontage is less than 2,000 SF; or

c. Involves the construction of a pond classified as a minimum impact or minor project in Env-Wt 519, either alone or in combination with other qualifying criteria.

(b) Mitigation shall not be required for impacts that are not intended to remain after the project is completed, provided the areas are restored in accordance with provisions shown in the approved project plans.

The requirements set forth in Env-Wt 313.04 (a) can be broken down by the three enumerated criteria provided. Thus to determine if a compensatory mitigation proposal is required, each of the three criteria must be evaluated. If all three of enumerated criteria are met, the applicant may avoid submitting a compensatory mitigation proposal. However, if any combination of one or more of the criteria is not satisfied, then a compensatory mitigation proposal is required. The statements below summarize the requirements of the regulation succinctly.

Mitigation required if one or more of (1), (2) or (3) is false.

No Mitigation required if (1) and (2) and (3) is true

Criteria (1)

(1) There is no permanent impact to a PRA;

This criteria serves to allow applicants who meet the other two criteria to avoid submitting compensatory mitigation plans for temporary impacts to Priority Resource Areas. For this specific application, we are concerned with a filling operation in an area that is considered a (PRA) Priority Resource Area. Filling the pond is definitely a permanent impact and I will show that the project area meets the definition of a PRA. The regulation language is included below for reference.

PRA Priority Resource Area - a jurisdictional area that:

(a) Has documented occurrences of protected species or habitat;
(b) Is a bog;
(c) Is a floodplain wetlands contiguous to a tier 3 or higher watercourse;
(d) Is a designated prime wetland or a duly-established 100-foot buffer zone;
(e) Is a sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone; or
(f) Is any combination of (a) through (e), above.

This specific project satisfies item (a) above since there is a documented report of rare wildlife, plant, and/or natural community present in the vicinity. As a result of the fact that there is a permanent impact to this PRA, this project satisfies criteria (1) and therefore requires compensatory mitigation.

Criteria (2)

(2) The total project impacts less than 10,000 SF of non-tidal wetlands or less than the threshold for tidal wetlands established in Env-Wt 600; and

This criteria serves to allow applicants who meet the other two criteria to avoid submitting compensatory mitigation plans for projects specifically described. For this specific application, we are concerned with a filling operation in non-tidal wetlands less than 10, 000 sf so this application satisfies criteria 2.

Criteria (3)

(3) The overall project:

a. Is limited to bank stabilization using rip-rap, bio-engineering methods, or other bank stabilization techniques to protect existing infrastructure such as highways, bridges, dams, or buildings, or includes such work in combination with other qualifying criteria;

b. Is limited to the installation of an accessory docking structure or the construction of a new or replacement shoreline structure or breakwater, or includes such work in combination with other qualifying criteria, provided the resulting dock surface area of all shoreline structures on the frontage is less than 2,000 SF; or

c. Involves the construction of a pond classified as a minimum impact or minor project in Env-Wt 519, either alone or in combination with other qualifying criteria.

This criteria serves to allow applicants who meet the other two criteria to avoid submitting compensatory mitigation plans for the three project types specifically described. The project is obviously not related to item (a) or (b) and the construction of a storm water drainage area does not satisfy item (c). Since this specific project does not satisfy items (a), (b) or (c) a compensatory mitigation plan is required

Env-Wt 313.04 Mitigation Requirements summary

Env-Wt 313.04 Mitigation Requirements		2020-00183 Satisfies	Comments
(1) There is no permanent impact to a PRA;		No	Impact is permanent
(2) The total project impacts less than 10,000 SF of non-tidal wetlands or less than the threshold for tidal wetlands established in Env-Wt 600; and		Yes	
If any items a-c below are satisfied answer Yes in the box to the right *(3) The overall project:*		No	None of items a-c are satisfied
If any of the three items are answered as yes then enter yes for criteria 3 otherwise enter No	*a. Is limited to bank stabilization using rip-rap, bio-engineering methods, or other bank stabilization techniques to protect existing infrastructure such as highways, bridges, dams, or buildings, or includes such work in combination with other qualifying criteria;*	*No*	
	b. Is limited to the installation of an accessory docking structure or the construction of a new or replacement shoreline structure or breakwater, or includes such work in combination with other qualifying criteria, provided the resulting dock surface area of all shoreline structures on the frontage is less than 2,000 SF; or	*No*	
	c. Involves the construction of a pond classified as a minimum impact or minor project in Env-Wt 519, either alone or in combination with other qualifying criteria.	*No*	
If any of items 1 – 3 above are identified with a No indicating not satisfied then compensatory mitigation is required			

Considering that the proposal does not meet either criteria (1) or Criteria (3) of Env-Wt 313.04 the applicant should submit a compensatory mitigation proposal. Since there are two criteria which are not met, satisfaction of either of the criteria alone is not sufficient to relieve the applicant of the requirement for compensatory mitigation.

Functional assessment inadequacy

As required by Env-Wt311.03(b)(10), an application for a standard permit for minor projects such as 2020-00183 must include a functional assessment of **all** wetlands on the project site as specified in Env-Wt 311.10. The language of Wt311.03(b)(10) is included for reference below bold emphasis added.

Env-Wt 311.03 Applications for Standard Permits.

(b) A complete application package for a standard permit shall include the following:

*(10) For minor and major projects, a functional assessment of **all** wetlands on the project site as specified in Env-Wt 311.10;*

The implication of this requirement is that the northerly pond and its jurisdictional area must be evaluated for impacts and those impacts must be avoided and mitigated. The applicant has submitted a storm water management plan dated 4-1-2019 for the site to the Hollis planning board. The referenced storm water management plan is available in the town files. It can be seen from this plan that runoff from newly development is proposed to be directed to the northerly pond. This runoff presents significant impacts to the northerly pond, an area of jurisdiction. The northerly wetland must be addressed in the functional assessment required by Env-Wt 311.10

Improper method for functional assessment used

Env-Wt 311.10 (2) requires that a functional assessment be performed in accordance with US ACE Highway Methodology Workbook, dated 1993, together with the US ACE New England District Highway Method Workbook Supplement, dated 1999. If the applicant chooses not to use the method above, another scientifically-supported method must be cited and the reasons for using the alternate method must be substantiated. The language of Env-Wt 311.10 (2) is referenced below for clarity.

Env-Wt 311.10 Functional Assessment.

(a) Subject to (d) and (e), below, the functional assessment required by Env-Wt 311.03(b)(10) for minor or major projects impacting non-tidal wetlands, vernal pools, and watercourses shall be:

(1) Performed by a certified wetland scientist; and

(2) Completed using one of the following methods:

a. US ACE Highway Methodology Workbook, dated 1993, together with the US ACE New England District Highway Method Workbook Supplement, dated 1999, both available as noted in Appendix B; or

b. An alternative scientifically-supported method with cited reference and the reasons for the alternative method substantiated.

The developer has indicated in the functional assessment form of the application that the New Hampshire Method was used to conduct the assessment. Although the applicant is not required to use the referenced ACE method, the reasons why the ACE method was avoided must be substantiated. The applicant has not explained the reasons for choosing the New Hampshire Method or provided a citation to which version was used.

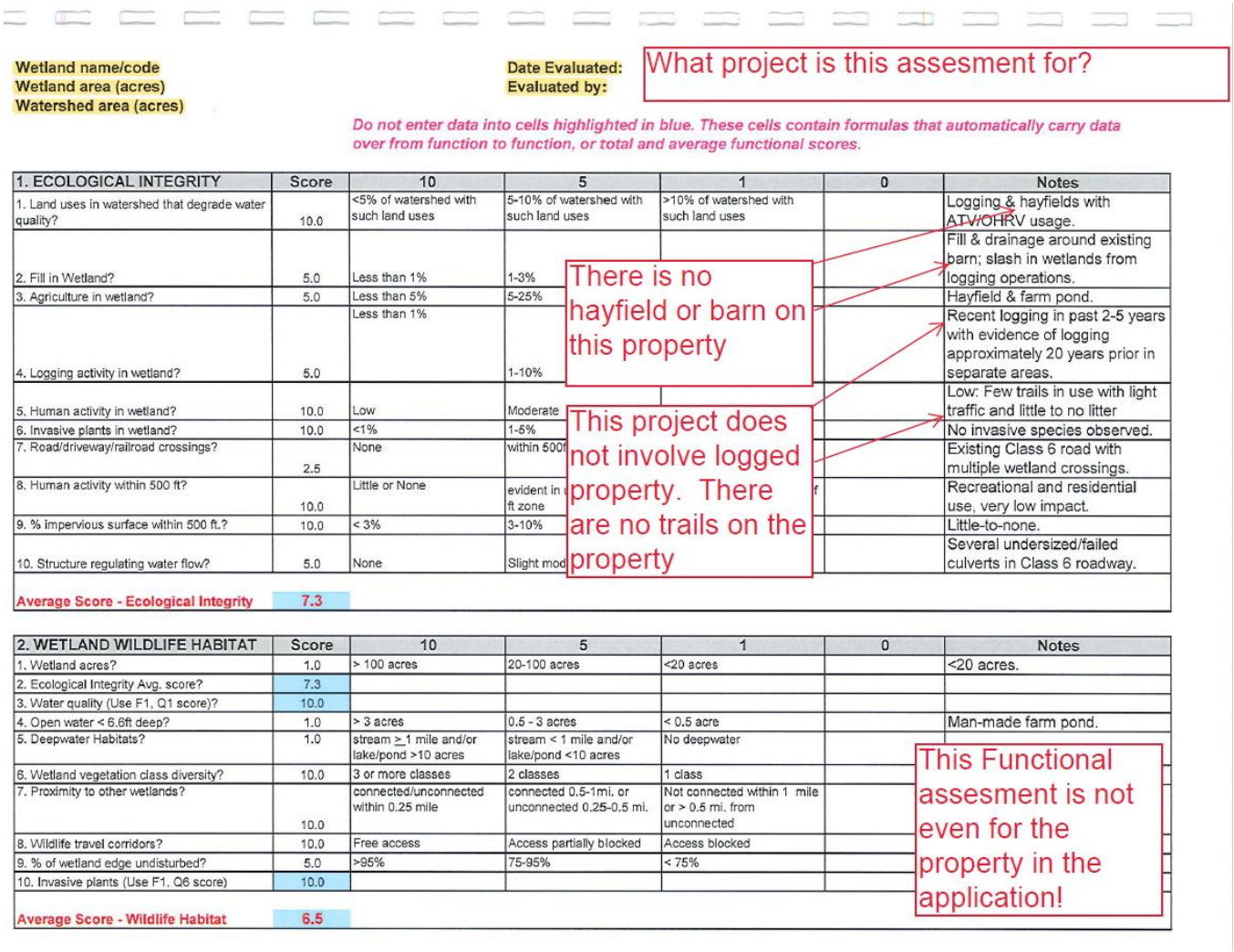
In addition, the New Hampshire method is not designed for impact analysis and has several limitations related to the level of detail it provides. The following page is an excerpt taken from the December 2015 Method for Inventorying and Evaluating Freshwater Wetlands In New Hampshire. It is likely that the applicant intended to cite this method in his application. Page 4 lists several limitations of the method which are relevant to this project. Yellow highlights added for emphasis.

Limitations of the NH Method

1. The NH Method is designed to evaluate functions and values. It is not intended to be used for the delineation of jurisdictional wetland boundaries.
2. The NH Method is not designed for use as a specific method for impact analysis. It needs to be coupled with best professional judgment and other methods of impact analysis, in order to yield detailed, site-specific information.
3. Low scores on one or more wetland functions should not be used to justify eliminating certain wetlands. Low scores may result from impacts that are temporary or will diminish over time. Low scores may also indicate opportunities for restoration. Low scores should be qualified based on the level of comparative information provided at the time of the evaluation.
4. The NH Method is not a substitute for more detailed site-specific studies. Where these studies are required, e.g. a detailed wildlife study or water quality assessment or wetland boundary delineation, other site specific methods should be used.
5. While small wetlands may be less biologically diverse and may have limited value for several functions (meaning that they may score lower), they may stand out for a certain special value (e.g. a rare species). These are typically captured under the Noteworthiness function. Noteworthiness ensures that important wetlands, which might rank low because of size or other factors, get equal consideration.
6. The NH Method is not well suited for evaluating exceptionally large riverine or lacustrine systems such as the Connecticut River or Lake Winnipesaukee. Bordering vegetated (fringe) wetlands on large bodies of water are best evaluated as discrete units that may be influenced by localized watersheds, embayments, coves or shorelines. See **Section 2D** for guidance on how to break up large wetland systems into smaller, more manageable evaluation units. Note that very large wetland systems can be broken in to smaller units for purposes of evaluation, and then recombined to present the final results
7. The NH Method provides a wetland evaluation procedure to rank and compare wetlands on a municipality-wide basis. When legal proceedings require detailed information about individual wetlands, additional detailed field data will be needed to supplement NH Method data. NH Method data alone would not be sufficient in this instance.
8. The NH Method uses a numerical score for each evaluated wetland function. It is important to also interpret the results based on the answers to the questions and not rely solely on numerical scores.
9. In the NH Method the Scores for each function **are not additive**. There is no single wetland score. Each wetland receives a single score for each of 12 functions. Adding the Function Scores to produce a single wetland score is a misuse of the NH Method.

Worksheets not filled out for the property in question

The functional assessment worksheets in the application provided do not appear to address this project specifically since there are no hayfields, barn or trails on the property.



Wetland name/code
Wetland area (acres)
Watershed area (acres)

Date Evaluated:
Evaluated by:

What project is this assesment for?

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		Logging & hayfields with ATV/OHRV usage.
2. Fill in Wetland?	5.0	Less than 1%	1-3%			Fill & drainage around existing barn; slash in wetlands from logging operations.
3. Agriculture in wetland?	5.0	Less than 5%	5-25%			Hayfield & farm pond.
4. Logging activity in wetland?	5.0	Less than 1%	1-10%			Recent logging in past 2-5 years with evidence of logging approximately 20 years prior in separate areas.
5. Human activity in wetland?	10.0	Low	Moderate			Low: Few trails in use with light traffic and little to no litter
6. Invasive plants in wetland?	10.0	<1%	1-5%			No invasive species observed.
7. Road/driveway/railroad crossings?	2.5	None	within 500f			Existing Class 6 road with multiple wetland crossings.
8. Human activity within 500 ft?	10.0	Little or None	evident in ft zone			Recreational and residential use, very low impact.
9. % impervious surface within 500 ft.?	10.0	< 3%	3-10%			Little-to-none.
10. Structure regulating water flow?	5.0	None	Slight mod			Several undersized/failed culverts in Class 6 roadway.
Average Score - Ecological Integrity	7.3					

There is no hayfield or barn on this property

This project does not involve logged property. There are no trails on the property

2. WETLAND WILDLIFE HABITAT	Score	10	5	1	0	Notes
1. Wetland acres?	1.0	> 100 acres	20-100 acres	<20 acres		<20 acres.
2. Ecological Integrity Avg. score?	7.3					
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		Man-made farm pond.
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?	10.0	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)	10.0					
Average Score - Wildlife Habitat	6.5					

This Functional assesment is not even for the property in the application!

The applicant should resubmit a functional assessment using a compliant method properly executed for the details of this specific project. Once such assessment is available it will need to be reviewed appropriately. The purpose of the NH Method is to rank wetlands within a municipality or a watershed. It is not intended for impact analysis. Low scores on a functional assessment are not justification to ignore the requirements for the three step process of firstly avoidance, secondly minimization and finally mitigation. The functional assessment's role in this application should only be as a factor in determining the amount of compensatory mitigation required if impacts to the wetland cannot be avoided and have been minimized to the maximum extent.

Storm water treatment at the Northerly Pond

Considering that the Env-Wt311.03(b)(10) requires the functional assessment to address all wetlands on the property, the impacts of storm water runoff from the proposed new construction must be addressed. The applicant has submitted a storm water management plan dated 4-1-2019 for the site to the Hollis planning board. In addition, the applicant has received conditional approval for an Alteration of Terrain permit (Aot-1741). A condition of that approval is the acquisition of a wetland permit. The storm water plan proposes approximately doubling the runoff into the northerly pond. Additional impervious roof surfaces from proposed buildings 10, 11 and 12 will flow into the Northerly pond.

To explain the increase in runoff I am including two citations from the storm water report. The first represents the existing conditions in a 10 year 24 hr storm, and the second represents the proposed conditions in the same 10 year storm.

Storm Water Management Report dated 4/1/2019 p10 below

1835 RAISANEN SDR PRE-DEV *Type III 24-hr 10 Year Storm Rainfall=4.42"*
Prepared by Fieldstone Land Consultants, PLLC
HydroCAD® 10.00-24 s/n 06037 © 2018 HydroCAD Software Solutions LLC Page 10

Summary for Subcatchment E1S: TO EXIST. POND

Runoff = 0.31 cfs @ 12.72 hrs, Volume= 0.111 af, Depth> 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Year Storm Rainfall=4.42"

Area (sf)	CN	Description
17,670	98	Paved parking, HSG A
7,400	98	Roofs, HSG A
12,000	96	Gravel surface, HSG A
249,370	39	>75% Grass cover, Good, HSG A
65,500	30	Woods, Good, HSG A
351,940	43	Weighted Average
326,870		92.88% Pervious Area
25,070		7.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	100	0.0500	0.11		**Sheet Flow, A=>B** Woods: Light underbrush n= 0.400 P2= 2.98"
5.5	400	0.0300	1.21		**Shallow Concentrated Flow, B=>C** Short Grass Pasture Kv= 7.0 fps
2.1	260	0.0100	2.03	6.77	**Parabolic Channel, C=>D** W=10.00' D=0.50' Area=3.3 sf Perim=10.1' n= 0.035 High grass
23.0	760	Total			

For the post development condition we see that runoff to the northerly pond nearly doubles and 15,790 sf of paved parking is included.

Storm Water Management Report dated 4/1/2019 p30 below

1835 RAISANEN SDR POST-DEV *Type III 24-hr 10 Year Storm Rainfall=4.42"*
Prepared by Fieldstone Land Consultants, PLLC
HydroCAD® 10.00-24 s/n 06037 © 2018 HydroCAD Software Solutions LLC Page 30

Summary for Subcatchment 108: TO EXIST. POND

Runoff = 1.38 cfs @ 12.31 hrs, Volume= 0.207 af, Depth> 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 2.00-24.00 hrs, dt= 0.02 hrs
Type III 24-hr 10 Year Storm Rainfall=4.42"

Area (sf)	CN	Description
15,910	98	Paved parking, HSG A
15,180	98	Roofs, HSG A
11,240	96	Gravel surface, HSG A
136,520	39	>75% Grass cover, Good, HSG A
178,850	53	Weighted Average
147,760		82.62% Pervious Area
31,090		17.38% Impervious Area

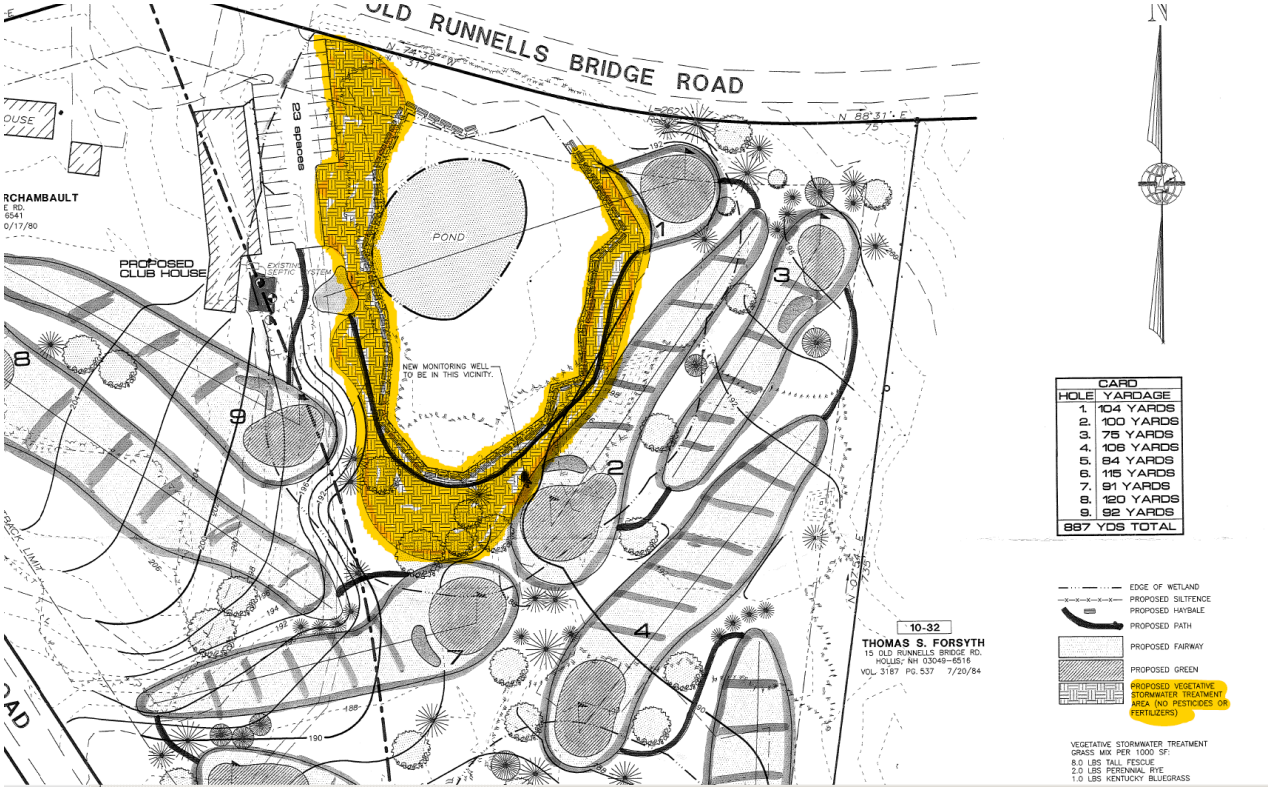
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0300	0.13		**Sheet Flow, A=>B** Grass: Dense n= 0.240 P2= 2.98"
2.1	220	0.0600	1.71		**Shallow Concentrated Flow, B=>C** Short Grass Pasture Kv= 7.0 fps
0.7	85	0.0100	2.03	6.77	**Parabolic Channel, C=>D** W=10.00' D=0.50' Area=3.3 sf Perim=10.1' n= 0.035 High grass
15.4	405	Total			

Considering the impact of the proposed development on the runoff into the northerly pond, the requirements of Env-Wq 1507.03 apply. I have included the regulation language below for clarity.

Env-Wq 1507.03 Pollutant Discharge Minimization Requirements.

(a) The stormwater treatment practices described in Env-Wq 1508.03 through Env-Wq 1508.10 shall be acceptable methods for minimizing pollutant discharges to surface waters of the state, provided that the requirements of this section are met along with all method-specific criteria.

In reviewing the submitted plans, I can find no means of addressing the pollutant discharges as required by Env-Wq 1507.03. This project should not be considered for approval until the deficiencies in the storm water management model are addressed. Suitable pollution discharge minimizations must be implemented in accordance with Env-Wq 1507.03. The additional storm water from roofs is directed across a grass covered area and may no longer be considered strictly as roof runoff alone since it is likely to pick up other pollutants including fertilizers along its path to the northerly wetland. The prior approved use of the property included a vegetated buffer to protect the wetland from golf course runoff. I have included an image of the approved plan below. The plan is on file at Hollis Town Hall and is dated Aug 15,1997.



1997 golf course approved plan showing extent of runoff protection for the northerly pond.

It is not clear from the storm water plan provided if the runoff directed into the northerly pond is treated in any way to minimize the discharge of pollutants. I can find none of the practices described in Env-Wq 1508.03 through Env-Wq 1508.10 implemented in the proposed design. Is the applicant proposing a vegetative buffer as a means to accomplish this? A vegetative buffer is not permitted in this case since the runoff is due to several multifamily structures. The language of Env-Wq 1508.09 (i) is provided for reference below.

Env-Wq 1508.09 Stormwater Treatment Practices: Vegetated Buffers. Vegetated buffers, including but not limited to residential or small pervious area buffers, developed area buffers, roadway buffers, and ditch turn-out buffers, shall be used only as follows:

…

(i) If the practice is for a residential or small impervious area, the following requirements also shall be met:

(1) Runoff shall be received only from one or more of the following:

a. A single family or duplex residential lot;

b. A developed area with less than 10% imperviousness where the flow path over the developed area does not exceed 150 feet; or

c. An impervious area not greater than one acre where the flow path across the impervious area does not exceed 100 feet;

Problems with the Alteration of Terrain application

The Alteration of Terrain Application submitted has several improperly marked claims that are related to wetlands on the site. There **is** a wetland on the property. Later in this letter I have documented why the northerly pond is a preexisting natural wetland. Since it was dredged into the water table as Mr Guida indicates, item 3 on the application should also be marked yes. In addition, the application should include information addressing discharge of phosphorus into the northerly pond. I have included an image of page 2 of the AOT application on the following page showing the incorrectly marked items.

☐ Excavation Only ☒ Residential ☐ Commercial ☐ Golf Course ☐ School ☐ Municipal
☐ Agricultural ☐ Land Conversion ☐ Other:

7. PROJECT LOCATION INFORMATION

Project Name: Bella Meadows

Street/Road Address: 1 A&B Old Runnels Bridge Road

Town/City: Hollis | County: Hillsborough

Tax Map: 10 | Block: | Lot Number: 33-1 | Unit:

Location Coordinates: ☐ Latitude/Longitude ☐ UTM ☐ State Plane

Post-development, will the proposed project withdraw from or directly discharge to any of the following? If yes, identify the purpose.

1. Stream or Wetland Purpose: Northerly Pond was a natural wetland before dredging	☐ Yes ☒ No	☐ Withdrawal	☐ Discharge
2. Man-made pond created by impounding a stream or wetland Purpose:	☐ Yes ☒ No	☐ Withdrawal	☐ Discharge
3. Unlined pond dug into the water table Purpose: Northerly Pond us dug into the water table	☐ Yes ☒ No	☐ Withdrawal	☐ Discharge

Post-development, will the proposed project discharge to:

- A surface water impaired for phosphorus and/or nitrogen? ☒ No ☐ **Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen**
- A Class A surface water or Outstanding Resource Water? ☒ No ☐ **Yes - include information to demonstrate that project will not cause net increase in phosphorus and/or nitrogen**
- A lake or pond not covered previously? ☒ No ☐ **Yes - include information to demonstrate that project will not cause net increase in phosphorus in the lake or pond**

Is the project a High Load area? ☐ Yes ☒ No
If yes, specify the type of high load land use or activity: _____ 32 Condominium units on 8 acres

Is the project within a Water Supply Intake Protection Area (WSIPA)? ☐ Yes ☒ No
Is the project within a Groundwater Protection Area (GPA)? ☐ Yes ☒ No
Will the well setbacks identified in Env-Wq 1508.02 be met? ☒ Yes ☐ No

Note: Guidance document titled "*Using NHDES's OneStop WebGIS to Locate Protection Areas*" is available online. For more details on the restrictions in these areas, read Chapter 3.1 in Volume 2 of the NH Stormwater Manual.

Is any part of the property within the 100-year floodplain? ☐ Yes ☒ No
If yes: Cut volume: _____ cubic feet within the 100-year floodplain
Fill volume: _____ cubic feet within the 100-year floodplain

☐ Project **IS** within ¼ **mile of a designated river** Name of River:
☒ Project is **NOT** within ¼ mile of a designated river

☐ Project **IS** within **a Coastal/Great Bay Region community - include info required by Env-Wq 1503.08(l) if applicable**
☒ Project is **NOT** within a Coastal/Great Bay Region community

8. BRIEF PROJECT DESCRIPTION (PLEASE DO NOT REPLY "SEE ATTACHED")

The project propopses 12 mi;t-family buildings containing 32 units on Tax Map 10, Lot 33-1. The lot was originally developed as a chicken farm and more recently as a 9 hole golf course. The proposed buildings will be serviced by on-site septic and municipal water (Pennichuck) and will require approximately 1,190 LF of roadway to access the buildings.

9. IF APPLICABLE, DESCRIBE ANY WORK STARTED PRIOR TO RECEIVING PERMIT

The former farm contructed a farm pond and the golf course constructed a small irrigation pond.

Page 2 of the applicant's Alteration of Terrain permit submittal above.

Considering that the Alteration Of Terrain permit was conditionally approved pending this wetland review, the deficiencies related to wetlands must be addressed before final approval of the AOT permit can be granted.

Notification deficiency

It is apparent from the application that not all abutters have been notified per RSA 672:3. The language of RSA 672:3 is included below. I have added emphasis in bold highlighting the specific language that was not addressed by the applicant's notification. It is my understanding that this language applies to notification with regard to wetland permits as well. Can you confirm this?

672:3 Abutter. – "Abutter" means any person whose property is located in New Hampshire and adjoins **or is directly across the street** or stream from the land under consideration by the local land use board. For purposes of receiving testimony only, and not for purposes of notification, the term "abutter" shall include any person who is able to demonstrate that his land will be directly affected by the proposal under consideration. For purposes of receipt of notification by a municipality of a local land use board hearing, in the case of an abutting property being under a condominium or other collective form of ownership, the term abutter means the officers of the collective or association, as defined in RSA 356-B:3, XXIII. For purposes of receipt of notification by a municipality of a local land use board hearing, in the case of an abutting property being under a manufactured housing park form of ownership as defined in RSA 205-A:1, II, the term "abutter" includes the manufactured housing park owner and the tenants who own manufactured housing which adjoins or is directly across the street or stream from the land under consideration by the local land use board.

Below is an image taken from application 2020-00183 showing that only 4 abutters were notified of this application.

12/26/2019

FLC#1835.00 / KMR

List of Abutters
Tax Map 10 Lot Number 33-1
Hollis, New Hampshire

Map 10 Lot 33
Patricia Archambault
Susan F. Hammond
52 Runnells Bridge Road
Hollis, NH 03049

Map 5 Lot 5
Marc J. Goupil
28 South Depot Road
Hollis, NH 03049

Map 5 Lot 4
Thomas E. Mullin
24 South Depot Road
Hollis, NH 03049

Map 10 Lot 32
Daniel J. Brideau
15 Old Runnells Bridge Road
Hollis, NH 03049

Engineer:
Fieldstone Land Consultants, PLLC
206 Elm Street
Milford, NH 03055

From other submittals at the municipal level, there seem to be quite a few more properties that should receive notification. Image added below for reference taken from the project site plan submitted to the town of Hollis in 9-23-2019

ABUTTER INFORMATION:

MAP 10 LOTS 8 & 19
DIANE M. URQUHART REV. TRUST
DIANE M. URQUHART, TRUSTEE
2 FERSON STREET
NASHUA, NH 03060-4123

MAP 5 LOT 16
ALAN C. ARCHAMBAULT
25 IRENE DRIVE
HOLLIS, NH 03049

MAP 10 LOT 33
PATRICIA ARCHAMBAULT
SUSAN F. HAMMOND
52 RUNNELLS BRIDGE ROAD
HOLLIS, NH 03049

MAP 10 LOT 32
DANIEL J. BRIDEAU
15 OLD RUNNELLS BRIDGE ROAD
HOLLIS, NH 03049

MAP 5 LOT 17
ALPINE GROVE, LLC
C/O ALAN ARCHAMBAULT
19 SOUTH DEPOT ROAD
HOLLIS, NH 03049

MAP 10 LOT 34-A
STATE OF NEW HAMPSHIRE
ATTN: TAX DEPARTMENT
P.O. BOX 401
CONCORD, NH 03302

MAP 5 LOT 5
MARC J. GOUPIL
28 SOUTH DEPOT ROAD
HOLLIS, NH 03049

MAP 5 LOT 18
SCOTT C. & KAREN E. BROWN
11 SOUTH DEPOT ROAD
HOLLIS, NH 03049

MAP 10 LOT 7
DREYFUS PROPERTIES, LLC
175 RIDGE ROAD
HOLLIS, NH 03049

MAP 5 LOT 4
THOMAS E. MULLIN
24 SOUTH DEPOT ROAD
HOLLIS, NH 03049

ENGINEER:
FIELDSTONE LAND CONSULTANTS, PLLC
206 ELM STREET
MILFORD, NH 03055

Based on the notification discrepancy, it would not be proper to allow this review to proceed without a re submittal which included proper notification.

Env-Wt 307.06 Rare species habitat to be destroyed

The language of Env-Wt 307.06 below describes a requirement to protect the habitat of threatened and endangered species. This specific project proposes filling a pond within 600 ft of the Nashua river. The Natural Heritage Bureau has information indicating that rare wildlife is in the vicinity. Although the NHB did not identify the species I have heard that the report is of Blanding's turtle. Can the NHDES confirm the report? The relevant language is listed below bold text emphasis added.

Env-Wt 307.06 Protection of Rare, Threatened or Endangered Species and Critical Habitat.
No activity shall jeopardize the continued existence of a threatened or endangered species, a species proposed for listing as threatened or endangered, or designated or proposed critical ***habitat*** *under the:*
…
(b) State Endangered Species Conservation Act, RSA 212-A; or

Regardless of whether the report is of a Blanding's turtle or not, the language is specific about the requirement to preserve not only endangered species but also their habitat. It seems that the southerly pond qualifies as important habitat for Blanding's turtle due to the fact that they are known to use human modified areas such as the southerly pond. In addition, the proximity to the Nashua River is also an important factor. I have included an excerpt from the NH Wildlife Action Plan and emphasized a paragraph below in red. The full document is available at https://www.wildlife.state.nh.us/wildlife/profiles/wap/reptile-blandingsturtle.pdf

Habitat impacts from development of surrounding uplands (Threat Rank: High)

Blanding's turtles use a mosaic of wetland, aquatic, and upland habitats, often traveling a mile or more among them. Thus, a large amount of land is required to protect a population. Reduction in habitat quality or availability may harm populations by causing indirect mortality due to increased dispersal across inhospitable habitat, increased predation, and increased desiccation.

In late May to early July, female turtles leave wetlands in search of an area with an open canopy and bare ground to lay eggs. If nesting habitat is not connected to occupied wetland habitat, adult mortality may occur. Humans and their pets can disturb nesting females and their eggs, and although turtle populations are less sensitive to egg survival than to adult survival, high nest mortality or lack of nesting habitat may harm populations.

Blanding's turtles may use human-modified areas such as gravel pits, residential lawns, and agricultural areas, for nesting. Thus, adults in these areas are vulnerable to predation, road mortality, disturbance, and mowing equipment (Marchand and Litvaitis 2004a). Nests near some ecological edges, such as those nearby to development, may also be more vulnerable to predation (Temple 1987).

The UNH cooperative extension produced a brochure about the turtles in New Hampshire. The brochure can be found at the link below. https://extension.unh.edu/resource/blanding%E2%80%99s-turtles-new-hampshire-brochure. I have included an image of the habitat section and highlighted the relevant paragraph with a red rectangle.

Habitat

As a semi-aquatic species, Blanding's turtles spend significant time both in the water and on land. They use numerous types of wetland habitats including marshes, swamps, bogs, beaver ponds and vernal pools. They prefer densely vegetated wetlands, and will use vernal pools extensively while traveling across the landscape. Blanding's turtles use the uplands that connect these systems for nesting and travel between wetlands.

Landowners often encounter Blanding's turtles in their yards when females are looking for nesting areas or when turtles are on their way to another wetland. In mid-May to early July, female Blanding's turtles lay 8 to 10 eggs in sandy, loamy well-drained soils in upland areas exposed to direct sunlight (no tree canopy shading). Nesting sites include disturbed soils, pastures, powerline corridors, roadsides, and yards.

Even landowners far from a wetland might spot Blanding's turtles – researchers have seen females move almost two miles to find a good nesting spot! The eggs develop under the soil, and by the end of summer, young turtles emerge quickly and quietly to make their way to a nearby wetland.

The highlighted paragraph is specifically relevant to this application since Mr. Guida, noted in his narrative, that the site soils are "…predominantly excessively drained Hinckley **loamy sand** with a **very high saturated hydraulic conductivity**." (Emphasis added) This is the habitat that Env Wt 307.06 protects.

NHDES determination of whether the Northerly Pond is a preexisting wetland

Mr. Guida includes a unique request in his project overview narrative. I have attached an image of the the permit application page and emphasized the language with a rectangle below. The town of Hollis planning board has requested that the NHDES provide a recommendation on whether the northerly pond is a preexisting natural wetland or whether it was created in the 1960s. The answer to this question will determine whether the town of Hollis will apply its 100 foot wetland buffer to the northerly pond or not. The implications of the application of the town's 100 foot buffer affect the management of storm water that is directed to the northerly pond.

The central issue is that on the local level, the Town of Hollis regulations consider man-made wetlands to be exempt and non-jurisdictional. As such the town has requested that we obtain a determination from NHDES Wetlands Bureau regarding the status of both ponds. Please accept this letter as a formal request for a determination regarding the classification of the two ponds on site that were independently identified as man-made by two Certified Wetland Scientists.

Sincerely,

Fieldstone Land Consultants, PLLC

Christopher A. Guida, CSS, CWS

Research of historical maps has turned up some information that Mr. Guida may not have considered when evaluating the ponds on the site. I have included an image of Mr. Guida's project overview narrative below with a rectangle emphasizing his comment that the site contains an altered wetland.

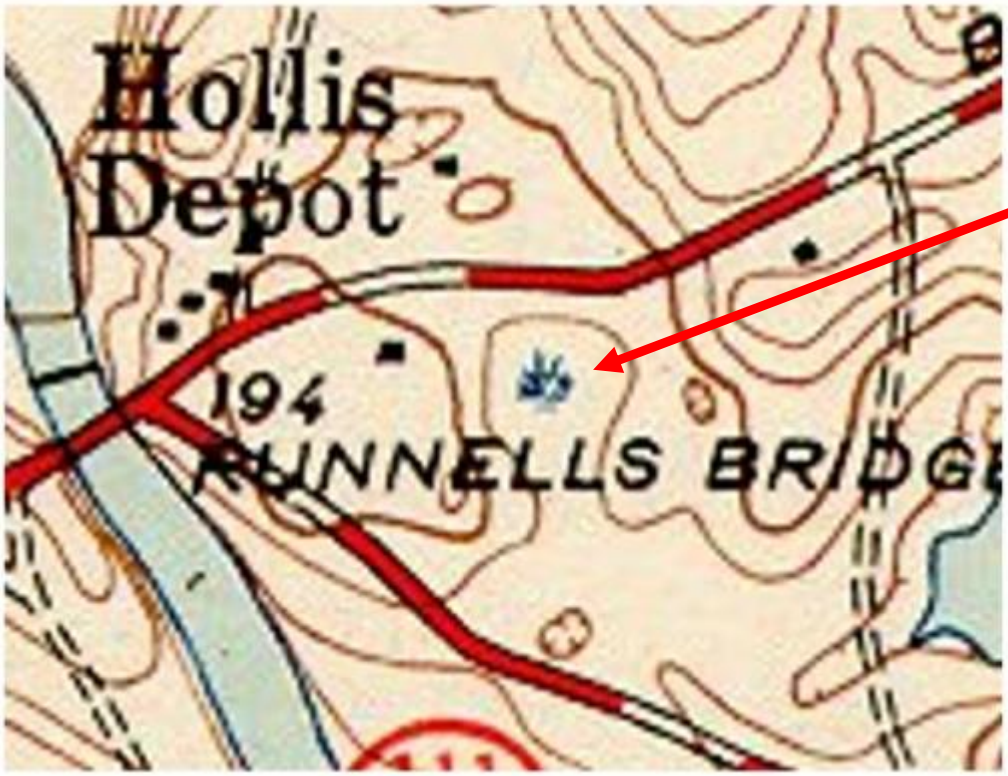
Project Overview:

The parcel is situated between Old Runnells Bridge Road and South Depot Road (NH Route 111A) in Hollis New Hampshire. The site was originally developed as a chicken farm in the early 1960's. According to the former owner the former barns and large chicken coops, were demolished in the late 1960's. The property was redeveloped as a small 9-hole golf course in the mid 2000's which is now defunct. The currently proposed redevelopment will consist of multi-unit residential apartment units.

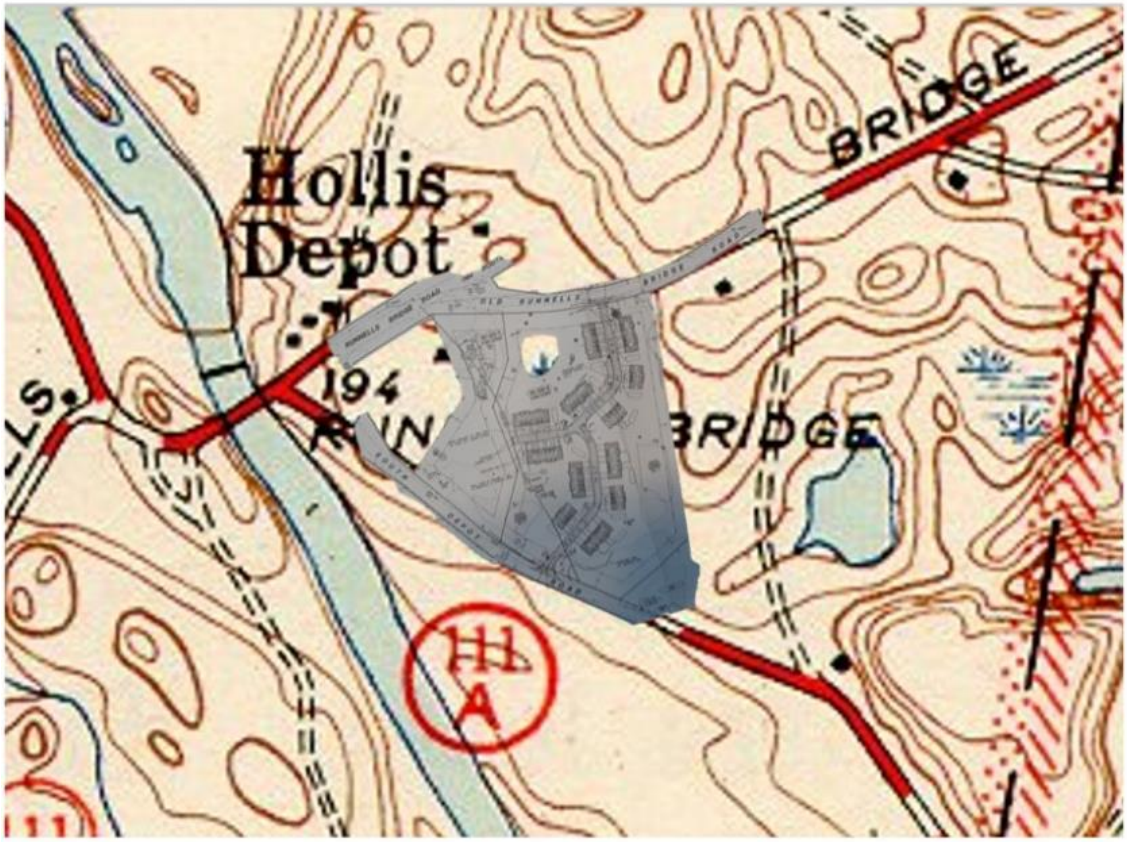
The overall site topography slopes gently from north to south and soils on site are predominantly excessively drained Hinckley loamy sand with a very high saturated hydraulic conductivity. There are two manmade ponds on the property; the northern pond was created as a farm pond in the early 1960's to support the former chicken farm operation. The southern pond was created around 1995-1998 to provide water source for the needed irrigation system installed as part of the golf course development. The northern farm pond was repurposed as an irrigation pond and connected by drainage/irrigation lines to the southern irrigation pond. Aerial photos and site characteristics support the evaluation that both the ponds have been man-made/altered and manipulated over time including maintenance dredging, expansion and re-grading. The man-made ponds are fed by intercepting groundwater and do not intercept and/or affect any adjacent wetland system.

There are two ponds on the site. The northerly pond is a natural wetland. It was dredged in the 1960s according to the applicant. I have however found that the wetland at that location is shown on USGS quad maps going back to 1944. The existence of the wetland on the early maps proves that the area of the northerly pond is a preexisting natural wetland.

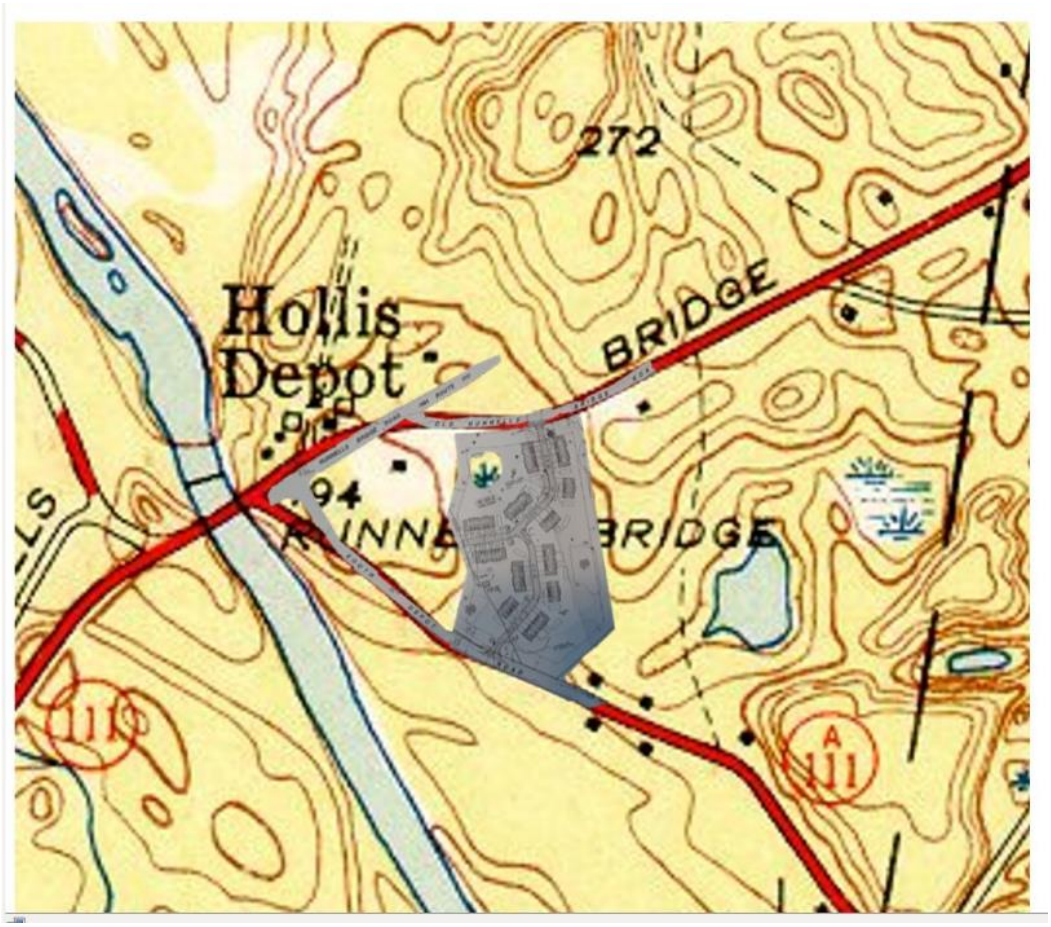
1944 USGS Pepperell Quad below



Note the pond identified on the map



1944 USGS Pepperell Quad with site plan overlaid above



1950 USGS Pepperell Quad with site plan overlaid above

I believe these circumstances may have led to confusion particularly since Mr. Guida chose to describe both ponds in the same sentence. A more precise description would be that historic maps support the conclusion that the southerly pond was man-made. The northerly pond was a natural wetland before being deepened. This fact can be seen by observing its location on the USGS survey maps of 1944 and 1950 depicted below. Your input in this matter will be greatly appreciated as it not only bears on the decision of the Hollis Planning board, but the approval of the related Alteration of Terrain permit could also be impacted

Conclusion

I have demonstrated many areas of non-compliance with the submitted wetlands permit as well as the submitted Alteration Of Terrain permit. I am requesting that the NHDES withhold approval of both wetland permit 2020-00183 and Alteration of Terrain permit AOT-1741 until the project plans are brought into full compliance with the regulations cited above and resubmittals are made and reviewed. In addition, I am requesting that the NHDES confirm that the northerly pond on the site is a natural wetland that existed prior to the 1960s dredging operation referenced by the applicant.

Regards,

Joseph Garruba