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Preliminary Assessment Report, Map 107, Lots 40-43 & 63
TOWN OF NORTHUMBERLAND, NEW HAMPSHIRE

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The Town of Northumberland (Town) seeks to evaluate the former Wausau Mill’s lagoon site (Site) for future industrial development. The Site, commonly referred to as the lagoon site, is comprised of five separate parcels, identified by the Town as Map 107, Lots 40-43 and 63, are currently owned by Chapman North County Development, LLC (CNCD), see attached Figure 1. For several years, the Town and CNCD have worked to attract new businesses and industrial development with the goal of forming the “WHITE MOUNTAIN ENERGY PARK” (WMEP), which is to be compromised of the former mill buildings site on the easterly side of Route 3 and the Site, on the westerly side of Route 3.

The Site, commonly referred to as the Lagoon site, is comprised of five separate parcels, identified by the Town as Map 107, Lots 40-43 and 63. The site totals 63+/− acres and has three points of access; Route 3, Mountain View Road and West Street, the latter being through the residential neighborhood to the north. The Site is the former location of the Wastewater Treatment Facility (WWTF) that serviced the Wausau Mill until its closure in 2007. The WWTF included a control building with headworks, three clarifiers, a lagoon and associated appurtenances and connection piping. The control building, headworks and clarifier sides have been removed from the site’s eastern lots, while the lagoon has been breached to limit the volume of water that continues to accumulate in it.

The Site has a number of existing improvements, see Figure 2, that make it desirable for industrial development, including a privately-owned (by CHCD) three-phase electrical power line that is connected to an electrical power co-generation facility on the easterly portion of former mill site. The Co-Gen, owned by Quasar Wave (Q Hydrogen), is slated to go on-line in the fall of 2020 to supply power to the mill former mill complex including the project site. The site also has a large tap into the natural gas pipeline (owned by Portland Natural Gas Transmission Service (PNGTS)). Finally, the site maintains a once-permitted water conveyance to the confluence of the Connecticut and Upper Ammonoosuc Rivers that served as the discharge line for the wastewater lagoons.

Conversely, the site has some challenges that need to be investigated further so that the development potential can be better understood and evaluated. Identified challenges include floodplains, wetland areas, access to Route 3 and a residential neighborhood as a direct abutter.

Nestled amongst the above site characteristics are a power transmission line owned by Eversource, a land locked parcel (Lot 58) owned by Eversource and the State of New Hampshire-owned railroad corridor. Each of these infrastructure elements has effects on the potential development of the Site.
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As described above, the Site has a long history providing support to the Wausau Mill/Groveton Paper Board production on the opposite side of Route 3. For the most part, the other side of the road and Site continue to be owned by Chapman North County Development, LLC (CNCD). At the present time, CNCD is actively marketing for development, the parcels on the easterly side of the road, as well as the Site. Due to the historic nature of the two locations, their proximity to each other, the common connection to the proposed Co-Gen electrical power generation facility, it is challenging, at times to separate the two locations.

ZONING

The Site is contained within the Town’s Heavy Industrial Zoning District, see Zoning Map in Appendix 2. The District description cites examples of industries that would be allowed within it as: chemical plants, oil refineries, blast furnaces, foundry rolling mills, paper mills, fertilizer and reduction plant, varnish plants, soap factories and wood chip power plants. The ordinance goes on to permit more generic uses such as manufacturing facilities, storage and distribution facilities for fuels, mining, warehouses as well as businesses allowed within the light industrial district. The Ordinance does contain language restricting business practices that generate pollution harmful to the environment as well as noise, smoke, odors or other hazards that carry beyond the parcel’s boundaries.

It is noted that the largest portion of the Site, lot 63 is located within the Floodplain of the Connecticut and Upper Ammonoosuc Rivers, see Figure 3. As such, it appears that lot 63 would also be considered to be part of the Northumberland Flood Plain Zoning. The list of uses allowed within the Connecticut River Floodplain Zone is quite limited. Most development that would be interested in lot 63 would require a variance from the local Zoning Board of Adjustment to be permitted. The Site’s historic industrial use of wastewater treatment (lagoons) will be beneficial in securing a variance at the local level. More discussion of lot 63 and the floodplain are included later in the report.

WATER AND SEWER INFRASTRUCTURE

Underwood Engineers has reviewed the Village of Groveton’s local municipal utilities, specifically water and wastewater in terms of overall capacity and proximity to the Site.

Water. The Village of Groveton operates a water utility servicing approximately 780 connections in the Village of Groveton and its immediate surroundings. The system is supplied from two wells and is supported by two tanks for storage. The system currently operates at an average of 200,000 gallons per day, but it is estimated to have capacity in the range of 400,000 to 450,000 gallons per day. The Town has advanced efforts over recent years toward identifying new source (well) locations as well as increased/improved storage locations. The Town has also constructed new replacement mains in the area of the site to replace antiquated infrastructure as well as to provide improve the system’s hydraulic
effectiveness. In 2017-2018, as part of a larger water and sewer project, the Groveton system installed a new dedicated 10” water main along the Site’s Route 3 frontage to the site’s driveway specifically to afford a new extension into the Site. A 10” extension along a constructed access road and connecting to Village water on Mountain View Ave. or West Street would be a must to attract development of the Site.

Wastewater. The Village of Groveton operates a wastewater utility to service the Village of Groveton. The service area of the water system and wastewater system are approximately the same. In total, the wastewater system provides service to approximately 560 connections, resulting in approximately 120,000 gallons of flow per day. The Site would be serviced by the system’s wastewater treatment lagoons. Over recent years, the Village has actively pursuing and reducing the Infiltration and Intrusion (I/I) into the system, which is reduced the treated volumes of water by nearly 50% over historic records. In general, the Site is located lower than the existing sewerage, so a gravity connection is not likely, however, the Site could be serviced by a low pressure system of individual grinder pumps running westerly along the proposed access road, see Figure 4, or a short run gravity system with a small commercial pump station as depicted in Figure 5. Gravity sewer exists within the limits of Mountain View Street and the terminus of West Street to the north of the Site, so a location to discharge to the existing sewer system is available relatively close to the Site. In all likelihood, sewer service for the easterly portion of the site will be discharged to the Mountain View Ave system, whereas development of Lot 63 will likely discharge wastewater to the sewer system on West Street rather than cross the railroad corridor with the utility. It is noted that both of the gravity sewer systems servicing Mountain View Ave and West Street are only 6” sewer mains, so a pipe size upgrade may be necessary. Fortunately, the 6” runs are relatively short and the sewer main in West Street is substantially larger at 15”.

SITE ACCESS ROAD

Access to the Site is envisioned to include a newly constructed access road beginning at the existing curb cut on Route 3 and advancing westerly to the south of the West Street residential neighborhood, see Figures 4 & 5. The precise layout of the access road is subject to change, but Underwood has prepared two alternatives that would afford reasonable access through the site’s easterly upland area between the Route 3 access point and the railroad corridor. The first alternative stays closed to the West Street residential properties and presents two terminus options, one being a at the end of Mountain View Street and a second being on the westerly side of the railroad corridor presented as a public-at-grade crossing. This access road would support the subdivision of the easterly portion of the site into three or four lots for development and is depicted with public water extension and gravity public sewer. A second alternative is similar to the first, although it quickly diverges from its proximity to the West Street backyards. This alternative also has a connection with Mountain View Street at the end, but a private crossing depicted for the railroad corridor. This layout seems to support three larger lots for development, and it is shown with public water in the road, but a low pressure sewer system with forcemain in the roadway. Depending on the waste volumes and make-up, a low pressure sewer would easily service a small industrial development like this. Is should be noted that they alternatives are fluid and there is nothing stopping Alternative A from the private at-grade crossing extending to Lot 63 or having a low pressure sewer forcemain
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system, nor is there any engineering limitations prohibiting Alternative B from being extended to a public at-grade railroad crossing complete with gravity sewer to a pump station on the westerly side of the tracks. More information about the railroad crossing, is presented below.

The “north country”, including Northumberland, as northern New Hampshire is affectionately referred, is becoming a destination location for ATV trail-riding. Utility corridors are a common element of the ATV trail system and as such, the proposed access road is shown to include a multi-use path along one side that could serve as an ATV connection between Eversource’s utility easement and Route 3.

RAILROAD CORRIDOR

The majority of the Site, Lot 63, approximately 53 acres is located to the west of the railroad corridor that parallels the terminus of West Street. For certain types of businesses and development, the ready access to a potential rail siding may be a significant plus, however for others, the rail represents an access and utility encumbrance between the eastern portion of the Site and the considerably large western portion. At the present time, the rail is infrequently travelled by train, so the encumbrance is not so much a physical barrier (train blocking the access when passing) or sensory (noise and vibration during passing), but rather the legal and financial obstacles of acquiring easements necessary to cross and if warranted, install utilities through/under the rails to connect the two portions of the Site. Since the rail is owned by the State of New Hampshire, that effort will typically be easier than negotiating with a private railroad owner, but nevertheless there is a process associated with it. In speaking with Louis Barker of NHDOT’s Bureau of Rail & Transit about the crossing options, Mr. Barker confirmed that both public and private crossing options exist. Should the Town or developer prefer a public-at-grade crossing, it would be required to be fully compliant with the current standards of NHDOT, Federal Rail Administration (FRA), and MUTCD. Given the vertical elevation difference between the rail bed and the ground on each side of the rail corridor, particularly on the western side of the corridor, a compliant public-at-grade crossing will be challenging. Less challenging and less regulatorily rigorous, a private crossing, if appropriate to the proposed use, will likely be more appealing to developers. A private crossing does require a token annual fee. Mr. Barker went on to state however, that the State is looking for opportunities to eliminate crossings, rather than encouraging them and relative to this particular location, with West Street crossing the tracks in such close proximity to the north, whether or not a new crossing would be supported per RSA 373:1 and RSA 373:1a.

ROUTE 3 CONSIDERATIONS OF SITE DEVELOPMENT

The Site has existing frontage and an existing curb cut along Route 3. The curb cut aligns very closely with the access to the former Wausau Mill site across Route 3. It is reasonable to presume that the development site access road will enter Route 3 at this location. The bridge to the immediate south on Route 3 and poor alignment geometry to the north of the existing curb cut support the continued use of the existing access location. Recognizing that the Site and the adjacent
property across Route 3 are owned by CNCD, a meeting with NHDOT was conducted to discuss development opportunities and the potential effects on traffic volumes in the immediate area. On June of 2019, Underwood Engineers and representatives from the Town of Northumberland met with DOT District 1 personnel at the Lancaster office. The meeting began by discussing the entrance point to the former Wausau Mill parcel (easterly side of Route 3) and its relationship to the covered bridge access and the proximity to the (skewed) intersection of West Street (south), including some minor discussion around increased ATV traffic using Route 3 in this area. Following that, the discussion included the potential traffic impacts that could result for proposed development on both side of the road, assuming the proposed access at the existing curb-cut, albeit improved; increased volumes, turning movements, etc. The discussion did not include any specific end users or traffic volumes, and as such, DOT was unable to make specific recommendations or commitments, however there was a general concurrence that the existing site access location was probably the best proposed access point.

It is worth noting that DOT did express concerns that with the potential for over 100 acres of industrial development, that some improvements to the corridor may be needed and that the owner, CNCD, should be pro-active in planning for the potential build-out so as not to be nearly complete and then subjected to a significant unanticipated capital outlay for any required improvements.

NEW HAMPSHIRE DIVISION OF HISTORICAL RESOURCES

Underwood performed an on-line review for historically sensitive properties through the State of New Hampshire Division of Historical Resources website portal. The portal query outlined two items of potential historical significance in the vicinity of the project, being:

- The Groveton Village Historic District – the project is not in the village, the village is to the immediate north of the project area.
- White Mountain Railroad – the Site is bi-sected by the railroad corridor.

The on-line review did identify one former property of significance that was once one of the parcels (lot 40) contained within the SITE, NHDHR Inventory # NUM0002, a Weston Lumber Company Duplex residential building at 36 Main Street as an early example of multi-family industrial housing. The home, however, was lost at some point between 2003 and 2006. The NHDHR record for NUM0002 is contained within the appendices of the report.

Underwood submitted a Request for Project Review (Technical Assistance Level) request to the New Hampshire Department of Historical Resources. The RPR Response is included in the appendices of the report as well. Parcels like this, particularly near the confluences of rivers, are typically Archeologically sensitive. Not surprisingly, the review has been returned recommending that a Phase 1A Archeological Survey be performed to determine the level of prior disturbance related to past land uses.

The review also suggests that impacts around the White Mountain Railroad and nearby Groveton Village Historic District should be avoided.
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NHDES LAND RESOURCES MANAGEMENT

The site is bordered along its entire southern boundary by the Upper Ammonoosuc River. The river is a water body covered under the New Hampshire Shoreland Protection Act. All work within 250’ of the protected shoreland (referred to as the Shoreland buffer) will require a permit. As the Site has historically been used industrially, including heavy disturbance over the years, the Shoreland Permitting effort will need to be adjusted accordingly.

The Site is relatively large with approximately 10 acres on the eastern portion and 53 acres on the western portion. Development proposals will likely involve significant amounts of disturbance throughout the Site. Typically any site development altering 100,000 square feet of area is required to comply with and acquire an Alteration of Terrain Permit, however site development that also impacts the protected shoreland buffer becomes permit required when the impact area is 50,000 square feet, not 100,000. Further, the impact area will generally be applied to all impacts on Lots 40-43 combined regardless of whether a lot line adjustment or subdivision divides the lots into smaller units.

WETLAND FUNCTIONAL ASSESSMENT OF THE FLOODPLAIN

Underwood subcontracted with Beaver Brook Planning and Design to perform a wetland functional assessment of the floodplain, as well as oversee and document test pits of the area, specifically Lot 63 of the Site. Lot 63, being almost entirely below the 1000-year floodplain elevation of 863’, has significant portions of it being included in the National Wetland Inventory database of the United States Fish and Wildlife Service. Beaver Brook was retained to determine the actual extents of jurisdictional wetlands present as well as evaluate soil conditions of the floodplain. The Wetland Functions and Values Report is included as an appendix to this report, but the findings are summarized below.

Lot 63 has been regraded over the years including the construction of the wastewater lagoons at some point between the mid-1960’s and the early 1980’s. The lot’s soils are a sandy loam classified as well drained with no silt or clay horizons noted in any of the test pits. A total of 15 test pits were advanced to a depth of up to 11’ bgs.

Areas of wetland on and adjacent to Lot 63 were reviewed and documented. Beaver Brook confirmed that extensive, high value wetland exists all around the Lot, however the pockets of wetland located within the large field portion of Lot 63 are of considerably lower value. Beaver Brook opines that, in large part, the wetlands on Lot 63 are likely man-made resulting from agricultural practices or mill-related uses and have likely been impacted many times prior to the creation of the New Hampshire Wetland Bureau. The wetlands were flagged following standard procedures and protocols, the flags were surveyed by York Land Services and the flags were removed so as not to interfere with future haying operations of the field. A plan depicting the wetland flagging on Lot 63 is included as Attachment 9 of Beaver Brooks report.
DEVELOPMENT IN THE FLOODPLAIN

Lot 63 is a known floodplain, recognized by the Town’s of Northumberland’s Zoning Ordinance. Local ordinance aside, construction in the floodplain requires additional considerations. Based on the test pits, it appears that the major make-up of the field on Lot 63 is well drained sandy and sandy loam matrix soils. Nevertheless, development within the floodplain typically requires hydraulic assessments and at times mitigation if flood ways are significantly altered and storage is lost. Development within a floodplain typically requires that the development pursue a revision to the Flood Insurance Rate Map (FIRM) through the Federal Emergency Management Agency (FEMA). The map revision, if approved results in a Letter of Map Revision (LoMaR). Hydraulic studies of the watershed, including that the river proper for which the floodplain is assigned are required in order to predict the effects of the development on flooding.

It is noted however, that the lagoons are also identified as floodplain, when in reality, the lagoon elevations are as high as 865’ and when constructed, removed significant volumes of floodplain storage. The lagoons occupy a footprint in excess of 12 acres and are comprised of significant volumes of earth materials. Using LiDAR data, Underwood was able to generate contours that approximate both the lagoons and the floodplain field.

Using the LiDAR contours, Underwood estimates that if the lagoons were excavated to recover the earth materials used to construct them, approximately 78,000 cubic yards of fill would be realized. This volume is based on returning the lagoon footprint to approximately elevation 855’, which is consistent with the elevations at the toe of slope. Conversely, if the earth materials were moved from the lagoon footprint and re-placed against the railroad corridor along the eastern end of lot 63, a pad site of approximately 10-acres could be created, see Figure 6. Underwood estimates that between elevation 862’ and 863’ of the pad site, the materials needs would exceed that generated by removing the lagoons (as described above). As a pad site would need to be constructed at elevation 864’ or higher to have 1’ of freeboard above the 100-year flood elevation. Typical parking lot/roadway construction would utilize select gravels and pavement for the top 1.5’, meaning that those materials would typically be sourced offsite and trucked into the site. The nature of such a material move within the limits of the Lot 63 would actually improve floodplain storage during minor flooding events and the early stages of major flooding events but providing significant amounts of net volume storage for elevations 855’ to 860’ and very comparable storage volumes from elevation 860’ to 863’.
Discoveries

Over the course of this Site assessment, Underwood has discovered two items that should be investigated and resolved prior to development of the parcel.

The first item is a preliminary survey plan by York Land Services dated December 2017 of the Site. The plan indicates that Lot 63 is 59.88 acres and includes a triangular shaped portion from the parcel identified as Map 107, Lot 144 owned by the Town of Northumberland. A copy of the preliminary plan is included in Appendix 2.

The second item being what appears to be drainage off the end of West/Paper Street that continues south-southeastly across Lot 63. According to the Town’s GIS based tax maps, www.axisgis.com/NorthumberlandNH/ the pipe ends more than ¾ of the way across Lot 63, approximately 150’ from the Upper Ammonoosuc River. Neither Beaver Brook, nor Underwood has seen any evidence of a drainage pipe daylighting in the field portion of Lot 63.
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FIGURE 6 – CONCEPTUAL 10-ACRE PAD SITE
APPENDIX 1
WETLANDS ASSESSMENT AND SITE CHARACTERISTICS REPORT
Wetland Assessment and Site Characteristics Report

WHITE MOUNTAIN ENERGY PARK

Lot 63, Map 107, West Street, Groveton, NH

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INTRODUCTION
Beaver Brook Planning and Design, LLC (BBPD) has prepared this document to evaluate the wetland functions and values and existing site conditions at Lot 63, Map 107 on West Street in Groveton, NH.

This report provides the following information:
- A general discussion of the on-site wetlands
- The hydrologic connections between other adjacent wetlands
- Assessment of wetland functions and values
- Natural Resource Conservation Service soil types and onsite soil investigations

Wetland delineations were performed on this site in July, 2019 by Beaver Brook Planning and Design. Additional site visits were conducted in August, 2019 to meet with York Land Services (York) regarding wetland flag location and again to excavate and record test pit data. Resource information was also reviewed from the below listed sources and some data used forms the basis for this wetland assessment report:

- USGS 7.5 minute series topographic map (Figure 1)
- Aerial Photographs from New Hampshire Department of Transportation (Attachment 8)
- New Hampshire Granit Database
- Town of Northumberland Website
- NRCS Soil Data Mart Website
- New Hampshire Natural Heritage Inventory
- US Army Corps of Engineers The Highway Methodology Workbook – Supplement
- New Hampshire Wetlands Bureau NHWB Website
- New Hampshire Fire and Game Wildlife Action Plan

SITE CHARACTERIZATION
Lot 63 is a broad flat terrace that has been developed/ regraded over the years. It is bounded on the north by an NHDOT Rail Right Of Way, on the south and east by the Upper Ammonoosuc River and on the west by land owned by the Town of Northumberland. Previous work on the site consisted of the installation of a Portland Gas Company 24” main and an 8” service connection that were staked out in the field and located by York. In addition, a treatment basin is located on this site that served the former paper mill that was located in the center of Groveton. Aerial photographs were obtained from NHDOT and are included in this document in Attachment 8. The 1964 photo shows that the site is relatively undeveloped whereas 1981 shows the site cleared and the basin constructed. In the course of mapping the wetlands, several
monitoring wells were noted in the areas adjacent to the basin as well as at a high point in the field. Presently the basin has been breached and a swale has been dug to drain any water that would accumulate in the basin. Several overhead utility lines are located on the site, one located near the northwest lot line and another paralleling West Street heading to and around the basin. During excavation of test pit # 15, a buried pipe was noted approximately 4’ below grade heading in a direction of the basin. It should be noted that Digsafe was notified prior to doing the test pits and staked out the known utility lines. This pipe was not marked nor was it damaged while digging the test pits. In summary the site has been significantly altered over the years.

The USDA-NRCS website entitled ‘Soil Data Mart’ was reviewed to see which soils have been mapped and to see what the general soil composition and properties of the soil units are. The soil map shown in Attachment 4 maps soils in the Colton, Sunday and Fryeburg Series. Colton Gravelly Fine Sandy Loam is a soil that formed in glacial outwash and has a drainage class of excessively drained. It has been identified by the NRCS as a ‘Farmland of Local Importance’ which is defined as “Local significance for production of food, feed, fiber and forage”. Some characteristics of these soils include, nearly level topography, loamy textured soils and those that have a high available water capacity. Soils in the Sunday Loamy Fine Sand Series were also formed in glacial outwash and have a drainage class of Excessively Drained. They also have been identified as a ‘Farmland Soil of Local Importance’. The Fryeburg Very Fine Sandy Loam Series are soils that formed in alluvium and have a drainage class of well drained. Due to the soil’s loamy texture they have a high available water capacity, nearly level topography and have been designated as “Prime Farmland’. Prime Farmlands are those soils “Best suited to food, feed, fiber, forage and oil seed crops.” They are soils of the highest quality when treated and managed according to acceptable farming methods. Based upon my findings doing test pits it appears that this series is dominant throughout the site. Test pit logs are included in this document and are found in Attachment 5. The site is presently being used as a hay field which had been mowed just prior to my mapping of the wetlands. In all test pits, the underlain soil is a saturated sandy gravel. The purpose of doing the test pits was to determine several factors including the parent material of the soils, its drainage class, and to note whether there are any underlain soil horizons of silt/clay deposits that could impact the cost of development. No silt or clay horizons were noted in any test pit.

Much of the site has been disturbed over the years. Test pits show the area had been previously excavated and filled with organic (decomposed) soil and wood debris. The pictures in Attachment 9 show there is evidence of a rubber membrane unearthed while excavating test pit #4 and the organic debris in several other pits.
There are three wetland areas found on, and adjacent to, the site of which two are contiguous. The first being the Upper Ammonoosuc River and its associated wetlands. This wetland is horseshoe shaped and surrounds the open field area that contains the isolated pockets of wetlands. The Cowardin Classification for the River is R2UBH (Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded). The portion of the river between the railroad bridge, and roughly, opposite the basins has very steep banks and the jurisdictional wetland is limited to the bank. Dominant vegetation on the bank between West Street and the river includes red clover (Trifolium pratense), red top (Agrostis gigantea), white aster (Symphotrichum, spp), goldenrod (Solidago, spp), vetch (Vicia spp), speckled alder (Alnus rugosa), paper birch (Betula papyrifera), meadow sweet (Spirea latifolia), reed canary grass, staghorn sumac (Rhus typhina), American elm (Ulmus americana), red maple (Acer rubrum), poison ivy (Toxicodendron radicans), red twig dogwood (Cornus sericea) and honeysuckle (Lonicera tatarica). The soils in this area have a drainage class of poorly drained. The Cowardin Classification for this wetland area is PSS1C (Palustrine, Scrub Shrub, Broad Leaved Deciduous, Seasonally Flooded).

Continuing south along the river, where it begins to meander at the southwest portion of the site, silver maple (Acer saccharinum) is the dominant tree, which is common in flood plains. Sensitive fern, cinnamon fern (Osmunda cinnamomea), ostrich fern (Matteuccia struthiopteris), and jewelweed (Impatiens capensis), elderberry (Sambucas canadensis), tall meadow rue (Thalictrum dasycarpum), and sedge (carex spp) are also dominant vegetated species. This wetland has a Cowardin Classification of PFO1E (Palustrine, Forested Broad Leaved Deciduous, Seasonally Flooded/Saturated). Soils have a drainage class of poorly drained. It is bordered by both the river and a 92 acre parcel of conservation land owned by The Nature Conservancy. Access to the conservation land is through the subject parcel on West Street. Continuing within the same wetland and along the Northwest side of the basin, the wetland heads toward a large undeveloped tract of predominantly wetlands owned by the Town of Northumberland. All the previously described wetlands are hydrologically connected and part of the same system. The National Wetlands Inventory Map for this area is included in this report (Attachment 3) which shows the size of the wetland system.

The upper limits of this large contiguous wetland system forms below the Portland Gas facility and drains to the northwest, onto the Town of Northumberland property, and is hydrologically connected to the wetland system associated with the Upper Ammonoosuc River wetland system previously described. The portion located on this site has poorly drained soils with the dominant vegetation being reed canary grass. The Cowardin Classification for this portion of the wetland is PEM1C (Palustrine, Emergent, Persistent, Seasonally Flooded). As the wetland gets closer to the town property line, the cover type and hydrologic regimes change to PFO/SS1E (Palustrine, Forested/Scrub Shrub, Broadleaved Deciduous, Seasonally Flooded/Saturated).
The second wetland system on this site and the principal area of focus, are the small isolated wetlands located in the hayed field. These are low lying areas within the nearly level topography. There is a possibility that these depressed areas may have been constructed since many have similar characteristics throughout the field. Since the field appears to be hayed on a regular basis, little shrub vegetation was noted, however there are a few identifiable remnants of meadowsweet. The dominant vegetation throughout this area is reed canary grass (Phalaris arundinacea) and timothy (Phleum pratense) both in upland and wetland. This is typical of hayed fields where the harvest spreads seeds throughout the area. The field also appears to have been extensively regraded over the years with areas of sand fill over a buried ‘A’ soil horizon noted in some test pits and loam fill and wood debris observed in other test pits. In one test pit (#4) location, a rubber membrane was found below grade. The soils are mostly disturbed and have a drainage class of poorly drained. What is different from the upland areas and those mapped as wetland are the presence of hydrophytes such as soft rush (Juncus effusus), sedges (Carex spp- unable to further identify due to mowing) and sensitive fern (Onoclea sensibilis) along with evidence of ponding water.

The New Hampshire Natural Heritage Bureau is a division within the Division of Forests and Lands, which finds, tracks and protects New Hampshire’s rare plants, wildlife and exemplary natural communities. As part of most projects requiring submission to the New Hampshire Department of Environmental Services, this database must be checked. As seen on Attachment 6 of this document, a database check was submitted, with a finding of ‘No Known Occurrences of Rare or Endangered Plants, Communities or Wildlife.’
WETLAND FUNCTIONS AND VALUES

Wetland Functional Assessment was utilized as a basis of the qualitative assessment of a wetland for each of the 14 wetland functions and values listed below:

**Groundwater Recharge/Discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. Recharge should relate to the potential for the wetland to contribute water to an aquifer. Discharge should relate to the potential for the wetland to serve as an area where groundwater can be discharged to the surface.

**Flood Flow Alteration:** This function considers the effectiveness of the wetland in reducing flood damage by attenuation of floodwaters for prolonged periods following precipitation events.

**Fisheries Habitat Fish and Shellfish Habitat:** This function considers the effectiveness of seasonal or permanent water bodies associated with the wetland in question for fish and shellfish habitat.

**Sediment/Toxicant Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants or pathogens.

**Nutrient Retention/Transformation:** This function relates to the effectiveness of the wetland to prevent adverse effects of excess nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers or estuaries.

**Production Export:** This function relates to the effectiveness of the wetland to produce food or usable products for human, or other living organisms.

**Sediment/Shoreline Stabilization:** This function relates to the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

**Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and or migrating species would be considered. As part of examining this function the New Hampshire Natural Heritage Bureau is contacted for rare or endangered species.
Recreation: This value considers the effectiveness of the wetland and associated watercourses to provide recreational opportunities such as canoeing, boating, fishing, hunting and other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that were intrinsic to the wetland, whereas non-consumptive opportunities do not.

Educational/Scientific Value: This value considers the effectiveness of the wetland as a site for an “outdoor classroom” or as a location for scientific study or research.

Uniqueness/Heritage: This value relates to the effectiveness of the wetland or its ability to include such things as archeological sites, unusual aesthetic quality, historical events, or unique plants, animals, or geological features.

Visual Quality/Aesthetics: This value relates to the visual and aesthetic qualities of the wetland.

Threatened or Endangered Species Habitat: This value relates to the effectiveness of the wetland or associated water bodies to support threatened or endangered species.

WETLAND FUNCTIONAL ASSESSMENT

The principal functions and values are supported by the diverse habitats in the area including the adjacent river, the overall size of the undeveloped area, as well as the presence of a dense plant community. Whereas previously in this document we have described the characteristics of the entire property and adjacent wetlands, the functional analysis was completed only on the isolated wetlands located in the field. This was done because the purpose of this study was to determine the potential for development within the cleared area. The functions that were determined to be present are summarized below.

*Groundwater recharge/discharge* refers to a site’s potential to serve as an area where groundwater can be discharged to the surface or provide recharge to the subsurface. This feature appeared to be present on the isolated wetlands located in the field where there are no outlets. Rainfall ponds in these basins and percolates into the soil. The water stained grasses noted within these basins verifies that this function is present. Due to the size of these wetlands and limited drainage area, this function is not considered to be a principal function.
Flood Flow alteration is the ability of a wetland to store storm water flow and release storm flows at a controlled rate. The subject wetlands are considered to provide this function to a lesser degree primarily due to the limited storage capacity of the wetland.

Wildlife habitat is considered to be a principal function and value provided by the on-site wetlands, with the availability of diverse habitats including the dense forested wetland, stream corridor and access to adjacent upland and wetland habitats including the Upper Ammonoosuc River. Based on observation of the wetland edge and stream corridor it would appear that much of this value is tied to the property’s ability to provide a corridor or connection to other habitats. Any proposed project would not be expected to significantly alter the dynamics of the wetland habitat function of the site due to the size of the adjacent undisturbed areas and proximity to the river. The New Hampshire Fish and Game Wildlife Action Plan was reviewed (Attachment 7). The 2015 Wildlife Action Plan is a “Blueprint for Conserving Species of Greatest Conservation Need (SGCN) and their habitats in New Hampshire”. It lists this parcel as supporting habitat (as opposed to highest ranking). While onsite doing field work a pair of nesting osprey were noted, having built a nest on top of a utility pole. Also several deer were observed as well as small mammals carcasses, assumed due to the osprey.

Fisheries habitat is not considered to be provided by these wetland communities due to the isolated nature of the wetlands and lack of a hydrologic connection to the river. The river itself provides this function.

Threatened or Endangered Species habitat relates to the ability of an area to support threatened or endangered species. As part of this report, the NH Natural Heritage Bureau was asked to review their database for threatened or endangered species. Their response was that there are no known reports.

Recreation This value considers the effectiveness of the wetland and associated watercourses to provide recreational opportunities such as canoeing, boating, fishing, hunting and other active or passive recreational activities. While the isolated wetlands, which are the focus of this study do not support this function, the adjacent river and conservation land do. The reason they are mentioned here is that the river has access points off of West Street and the access to “The Nature Conservancy's” land is also through this parcel. The remaining wetland functions and values described in the Highway Methodology were not found to be significant and do not apply to the site’s wetlands based upon the narrow width and lack of accessibility of the wetland.
SUMMARY

The focus of this study was to determine the extent of wetlands found on this site, the functions and values of those wetlands and to log the morphological characteristics of the onsite soils. More specifically the soil textures and structure for the engineers to determine the potential for developing the site.

Based on my findings I found that the site, Map 107, Lot 63 has been altered over the years. Test pits show areas of a sand fill over a buried ‘A’ soil horizon in some pits and others have been excavated/filled with loam and organic debris. In all pits the underlain soil is a saturated sandy gravel. No silt or clay horizons were noted in any pit.

Lot 63 is surrounded on three sides by a large wetland system contiguous with the Upper Ammonoosuc River. This large system has many functions and high values and is a floodplain. I believe that proposing to impact any wetlands within this system for development would be a struggle in dealing with regulatory agencies. Conversely the small isolated wetlands located in the field have less value and few wetland functions and are generally not held in as high regard by the NHWB. When permitting the filling of these areas one must make a case on the fact that they are not contiguous with any waterbody, they have limited functions and values and are either man-made or were disturbed prior to the adoption of the NHWB. The Clean Water Act, Section 404 requires proposed impacts to wetlands be first avoided, then minimized and finally be mitigated. The process begins with an alternative analysis showing that that impact is necessary. The second step is the proof that the impacts have been minimized and the final step is to mitigate the wetland impacts. In New Hampshire, any wetland impact over 10,000 square feet will require mitigation in one form or another which includes the restoration of previously disturbed/filled wetlands within the same drainage system, or pay a fee which is based on the size of wetland impact (square feet) and the going value of land. Also placing a portion of the land in a conservation easement is sometimes acceptable.

In a conversation I had with the NHWB regarding the basins, it does not appear that they would fall under their jurisdiction as long as they were not constructed in wetlands to begin with. The only questionable area would be the basin berm on the northwest, where the delineated wetland falls at the toe of the berm.
Any work on the property would also require a Shoreland Permit from the NHDES Shoreland Bureau, which has a jurisdiction of the first 250 feet from a waterbody listed on their website under “Consolidated List of Water Bodies”. It should be noted that disturbances over 50,000 square feet within the Shoreland zone requires an NHDES Alteration of Terrain Permit.
ATTACHMENT 1: USGS LOCATION MAP

Wetland Functions and Values Report
WHITE MOUNTAIN ENERGY PARK

Lot 63, Map 107, West Street, Groveton, NH
ATTACHMENT 2: NORTHUMBERLAND TAX MAP

Wetland Functions and Values Report
WHITE MOUNTAIN ENERGY PARK

Lot 63, Map 107, West Street, Groveton, NH
ATTACHMENT 2

Tax Map - Northumberland
Prepared By: Beaver Brook Planning and Design, LLC
ATTACHMENT 3: NATIONAL WETLANDS INVENTORY MAP

Wetland Functions and Values Report
WHITE MOUNTAIN ENERGY PARK

Lot 63, Map 107, West Street, Groveton, NH
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands-related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.
ATTACHMENT 4: NRCS SOILS MAP

Wetland Functions and Values Report
WHITE MOUNTAIN ENERGY PARK

Lot 63, Map 107, West Street, Groveton, NH
Coos County Area, New Hampshire

22A—Colton gravelly fine sandy loam, 0 to 3 percent slopes

Map Unit Setting
National map unit symbol: 9ds0
Elevation: 820 to 2,300 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 90 to 135 days
Farmland classification: Farmland of local importance

Map Unit Composition
Colton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colton

Setting
Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Stratified sandy and gravelly outwash

Typical profile
H1 - 0 to 6 inches: gravelly fine sandy loam
H2 - 6 to 18 inches: stratified very gravelly sandy loam
H3 - 18 to 65 inches: extremely gravelly coarse sand

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 99.90 in/hr)
Depth to water table: About 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components
Sheepscot
Percent of map unit: 10 percent
Landform: Terraces
Landform position (two-dimensional): Footslope
Custom Soil Resource Report

Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Adams
Percent of map unit: 5 percent
Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

102A—Sunday loamy fine sand, 0 to 3 percent slopes, occasionally flooded

Map Unit Setting
National map unit symbol: 9dqq
Elevation: 790 to 2,200 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 90 to 135 days
Farmland classification: Farmland of local importance

Map Unit Composition
Sunday and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the map unit.

Description of Sunday

Setting
Landform: Flood plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf, rise
Down-slope shape: Linear
Across-slope shape: Linear

Typical profile
H1 - 0 to 9 inches: loamy fine sand
H2 - 9 to 65 inches: stratified loamy fine sand

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Custom Soil Resource Report

Frequency of flooding: Occasional
Frequency of ponding: None
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Abenaki
Percent of map unit: 7 percent
Landform: Flood plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Metallak
Percent of map unit: 5 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Fryeburg
Percent of map unit: 5 percent
Landform: Flood plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Lovewell
Percent of map unit: 3 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No
208A—Fryeburg very fine sandy loam, 0 to 3 percent slopes, frequently flooded

Map Unit Setting
National map unit symbol: 9drlv
Elevation: 790 to 2,200 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 37 to 46 degrees F
Frost-free period: 90 to 135 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Fryeburg and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fryeburg

Setting
Landform: Flood plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile
H1 - 0 to 11 inches: very fine sandy loam
H2 - 11 to 22 inches: very fine sandy loam
H3 - 22 to 65 inches: very fine sandy loam

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 1.98 in/hr)
Depth to water table: About 72 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: Very high (about 17.9 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Hydric soil rating: No
Minor Components

Lovewell
Percent of map unit: 5 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Ondawa
Percent of map unit: 5 percent
Landform: Flood plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Podunk
Percent of map unit: 5 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

W—Water

Map Unit Composition
Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.
ATTACHMENT 5: TEST PIT LOGS

Wetland Functions and Values Report
WHITE MOUNTAIN ENERGY PARK

Lot 63, Map 107, West Street, Groveton, NH
Test Pits
Underwood Engineers - Groveton
September 2019

Test Pit 1
0-3”  10YR3/3, LOAMY SAND, SINGLE GRAIN, LOOSE, MANY FINE ROOTS
3-14”  2.5Y4/3, GRAVEL SAND FILL, SINGLE GRAIN, LOOSE
14-28” 10YR3/2, LOAMY SAND, WEAK GRANULAR, VERY FRIABLE, Ab HORIZON
28-40” 2.5Y4/4, FINE SAND, WEAK GRANULAR, VERY FRIABLE
40-74”  2.5Y4/4, MEDIUM SAND, SINGLE GRAIN, LOOSE
74-121”10YR4/4, GRAVEL SAND, SINGLE GRAIN, LOOSE
@100” Redox 7.5YR4/5, 7.5YR3/2
No Refusal

Test Pit 2
0-14”  10YR3/3, LOAMY SAND FILL, WEAK GRANULAR, VERY FRIABLE
14-17”  10YR2/2, Ab HORIZON, SANDY LOAM, WEAK GRANULAR, VERY FRIABLE
17-26” 2.5Y3/2, LOAMY SAND, WEAK GRANULAR, VERY FRIABLE,
26-46” 2.5Y4/4, FINE SAND, WEAK GRANULAR, VERY FRIABLE, 7.5YR4/6 REDOX
46-64” 2.5Y4/3, MEDIUM SAND, SINGLE GRAIN, LOOSE
64-132” 2.5Y4/3, GRAVELY SAND, SINGLE GRAIN, LOOSE, SATURATED @ 90”
No Refusal

Test Pit 3
0-10”  10YR3/2, LOAMY SAND, WEAK GRANULAR, VERY FRIABLE, MANY FINE ROOTS
10-15” 10YR3/1, Ab HORIZON, SANDY LOAM, WEAK SUBANGULAR BLOCKY, VERY FRIABLE
15-26” 2.5Y3/2, ALT. LAYERS FINE SAND AND COARSE SAND 2.5Y3/3, GRANULAR, FRIABLE
26-37” 5Y2.5/2 FINE SAND, WEAK GRANULAR, VERY FRIABLE, 10YR5/6 REDOX, @26” MANGANESE NODULES 10YR3/2
37-44” 2.5Y4/3, FINE SAND, WEAK GRANULAR, VERY FRIABLE, 7.5YR4/6 REDOX
44-78” 2.5Y4/2, MEDIUM SAND, SINGLE GRAIN, LOOSE
78-108” 2.5Y4/3, GRAVELLY SAND, SATURATED, SINGLE GRAIN, LOOSE
No Refusal

Test Pit 4
0-27” MIXED FILL, OLD LINER, MEMBRANE
27-54” 2.5Y3/2, FINE SAND, MASSIVE, VERY FRIABLE, 7.5YR4/6 REDOX
54-57” 5Y4/3, FINE SAND, WEAK GRANULAR, VERY FRIABLE, 7.5YR4/6 REDOX
57-83” 2.5Y3/3, MEDIUM SAND, SINGLE GRAIN, LOOSE
83-128” 2.5Y4/3, GRAVELLY SAND, SINGLE GRAIN, LOOSE, SATURATED
No Refusal
Test Pit 5
0-12” 10YR3/3, LOAMY SAND FILL, WEAK GRANULAR, VERY FRIABLE
12-14” 10YR3/2, LOAMY SAND, Ab HORIZON (PLOW PAN), WEAK GRANULAR, VERY FRIABLE
14-25” 2.5Y3/3, LOAMY SAND, WEAK GRANULAR, VERY FRIABLE
25-54” 2.5Y4/4, FINE SAND, WEAK GRANULAR, VERY FRIABLE
54-70” 2.5Y4/4, MEDIUM SAND, SINGLE GRAIN, LOOSE
70-134” 2.5Y4/3, GRAVELLY SAND, SINGLE GRAIN, LOOSE
No Refusal

Test Pit 6 (DISTURBED)
0-32” SAND FILL, MANY FINE ROOTS
32-64” MIXED ORGANIC FILL, SANDY LOAM, WOOD PIECES
64-108” GLEYED FINE LOAMY SAND, 5Y6/4
No Refusal

Test Pit 7 (DISTURBED)
0-4” 10YR3/2, FINE SANDY LOAM, WEAK GRANULAR, VERY FRIABLE, FEW ROOTS
4-8” 2.5Y3/1, LOAMY SAND, WEAK GRANULAR, VERY FRIABLE
8-16” 2.5Y4/3, FINE SAND, WEAK GRANULAR, VERY FRIABLE, 5Y5/2 REDOX DEPLETIONS
16-36” 2.5Y4/4, MEDIUM SAND, WEAK SUBANGULAR BLOCKY, VERY FRIABLE, 5Y5/2 REDOX DEPLETIONS
36-52” 2.5Y4/3, MEDIUM SAND, SINGLE GRAIN, LOOSE
52-88” 5Y4/2, GRAVELLY SAND, SATURATED, SINGLE GRAIN, LOOSE
No Refusal

Test Pit 8 (DISTURBED)
0-24” 10YR3/1, LOAMY SAND FILL, WEAK GRANULAR, VERY FRIABLE
24-27” 10YR3/3, SANDY LOAM, Ab HORIZON, WEAK GRANULAR, VERY FRIABLE
27-32” 2.5Y3/3, FINE LOAMY SAND, WEAK GRANULAR, VERY FRIABLE
32-72” 2.5Y3/3, FINE SAND, WEAK GRANULAR, VERY FRIABLE
72-80” 5Y4/2, MEDIUM SAND, SATURATED, SINGLE GRAIN, LOOSE, 7.5Y4/4 REDOX
80-88” 2.5Y3/3, GRAVELLY SAND, SINGLE GRAIN, LOOSE, SATURATED
No Refusal

Test Pit 9
0-6” 10YR3/2, LOAMY SAND, WEAK GRANULAR, VERY FRIABLE
6-20” 10YR3/3, LOAMY SAND, WEAK GRANULAR, VERY FRIABLE
20-80” 2.5Y4/4, MEDIUM SAND, SINGLE GRAIN, LOOSE, 10YR5/6 REDOX FEW @ 27”
80-130” 2.5Y4/4, GRAVELLY SAND, SATURATED, SINGLE GRAIN, LOOSE
No Refusal
Test Pit 10
0-55” MIXED FILL, NO DEFINED SOIL HORIZONS, EXCAVATED PORTION OF OLD A FILL, STICKS

Test Pit 11
0-6” 10YR3/2, SANDY LOAM, WEAK GRANULAR, VERY FRIABLE
6-19” 2.5Y4/4, SAND FILL, SINGLE GRAIN, LOOSE
19-90” 5Y2.5/1, GRAVELLY SAND FILL, SINGLE GRAIN, LOOSE, PIECES OF WOOD, WATER @58”
No Refusal

Test Pit 12
0-6” 2.5Y5/4, SAND, WEAK GRANULAR, VERY FRIABLE
6-11” 10YR2/2, LOAMY SAND, AB HORIZON, WEAK GRANULAR, VERY FRIABLE
11-18” 2.5Y4/3, FINE SAND, WEAK GRANULAR, VERY FRIABLE
18-21” 2.5Y3/3, LOAMY SAND, WEAK GRANULAR, VERY FRIABLE
21-24” 2.5Y4/3, MEDIUM SAND, DENSE, SINGLE GRAIN, LOOSE
24-37” 2.5Y3/2, FINE LOAMY SAND, MASSIVE, FRIABLE
37-57” 5Y4/2, MEDIUM SAND, SINGLE GRAIN, LOOSE
No Refusal

Test Pit 13
0-17” 2.5Y4/3, LOAMY SAND FILL, WEAK GRANULAR, VERY FRIABLE
17-33” 2.5Y4/3, GRAVEL SAND FILL, SINGLE GRAIN, LOOSE
33-45” 10YR2/2, FINE SANDY LOAM, AB HORIZON (HYDROCARBON SMELL), MASSIVE, FIRM
45-108” 2.5Y3/2, GRAVELLY SAND, SINGLE GRAIN, LOOSE, @66” WATER
No Refusal

Test Pit 14
0-7” 10YR3/2, SANDY LOAM, WEAK GRANULAR, VERY FRIABLE
7-18” 2.5Y3/2, LOAMY SAND, WEAK SUBANGULAR BLOCKY, VERY FRIABLE, 7.5YR4/6 REDOX
18-25” 5Y3/2, LOAMY SAND, WEAK SUBANGULAR BLOCKY, VERY FRIABLE, 7.5YR4/6 REDOX
25-67” 5Y4/2, FINE SAND, SOME SILT, WEAK SUBANGULAR BLOCKY, VERY FRIABLE
67-90” 5Y4/2, GRAVELLY SAND, SINGLE GRAIN, LOOSE
No Refusal

Test Pit 15
0-23” 10YR3/2, SANDY LOAM, WEAK GRANULAR, VERY FRIABLE
23-25” 10YR3/1, AB HORIZON, LOAMY SAND, WEAK SUBANGULAR BLOCKY, VERY FRIABLE
25-52” 2.5Y4/3, MEDIUM SAND, SINGLE GRAIN, LOOSE, PIPE FOUND
No Refusal
Test Pit 16
0-9” 10YR3/2, LOAMY SAND, WEAK GRANULAR, VERY FRIABLE
9-19” 2.5Y4/4, LOAMY SAND, WEAK GRANULAR, VERY FRIABLE
19-21” 2.5Y3/3, MEDIUM SAND, WEAK GRANULAR, VERY FRIABLE
21-50” 2.5Y4/4, MEDIUM SAND, WEAK GRANULAR, VERY FRIABLE
50-70” 2.5Y4/4, GRAVELLY SAND, SINGLE GRAIN, LOOSE
ATTACHMENT 6: NH NATURAL HERITAGE BUREAU - DATACHECK

Wetland Functions and Values Report
WHITE MOUNTAIN ENERGY PARK

Lot 63, Map 107, West Street, Groveton, NH
To: Michael Seraikas  
65 Dunklee Street  
Concord, NH 03301

Date: 8/27/2019

From: NH Natural Heritage Bureau

Re: Review by NH Natural Heritage Bureau of request dated 8/27/2019

NHB File ID: NHB19-2773

Applicant: Michael Seraikas

Location: Tax Map(s)/Lot(s):
Northumberland

Project Description: Study of the parcel to determine it's development capabilities

The NH Natural Heritage database has been checked for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government. We currently have no recorded occurrences for sensitive species near this project area.

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

This report is valid through 8/26/2020.
ATTACHMENT 7: NH HIGHEST RANKING HABITAT MAP

Wetland Functions and Values Report
WHITE MOUNTAIN ENERGY PARK

Lot 63, Map 107, West Street, Groveton, NH
Tax Map - Northumberland
Prepared By: Beaver Brook Planning and Design, LLC
ATTACHMENT 8: AERIAL PHOTOGRAPHS FROM NH DOT

Wetland Functions and Values Report
WHITE MOUNTAIN ENERGY PARK

Lot 63, Map 107, West Street, Groveton, NH
Aerial Photo 1 - 1964
Prepared By: Beaver Brook Planning and Design, LLC
Aerial Photo 2 - 1981
Prepared By: Beaver Brook Planning and Design, LLC
ATTACHMENT 9: WETLAND LOCATION PLAN

Wetland Functions and Values Report
WHITE MOUNTAIN ENERGY PARK

Lot 63, Map 107, West Street, Groveton, NH
APPENDIX 2
ZONING MAP
NHDHR INVENTORY NUM0002
NHDHR RPR (TECHNICAL ASSISTANCE)
GROVETON LAGOON PARCELS – PRELIMINARY PLAN
DRAINAGE & SEWER SYSTEMS (PLAN)
Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.
Name, Location, Ownership
1. Historic name: WESSON LUMBER COMPANY DUMPLING
2. District or area: 
3. Street and number: 36 MAIN ST. (ROUTE 3)
4. City or town: NUHHAMPSHIRE
5. County: COOS
6. Current owner: 

Site Features
25. Setting: 

26. Outbuildings: 

Form prepared by
32. Name: O. TRUVEY
33. Organization: N/A
34. Date of Survey: 6/22/16

Property Loss

50. Reason for Loss, plus more information regarding loss, with (48) Bibliography and/or References.
If the property contains other features that have not been destroyed, please fill out page 2 of this form.

Property loss described on Google Earth
while obtaining GIS data. Date range from aerial photo comparison.
Date received: March 11, 1998  Inventory #: NUM0002
Date of group review: March 18, 1998  Area: 32B-GRO-110.3-6.01
DHR staff: Linda Wilson  Town/City: NO
Property name: Weston Lumber Company  County: Northumberland (N17)
Duplex
Address: 36 Main Street (US Route 3)  [X] FERC/PNGTS
Northumberland NH
Reviewed for: [X]R&I [ ]PTI [ ]NR [ ]SR [ ]Survey

Individual Properties

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Integrity  [X] Location  [X] Design  [ ] Setting  [X] Materials

Criteria:  [ ] A. Event  [ ] B. Person  [X] C. Architecture
           [ ] D. Archaeology  [ ] E. Exception

Level:  [X] Local  [ ] State  [ ] National

STATEMENT OF SIGNIFICANCE: Concur with consultant’s recommendation: eligible under criterion C as an excellent and early example of two-family industrial housing in the community, but not eligible under criterion A because direct associations with the Weston Lumber Co. are no longer evident.

Concur with consultant’s recommendation that the entire lot – the dwelling and its domestic space, including the garage – should be the eligible parcel. The garage does not detract from the house, and it appears to be itself more than 50 years old.

Note the consultant’s effective use of historic birdseye views to document the development of this property.

ACREAGE: 0.26 acre
PERIOD OF SIGNIFICANCE: c. 1889-1890
AREA OF SIGNIFICANCE: C: Architecture
BOUNDARY: Map/parcel U-2/177 (.26 acre)

FOLLOW-UP:

Final DOE approved by: Olander 03/20/98
NEW HAMPSHIRE DIVISION OF HISTORICAL RESOURCES - INVENTORY FORM

NHDHR Inventory #: 328 (GRO:1-0.56.01)
Included in Area: NO

Town/City: Northumberland (Groveton)
County: Coos

Address: 36 Main Street (Route 3)
Current Owner: Cloutier, Rosario

Property Name: Weston Lumber Company Duplex
Acreage: 0.26
Tax map/parcel #: U-2/177
UTM ref.: 19.300580.4940870
USGS Quadrangle: Groveton scale 1:24000
Use: present duplex
Use: original duplex

Exterior building materials:
- Roof: asphalt
- Walls: asphalt
- Foundation: brick
- Chimney: brick
- # of stories: 2
- Roof shape: gable
- Chimney location: ridge
- Entry location: (2) center
- Window type: 2/2
- Plan configuration: rectangle

Major Alterations:
- Condition: good
- Outbuildings: garage
- Setting: river bank, edge of village
- Architect/Builder: unknown
- Original construction date: c.1889
- Style: -
- Moved?: no date -
- Surveyor: Lynne Emerson Monroe
- Recorded by: Kari Ann Laprey/ T.Hill
- Date of field survey: January 1998

photographer facing: S
photograph date: January 1998
roll # 11 frame # 20
negative stored at: NHDHR
Location map indicate north with arrow

Property map indicate north with arrow

River
Snowmobile trail
Hedges
Yard
Woods
Garage

NW 36-1-21
R: 0979589845
-29-03470
-87-0175
-60-0209
-60-0209
-60-0209
-60-0209
ARCHITECTURAL DESCRIPTION AND COMPARATIVE EVALUATION:

This duplex residence, built c.1889, is located at the edge of Groveton village, on U.S. Route 3 (Main Street) directly above the north bank of the Upper Ammonoosuc River. To the rear (west), along the river bank, was historically the site of the West Lumber Company with which this residence was associated. Now modern structures related to the sewage disposal plant occupy the site. To the northwest of the duplex is a late 19th century residential neighborhood along West Street. Across Route 3 are the yards of the Groveton paper factory.

The duplex is 6 X 2 bays with a pair of entries centered on the facade. The house is two stories with a low-pitched gable roof. Twin brick stovw chimneys pierce the ridge. The ell, which was added shortly after the main block was built (Bacon 1890:68; Norris 1891), also has a low gable roof. The wood frame structure is supported by a brick foundation. The walls are sheathed in asphalt shingles from the mid-20th century or earlier. Exposed wall trim includes a narrow frieze under the slightly projecting eaves, which have tiny brackets with drop pendants at the corners. The windows have flat wooden trim with a molding on the lintel, and contain original double-hung 2/2 sash. The entries contain original wood panel doors glazed with two vertical lights, and are sheltered by a small porch on modern metal posts. Projecting to the south is an addition with false front. This is on a concrete foundation, but has the same siding and wood trim as the main block. A sun porch with a hip roof is located on the front and on the rear is a small sun porch with gable roof. The ell has a two story porch along its south elevation. Behind the house is a three-car garage with broad low-pitched roof, asphalt siding, and three doors on its gable end.

The driveway is along the north side of the house. The northern lot line of the 0.26-acre lot is defined by tall evergreens. Along the south side of the lot on the riverbank is a snow mobile trail in the location of a former access drive to the lumber company site.

HISTORICAL BACKGROUND and role in Town's/City's development:

This building was associated with the Weston Lumber Company established in 1889 (Hurd 1892). The company manufactured and dealt in spruce, hemlock, birch and maple lumber primarily harvested from land holdings in nearby Odell. Products were lumber, clapboards, laths and shingles. A grist mill also operated on the site. A second dam was built on the Upper Ammonoosuc, just above the railroad bridge, creating a mill pond between it and the covered bridge. The company headquarters were in Boston where the owners were from. A second mill was located in Lanesboro, Vermont. The original mills in Groveton burned shortly after their construction and were rebuilt. The plant covered five acres and employed two hundred men in the mills and woods (Bacon 1890:69).

The duplex was used as worker housing from an early date. The main block was standing by 1890 and the ell was in place the following year (Bacon 1890:68; Norris 1891). The lumber company covered the north side

Surveyor's Evaluation:

<table>
<thead>
<tr>
<th>NR listed: individual within district</th>
<th>NR Criteria: A</th>
<th>NR eligible: individual within district</th>
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<td></td>
<td>C</td>
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<td>D</td>
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</tbody>
</table>

SHPO office - Reviewed for Determination of Eligibility (date):
Continue any narrative not fully completed in designated sections of the Inventory or Area Forms on this Continuation Form. Note heading of each section being continued, and arrange in an order corresponding to the order of the Form.

HISTORICAL BACKGROUND: (continued)

of the river between it and West Street. The complex consisted of the sawmill at the west end of the mill pond above the dam. The Concord & Montreal Railroad tracks ran along the west edge of the property and a branch line forked northeast into downtown Groveton. A loading platform was located off the west side of the sawmill. Farther north on the tracks was a separate planing mill. Between them stood a large Second Empire style building, which contained the company store and a boardinghouse. Closer to the water were various lumber sheds, stables and a blacksmith shop (Sanborn 1897). The duplex was located outside the area shown on the Sanborn insurance maps. Between the mill complex and the duplex on the main road was an open area with log piles along the river bank (Norris 1891).

The residents of the duplex have not been identified. It clearly served as a multi-family dwelling throughout its history. Weston Lumber closed by the end of the 1920's (Crowley & Lunt 1928). The site is occupied by modern buildings and the duplex is privately owned.

NATIONAL REGISTER STATEMENT OF SIGNIFICANCE:

This property was determined ineligible for the National Register in 1991, but additional investigation and comparison with other buildings in Groveton prompted a revisitation of this determination.

Criterion A: This building is of interest for its historic associations with the Weston Lumber Company. It is not eligible for the National Register under Criterion A, because it is only a fragment of the factory complex.

Criterion B: The residents of this property were not sufficiently distinguished to make it eligible under this criterion.

Criterion C: The Weston Lumber Company Duplex is individually eligible for the National Register under Criterion C as the best and earliest surviving two-family residence identified in a cursory windshield survey of Groveton. Other houses of this type include a pair of duplexes on Morse Street. These are more architecturally-distinguished with bays, porches and dormers, but reflect a later period and less utilitarian form of housing. A large duplex on Route 3 retains its 21/2 story, 6 X 3 bay form, but has all new siding and windows. A two-family house of similar vintage on Rich Street has a low hip roof and two story porch, but retains less overall integrity.

PERIOD(S) OF SIGNIFICANCE: c.1891.
NEW HAMPSHIRE DIVISION OF HISTORICAL RESOURCES - CONTINUATION FORM

X Inventory Form  ___ Area Form

NHDHR Inventory # 32B-(GRO-1)-0:5-6:01
NHDHR Area Letter NO
Town/City Northumberland
County Coos

Sheet 3 of 10

Continue any narrative not fully completed in designated sections of the Inventory or Area Forms on this Continuation Form. Note heading of each section being continued, and arrange in an order corresponding to the order of the Form.

STATEMENT OF INTEGRITY:

This duplex residence retains integrity of location. Its setting has been affected by the relocation of U.S. Route 3 and the loss of historic lumber company buildings to the rear. There is little or no evidence of the lumber company left and modern buildings stand on its site. The house retains the ability to convey its use as worker housing, but not the associations with a specific company. The house retains integrity of design, workmanship and feeling. The only change in materials is the asphalt siding, which has been in place for some time. Original doors, windows and stove chimneys are intact, as is the entry porch, though it has modern supports. The ell was built c.1891. The side extension was added early on for an unidentified purpose.

BIBLIOGRAPHY and/or REFERENCES:

Bacon, George F.

Crowley & Lunt

Hengen, Elizabeth Durfee
1991 “Groveton: Routes 3 & 110 Intersection Area Form,” on file at the New Hampshire Division of Historical Resources, Concord.

Potter, Natalie and Donna Craggy (comps.)

Maps

Hurd, H.D. & Co.

Norris, Geo. E.

Sanborn Map Company
Continue any narrative not fully completed in designated sections of the Inventory or Area Forms on this Continuation Form. Note heading of each section being continued, and arrange in an order corresponding to the order of the Form.

BIBLIOGRAPHY and/or REFERENCES: (continued)

Walling, H.

APPLICABLE HISTORIC CONTEXT(S) with code:

16. Large-scale (corporate) lumbering and paper manufacturing in the North Country, 1870-present.

BOUNDARY DISCUSSION:

The boundary of the National Register eligible building is defined to include the 0.26-acre house lot currently associated with the property. This encompasses the historic house and the domestic space around it, as well as the three-car garage. The boundary is defined by the legally-recorded outer lot lines of parcel 177 as shown on map U2 in the Town of Northumberland tax records.
Continue any narrative not fully completed in designated sections of the Inventory or Area Forms on this Continuation Form. Note heading of each section being continued, and arrange in an order corresponding to the order of the Form.

BOUNDARY MAP:
Continue any narrative not fully completed in designated sections of the Inventory or Area Forms on this Continuation Form. Note heading of each section being continued, and arrange in an order corresponding to the order of the Form.

(Bacon 1890:68)
Continue any narrative not fully completed in designated sections of the Inventory or Area Forms on this Continuation Form. Note heading of each section being continued, and arrange in an order corresponding to the order of the Form.

(Norris 1891)
Continue any narrative not fully completed in designated sections of the Inventory or Area Forms on this Continuation Form. Note heading of each section being continued, and arrange in an order corresponding to the order of the Form.

(Sanborn 1897)
Photo #1:

photographer facing: W
photo date: Jan 1998
roll# 11
frame# 21
Negative stored at: NHDHR

Photo #2: rear, garage and back yard

photographer facing: N
photo date: Jan 1998
roll# 11
frame# 22
Negative stored at: NHDHR

Photo #3:

photographer facing:
roll#
frame#
Negative stored at:
Comparables

Photo #1: Rich Street

photographer facing: NW  photo date: Jan 1998
roll#  12  frame#  24
Negative stored at: NHDHR

Photo #2: Route 3

photographer facing: E  photo date: Jan 1998
roll#  14  frame#  0
Negative stored at: NHDHR

Photo #3: Morse Street

photographer facing: NW  photo date: Jan 1998
roll#  12  frame#  20
Negative stored at: NHDHR
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

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 White Mountain Energy Park
Project Location Groveton Village
City/Town Northumberland, NH Tax Map 107 Lot # 40-43 & 63
NH State Plane - Feet Geographic Coordinates: Easting 7060835 Northing 588040.81
(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 # T A

State Agency and Contact (if applicable)
Permit Type and Permit or Job Reference #

APPLICANT INFORMATION

Applicant Name Underwood Engineers
Mailing Address 99 North State Street Phone Number 603 230-9898
City Concord State NH Zip 03301 Email rsaunders@underwoodengineers.com

CONTACT PERSON TO RECEIVE RESPONSE

Name/Company See Applicant
Mailing Address Phone Number
City State Zip Email

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 c)
- 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
- 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 10/01/2019.

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): 20 years

- Photographs of each resource or streetscape located within the project area, with captions, along with a mappe
- If the project involves rehabilitation, demolition, additions, or alterations to existing buildings or structures, pro

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

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:  PARCELS ARE CONSIDERED ARCHAEOLOGICALLY SENSITIVE. PHASE I-A  
SURVEY RECOMMENDED TO DETERMINE LEVEL OF POTENTIAL DISTURBANCE  
RELATED TO PAST LAND USES.

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

Authorized Signature:  [Signature]  
Date:  1/24/2020

New Hampshire Division of Historical Resources / State Historic Preservation Office  
May 2019
Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.