GENERAL INFORMATION

The Board of Selectmen of the Town of Hollis hereby requests bids for an agricultural lease of length up-to twenty five (25) years commencing November 1, 2020, for portions of unimproved vacant land located in the Town of Hollis shown on the Town of Hollis Tax Maps as Map #032, Lots 001 and 002. The specific portion of the property available consists of approximately 120 acres in the area depicted in red on the attached aerial, topographical and soil maps in Appendix A.

At present, portions of the subject property are actively farmed under the terms of a lease that ends October 31, 2020. Although bidders may request access to the property to aid in the preparation of their bids, the Town expects bidders to respect the rights of the current lessee and avoid interrupting or interfering with current farming operations.

CONDITIONS

The Town is prepared to grant considerable discretion to the successful bidder or bidders in the use of the land for agricultural crops as per RSA 21:34-a included in Appendix A. Activities defined in RSA 21:34-a sections II(a)-4, 5, 7, 9, II(b)-5, III and V will not be permitted.

The results of an USDA Natural Resources Conservation Service (NRCS) agricultural assessment along with soil map references and erosion/nutrient guidelines are attached in Appendices B & C.

The Town will consider bids and separate leases for individual parts of the available land. However, preference will be given to bids from individual or multiple bidders that:

1. Collectively offer credible plans to actively manage the entire 120 acres.
2. Invest in the long-term agricultural viability of the property as per NRCS guidelines, such as (a) making improvements, among other things, to the water supply, (b) implementing erosion control, and (c) stumping and replanting.
3. Offer the longest term lease up-to twenty-five (25) years.
4. Maintain the property’s rural character.

The Town also understands that the current agricultural use may no longer be the most appropriate crop for some portions of the property and will, therefore, consider bids that propose other, more appropriate crops, including, for example, conversion of forest to fields, row crops, hay, or any other agricultural use that maintains the long-term agricultural viability of the property. Net proceeds of timber harvests may be available to offset agricultural development costs. Bidders should include any timber harvests in their development plan (see below).

All use of land for agricultural crops must conform to the terms of a management plan in accordance with scientifically based best practices and recommendations of the USDA NRCS. Successful bidders will be required to file with the town an NRCS approved conservation management plan for the property no later than October 31, 2021. Bidders are encouraged to contact the USDA NRCS directly while developing their bids to answer any questions they may have:

Michael Birchler
District Conservationist - Merrimack & Hillsborough Counties
USDA NRCS
Mobile: (603) 362-2645 Concord: (603) 223-6028 Milford: (603) 732-9196

2020 Stefanowicz RFP 1.1
Each bid shall include, but not be limited to, the following:

1. the areas to be leased, using the zone and field designations provided on the attached map in Appendix B;
2. a property development plan which defines:
   a. the proposed agricultural use, by area;
   b. the proposed improvements including, for example, irrigation plans (including any enhancement of the water supply), building needs (for storage, processing, etc.), etc.;
   c. the approximate timeline for changes and improvements;
   d. the approximate investment required to implement changes and improvements.
3. the annual rent payment to be negotiated as part of the lease. According to RSA 72:23, the annual payment must be greater than or equal to the current property tax for the lease areas.

While the final terms and conditions of a lease will be negotiated with the selected bidder, attached in Appendix D is a draft lease developed to aid in the bidding process. Please note that there is an optional renewal clause included in the draft lease.

SITE VISIT & QUESTIONS

The Hollis Joint Agricultural and Conservation Commission Working Group (JWG) will conduct a public site visit with potential bidders at the property location at 2:00 pm on Thursday, April 9, 2020. The JWG will also conduct an open information session at 7:00 pm on Thursday, April 9, 2020, in the Community Room at the Town Hall to answer bidder’s questions. Questions about this solicitation including requests for access to the property may also be addressed to Mark J. Post of the Hollis Agricultural Commission, by email at mpost@postgrp.com, or phone at (603) 759-5229. Deadline for questions is May 14, 2020. All questions and answers will become part of the public record.

SUBMISSION

Please submit (1) an electronic copy of the bid to Lori Radke, Town Administrator, Town of Hollis, at administration@hollisnh.org by 2:00pm on Friday, June 5, 2020, with the phrase “Agricultural Land Lease” in the subject line, and (2) a signed, print copy of the proposal, either post-marked or hand-delivered, by the following business day, along with two photocopies thereof. Hand deliveries should be made to Lori Radke at the Hollis Town Hall, 7 Monument Square, Hollis, N.H. 03049. All submissions will remain confidential.

ELECTION PROCESS

Although the Hollis Select Board will make the ultimate decision on which bid or bids to accept, the Hollis Joint Agricultural and Conservation Commission Working Group will review all bids, may conduct interviews, and make recommendations to the Select Board. The Select Board reserves the right to waive any formality and accept or reject any or all bids.

AWARD

The Select Board will notify the successful bidder or bidders in writing by Wednesday, September 23, 2020. The successful bidder or bidders shall execute a proper lease document, the form and content of which shall be satisfactory to the Selectmen. A draft lease is attached in Appendix D.

REFERENCED DOCUMENTS

2. NRCS Agricultural Assessment and Land Management Guidelines (Appendices B & C)
3. Draft Lease Template (Appendix D)
Appendix A – Aerial, Topographical and Soil Maps, RSA 21:34-a
Appendix B – NRCS Agricultural Assessment

USDA NCRS Stefanowicz Farm Agricultural Assessment

Date of Visit: 8/29/2019
Wetlands – Zone 3

• Fields 11, 9, northeast section of 8, 16, and 12, all have a close proximity to wetlands or are likely what we would call “farmed wetland”.
• If spreading manure, maintain a 40’ buffer of application to wetlands if there is a good perennial vegetative cover in that area. If there is not at least a 40’ acceptable perennial vegetative buffer, maintain a 100’ buffer of application to wetlands.
• If applying commercial nutrients and manure, follow good nutrient management to NRCS standards. These include but are not limited to obtaining and following soil test recommendations, not over-applying nutrients, only spreading during the growing season, etc. It is a good idea to have an operation-specific nutrient management plan developed.
• Install a minimum 40’ riparian or wetland buffer by planting native trees and shrubs and a low-growing ground cover; may involve the retirement of some agricultural land.
• Unless critical to a farming operation, consider converting the most sensitive fields to a wildlife land use or allow to grow up into early successional habitat (e.g., Fields 5, 9, 11, 16 where most of the field contains hydric soils and production of certain crops may suffer, especially in wetter years, and close proximity to a brook/pond). Due to perennial wetness, fields in this area are best suited for annual crops only.

Erosion Control – Zone 2

• High Erodible Land, or HEL. Fields 4, 6, 8, and 21 are HEL. I observed significant gully, sheet, and rill erosion occurring in Fields 3 and 8 indicating current management is not enough to hold the soil in place. The other HEL fields are not showing these signs likely because they are in some form of perennial cover. Most of the forested land is also considered HEL, except for the area that is considered wetlands. Typical recommendations for HEL we may give are:
  o Do not convert any currently-forested land to agricultural land as you would see potentially significant erosion. If converted to agricultural production, consider only perennial crops (e.g., hay/pasture, orchard).
  o Go with a plan that contains conservation practices that reduce soil erosion below a tolerable level, especially on HEL fields. Annually-tilled land, or any soil without perennial cover is usually the main concern and could include recommendations such as cover crop planted at the right time of year, use of reduced- or no-till practices, installing contour buffer strips, and/or seeding down between rows or whole fields into perennial herbaceous cover.
Considerations

- The cost to convert forest to agricultural production will be high as the area will have to be stumped and the new fields will be very low in pH and nutrients, requiring a significant application of commercial products and/or wood ash. Consider who will be paying for this and understand that a farmer may not have the ability, time, and/or money to do this. You should also consider location in relation to slope of field (avoid HEL land), access, and proximity to wetlands, among other things.

- The invasive plant species pressure is significant on the property, in particular around the edge of the fields and in some cases within (e.g., Field 2). I would recommend putting effort into getting these under control, at least around the field boundaries. This will also help alleviate encroachment of woody plants into the ag fields. If this is a concern for you, consider who will be paying for and doing the work; the same concern for the farmer as described in the last point applies here.

- The actions that the town or any tenant has performed or will perform on this land related to HEL land or wetlands could negatively affect a tenant’s ability to participate in NRCS or FSA programs or could cause problems for a tenant who already participates in our programs if they assume control of the farmland on this property. Actions include, but are not limited to, land clearing, installation and maintenance of tile drainage, dredging, and filling. It would be advantageous for the town to review the attached 1026 form for HEL and wetland compliance, gather information from previous and current tenants and the current land owner about activities related to wetlands and HEL land that have occurred since 12/23/1985, and make sure that the bidders understand what has happened there so they can check in with USDA as to how their eligibility could be affected if they currently or want to work with NRCS or FSA.

Michael Birchler
District Conservationist
Merrimack & Hillsborough Co.
USDA-NRCS
Phone: (603)362-2645
21:34-a Farm, Agriculture, Farming. –

I. The word "farm" means any land, buildings, or structures on or in which agriculture and farming operations or activities are carried out or conducted and shall include the residence or residences of owners, occupants, or employees located on such land. Structures shall include all farm outbuildings used in the care of livestock; in the production and storage of fruit, vegetables, or nursery stock; in the production of maple syrup; greenhouses for the production of annual or perennial plants; and any other structures used in the operations or activities named in paragraph II(a) or (b) of this section or any combination of such individual operations or activities.

II. The words "agriculture" and "farming" mean all operations or activities of a farm, including:

(a)(1) The cultivation, conservation, or tillage of the soil.

(2) The storage and use of or spreading of commercial fertilizer, lime, wood ash, sawdust, compost, animal manure, septage, and, where permitted by municipal and state rules and regulations, other lawful soil amendments.

(3) The use of or application of agricultural chemicals.

(4) The husbandry of livestock which shall include but not be limited to all beef or dairy cattle, steer, oxen, goats, sheep, swine, horses, mules or other equidae, as well as domesticated strains of buffalo, bison, llamas, alpacas, emus, ostriches, poultry, rabbits, yaks, elk (Cervus canadensis), fallow deer (Dama dama), red deer (Cervus elephus), or reindeer (Rangifer tarandus).

(5) The husbandry, boarding, training, or riding instruction of equines.

(6) The husbandry and harvesting aquaculture products including fresh or salt water finfish, shellfish, or other aquatic organisms grown for consumption or processing.

(7) The husbandry of poultry or game birds or production of eggs.

(8) The husbandry of bees or production of honey.

(9) The husbandry of domesticated strains of fur-bearing animals.

(10) The production of greenhouse crops.

(11) The production, cultivation, growing, or harvesting of any agricultural, floricultural, viticultural, forestry, or horticultural crops including, but not limited to, berries, herbs, honey, maple syrup, fruit, vegetables, tree fruit, grapes, flowers, seeds, grasses, nursery stock, sod, trees or tree products, Christmas trees grown as part of a commercial Christmas tree operation, trees grown for short rotation tree fiber, compost, or any plant that can be legally grown or harvested extensively for profit or subsistence.
(b) Any practice or activity on the farm incident to, ancillary to, or in conjunction with such farming operations, including, but not necessarily restricted to:

1. Preparation for market, delivery to storage or to market, or to carriers for transportation to market of any products or materials from the farm.
2. The transportation to the farm of supplies and materials.
3. The transportation of farm workers.
4. Forestry or lumbering operations.
5. Marketing or selling at wholesale or retail, regardless of the manner or form of the transaction, any livestock or products derived principally from the production of the farm, including, but not limited to items listed in subparagraph (a), whether on-site or off-site, provided that marketing such products is not specifically prohibited by local regulations. For the purposes of this section marketing shall include agritourism, which means attracting visitors to a farm to attend events or activities that are accessory uses to the primary farm operation, including, but not limited to, being provided a meal, making overnight stays, enjoyment of the farm environment, education which shall be instruction or learning about the farm's operations, or active involvement in the activities of the farm.
6. Irrigation of growing crops from private water supplies or public water supplies where not prohibited by state or local rule or regulation.
7. The use of dogs for herding, working, or guarding livestock, as defined in RSA 21:34-a, II(a)(4).
8. The production and storage of compost and the materials necessary to produce compost, whether such materials originate, in whole or in part, from operations of the farm.

III. A farm roadside stand shall remain an agricultural operation and not be considered commercial, provided that at least 35 percent of the product sales in dollar volume is attributable to products produced on the farm or farms of the stand owner.

IV. Management practices on the farm shall include technologies recommended from time to time by the university of New Hampshire cooperative extension, the New Hampshire department of agriculture, markets, and food, or appropriate agencies of the United States Department of Agriculture.

V. The term "farmers' market" means an event or series of events at which 2 or more vendors of agricultural commodities gather for purposes of offering for sale such commodities to the public. Commodities offered for sale must include, but are not limited to, products of agriculture, as defined in paragraphs I-IV. "Farmers' market" shall not include any event held upon any premises owned, leased, or otherwise controlled by any individual vendor selling therein.

VI. [Repealed.]


Appendix C – NRCS Soil Map Reference, Nutrient and Erosion Control Guidelines
NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

NUTRIENT MANAGEMENT
(Ac.)

CODE 590

DEFINITION
Managing the amount (rate), source, placement (method of application), and timing of plant nutrients and soil amendments.

PURPOSE
- To budget, supply, and conserve nutrients for plant production.
- To minimize agricultural nonpoint source pollution of surface and groundwater resources.
- To properly utilize manure or organic by-products as a plant nutrient source.
- To protect air quality by reducing odors, nitrogen emissions (ammonia, oxides of nitrogen), and the formation of atmospheric particulates.
- To maintain or improve the physical, chemical, and biological condition of soil.

CONDITIONS WHERE PRACTICE APPLIES
This practice applies to all lands where plant nutrients and soil amendments are applied. This standard does not apply to one-time nutrient applications to establish perennial crops.

CRITERIA
General Criteria Applicable to All Purposes
A nutrient budget for nitrogen, phosphorus, and potassium must be developed that considers all potential sources of nutrients including, but not limited to, green manures, legumes, crop residues, compost, animal manure, organic by-products, biosolids, waste water, organic matter, soil biological activity, commercial fertilizer, and irrigation water.

Enhanced efficiency fertilizers, used in the State must be defined by the Association of American Plant Food Control Officials (AAPFCO) and be accepted for use by the State fertilizer control official, or similar authority, with responsibility for verification of product guarantees, ingredients (by AAPFCO definition) and label claims.

For nutrient risk assessment policy and procedures see Title 190, General Manual (GM), Part 402, Nutrient Management, and Title 190, National Instruction (NI), Part 302, Nutrient Management Policy Implementation.

To avoid salt damage, the rate and placement of applied nitrogen and potassium in starter fertilizer must be consistent with land-grant university guidelines, or industry practice recognized by the land-grant university.

The NH NRCS Nitrogen Leaching Index and Phosphorus Index must be completed on all sites where nutrient applications are planned.

On organic operations, the nutrient sources and management must be consistent with the USDA's National Organic Program.

Areas contained within minimum application setbacks (e.g., sinkholes, wellheads, gullies, ditches, or surface inlets) must receive nutrients consistent with the setback restrictions.

Identify the following sensitive areas near fields receiving nutrients and locate them on maps:
- Wells and other potable water supplies
- Drainageways or waterways
- Streams, rivers, lakes, ponds, wetlands

Do not apply manure on bedrock outcrops or within ditches, diversions, grassed waterways, or other areas of concentrated flow.

Minimum up-slope manure spreading setbacks from surface water, intermittent streams, wetlands or other sensitive areas:
- 35 feet if there is a perennial, vegetative buffer with no channelized flow.
- 100 feet if there is no vegetative buffer or channelized flow.
Vegetative buffers may be harvested and commercial fertilizer can only be applied during the growing season according to soil test recommendations. Herbaceous buffers should have >50% ground cover. Buffer width is generally measured from the top of the bank adjoining surface waters or other waterways. Utilize Filter Strip (393) or Riparian Forest Buffer (391) to establish buffers.

Follow NH DES rules for manure and fertilizer setbacks around wells. The type of well, whether public or private, or whether drilled or shallow well or spring, shall be considered in establishing setbacks around wells. Minimum setbacks for private wells is 75 feet.

Sanitary protective areas for non-community and community public water system are below.

- Soil fertilization and wastewater disposal shall be excluded from within the sanitary protective area on non-community systems.
- Sanitary protective areas for community water systems shall be maintained in a natural state.

<table>
<thead>
<tr>
<th>Production Volume (gal/day) and Public Water System Type</th>
<th>Sanitary Protective Radius (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=750 (non-community)</td>
<td>75</td>
</tr>
<tr>
<td>751-1,440 (non-community)</td>
<td>100</td>
</tr>
<tr>
<td>1,441-4,320 (non-community)</td>
<td>125</td>
</tr>
<tr>
<td>4,321-14,400 (non-community)</td>
<td>150</td>
</tr>
<tr>
<td>&lt;=14,400 (community)</td>
<td>200</td>
</tr>
<tr>
<td>14,401 to 28,800 (either)</td>
<td>225</td>
</tr>
<tr>
<td>28,801 to 57,599 (either)</td>
<td>300</td>
</tr>
<tr>
<td>57,600 to 86,400 (either)</td>
<td>350</td>
</tr>
<tr>
<td>86,401 to 115,200 (either)</td>
<td>400</td>
</tr>
<tr>
<td>115,201 to 144,000 (either)</td>
<td></td>
</tr>
<tr>
<td>&gt;144,000 (either)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Env-Dw 301.06, Env-Dw 302.06, Env-Ws 373.12.

Applications of irrigation water must minimize risk of nutrient loss to surface and groundwater.

Soil pH must be maintained in a range that enhances an adequate level for crop nutrient availability and utilization.

Soil, Manure, and Tissue Sampling and Laboratory Analyses (Testing)

Nutrient planning must be based on current soil, manure, and (where used as supplemental information) tissue test results developed in accordance with land-grant university guidance, or industry practice, if recognized by the university.

Current soil tests are those that are no older than 3 years, but may be taken on an interval recommended by the land-grant university or as required by State code. The area represented by a soil test must be that acreage recommended by the land-grant university.

Where a conservation management unit (CMU) is used as the basis for a sampling unit, all acreage in the CMU must have similar soil type, cropping history, and management.

Standard soil test analyses shall be conducted using the Mehlich-III or Modified Morgan extraction method. UNH provides soils test recommendations using the Mehlich-III extract. If Modified Morgan is used, recommendations shall comply with regional guidelines from any land grant university in New England, NY or PA.

The soil and tissue tests must include analyses pertinent to monitoring or amending the annual nutrient budget, e.g., pH, electrical conductivity (EC) and sodicity where salts are a concern, soil organic matter, phosphorus, potassium, or other nutrients and test for nitrogen where applicable. Follow UNH guidelines for analyses.

Soil test analyses must be performed by laboratories successfully meeting the requirements and performance standards of the North American Proficiency Testing Program-Performance Assessment Program (NAPT-PAP) under the auspices of the Soil Science Society of America and NRCS, or other NRCS-approved program that considers laboratory performance and proficiency to assure accuracy of soil test results. Soil testing laboratories at New England, NY or PA land grant universities are approved labs if not listed in NAPT-PAP. Alternate proficiency testing programs must have solid stakeholder (e.g., water quality control entity, NRCS State staff, growers, etc) support and be regional in scope.

Nutrient values of manure, organic by-products and biosolids must be determined prior to land application.

NRCS, NH
January 2014
Manure analyses must include, at minimum, total nitrogen (N), ammonium N, total phosphorus (P) or P2O5, total potassium (K) or K2O, and percent solids, or follow land-grant university guidance regarding required analyses.

Manure, organic by-products, and biosolids samples must be collected and analyzed at least annually, or more frequently if needed to account for operational changes (feed management, animal type, manure handling strategy, etc.) impacting manure nutrient concentrations. If no operational changes occur, less frequent manure testing is allowable where operations can document a stable level of nutrient concentrations for the preceding three consecutive years, unless federal, State, or local regulations require more frequent testing.

Samples must be collected, prepared, stored, and shipped, following land-grant university guidance or industry practice.

When planning for new or modified livestock operations, acceptable “book values” recognized by the NRCS (e.g., NRCS Agricultural Waste Management Field Handbook) and the land-grant university, or analyses from similar operations in the geographical area, may be used if they accurately estimate nutrient output from the proposed operation.

Manure testing analyses must be performed by laboratories successfully meeting the requirements and performance standards of the Manure Testing Laboratory Certification program (MTLCP) under the auspices of the Minnesota Department of Agriculture, or other NRCS-approved program that considers laboratory performance and proficiency to assure accurate manure test results.

Nutrient Application Rates

Planned nutrient application rates for nitrogen, phosphorus, and potassium must not exceed land-grant university guidelines or industry practice when recognized by the university.

At a minimum, determination of rate must be based on crop/cropping sequence, current soil test results, realistic yield goals, and NRCS-approved nutrient risk assessments.

If the land-grant university does not provide specific guidance that meets these criteria, application rates must be based on plans that consider realistic yield goals and associated plant nutrient uptake rates.

Realistic yield goals must be established based on historical yield data, soil productivity information, climatic conditions, nutrient test results, level of management, and local research results considering comparable production conditions.

Estimates of yield response must consider factors such as poor soil quality, drainage, pH, salinity, etc., prior to assuming that nitrogen and/or phosphorus are deficient.

For new crops or varieties, industry-demonstrated yield, and nutrient utilization information may be used until land-grant university information is available.

Lower-than-recommended nutrient application rates are permissible if the grower’s objectives are met.

Applications of biosolids, starter fertilizers, or pop-up fertilizers must be accounted for in the nutrient budget.

Nutrient Sources.

Nutrient sources utilized must be compatible with the application timing, tillage and planting system, soil properties, crop, crop rotation, soil organic content, and local climate to minimize risk to the environment.

Nutrient Application Timing and Placement.

Timing and placement of all nutrients must correspond as closely as practical with plant nutrient uptake (utilization by crops), and consider nutrient source, cropping system limitations, soil properties, weather conditions, drainage system, soil biology, and nutrient risk assessment results.

Nutrients must not be surface-applied if nutrient losses offsite are likely. Spreading manure or nutrients is not allowed on frozen and/or snow-covered soils or when the top 2 inches of soil are saturated with rainfall or snow melt.

Additional Criteria to Minimize Agricultural Nonpoint Source Pollution of Surface and Groundwater

Planners must use the current NRCS-approved nitrogen, phosphorus, and soil erosion risk assessment tools to assess the risk of nutrient and soil loss. Identified resource concerns must be addressed to meet current planning criteria (quality criteria). Technical criteria for risk assessments can be found in NI-190-302.
When there is a high risk of nutrient transport, conservation practices must be coordinated to avoid, control, or trap manure and nutrients before they can leave the field by surface or subsurface drainage (e.g., tile). The number of applications and application rates must also be considered to limit transport of nutrients to tile.

Nutrients must be applied with the right placement, in the right amount, at the right time, and from the right source to minimize nutrient losses to surface and groundwater. The following nutrient use efficiency strategies or technologies must be considered:

- slow and controlled release fertilizers
- nitrification and urease inhibitors
- enhanced efficiency fertilizers
- incorporation or injection
- timing and number of applications
- soil nitrate and organic N testing
- coordinate nutrient applications with optimum crop nutrient uptake
- Corn Stalk Nitrate Test (CSNT), Pre-Sidedress Nitrate Test (PSNT), and Pre-Plant Soil Nitrate Test (PPSN)
- tissue testing, chlorophyll meters, and spectral analysis technologies
- other land-grant university recommended technologies that improve nutrient use efficiency and minimize surface or groundwater resource concerns.

Additional Criteria Applicable to Properly Utilize Manure or Organic By-Products as a Plant Nutrient Source

When manures are applied, and soil salinity is a concern, salt concentrations must be monitored to prevent crop damage or reduced soil quality.

The total single application of liquid manure:

- must not exceed the soil’s infiltration or water holding capacity
- be based on crop rooting depth
- must be adjusted to avoid runoff or loss to subsurface tile drains.

Crop production activities and nutrient use efficiency technologies must be coordinated to take advantage of mineralized plant-available nitrogen to minimize the potential for N losses due to denitrification or ammonia volatilization.

Nitrogen and phosphorus application rates must be planned based on soil test results and follow risk management requirements from the NH N and P Index. Nitrogen credits must be taken for previous legume crops and manure applications.

Phosphorus Risk Assessment:

- LOW: phosphorus can be applied at rates > crop requirement not to exceed the nitrogen requirement for the succeeding crop.
- MODERATE: phosphorus may be applied at a phosphorus crop requirement rate (P-based recommendations or P removal rate) for the planned crops in the rotation.
- HIGH: phosphorus be applied at phosphorus crop removal rates if:
  - a soil phosphorus drawdown strategy has been implemented (apply at <75% of P2O5 removal rate), and
  - a site assessment for nutrients and soil loss has been conducted to determine if additional mitigation practices are required to protect water quality, or
  - Written approval to deviate is obtained from the Chief of the NRCS.
- VERY HIGH: no phosphorus application

Nitrogen Risk Assessment:

- LOW: no specific constraints
- MODERATE: Consider split application of N. Consider cover cropping with annual crops.
- HIGH: Split application of N required; cover crops required for annual crops. Do not exceed 150 lbs/ac N. Consider using PSNT, Adapt-N, and other N management tools.
- VERY HIGH: Split application of N required; cover crops required for annual crops. Do not exceed 120 lbs/ac N. Use adaptive/ enhanced N management tools such as PSNT, Adapt-N, tissue tests, strip trials or nitrification or urease inhibitors. Do not apply manure or N from Oct 15- Apr 1. The potential for movement of soluble P and other soluble nutrients is also high and additional nutrient management tools should be considered.

NRCS, NH
January 2014

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact your Natural Resources Conservation Service State Office or visit the electronic Field Office Technical Guide.
Manure or organic by-products may be applied on legumes at rates equal to the estimated removal of nitrogen in harvested plant biomass, not to exceed recommendations.

Manure may be applied at a rate equal to the recommended phosphorus application, or estimated phosphorus removal in harvested plant biomass for the crop rotation, or multiple years in the crop sequence at one time. When such applications are made, the application rate must not exceed the acceptable phosphorus risk assessment criteria, must not exceed the recommended nitrogen application rate during the year of application or harvest cycle, and no additional phosphorus must be applied in the current year and any additional years for which the single application of phosphorus is supplying nutrients.

Additional Criteria to Protect Air Quality by Reducing Odors, Nitrogen Emissions and the Formation of Atmospheric Particulates

To address air quality concerns caused by odor, nitrogen, sulfur, and/or particulate emissions; the source, timing, amount, and placement of nutrients must be adjusted to minimize the negative impact of these emissions on the environment and human health. One or more of the following may be used:

- slow or controlled release fertilizers
- nitrification inhibitors
- urease inhibitors
- nutrient enhancement technologies
- incorporation
- injection
- stabilized nitrogen fertilizers
- residue and tillage management
- no-till or strip-till
- other technologies that minimize the impact of these emissions

Do not apply poultry litter, manure, or organic by-products of similar dryness/density when there is a high probability that wind will blow the material offsite.

Additional Criteria to Improve or Maintain the Physical, Chemical, and Biological Condition of the Soil to Enhance Soil Quality for Crop Production and Environmental Protection

Time the application of nutrients to avoid periods when field activities will result in soil compaction.

In areas where salinity is a concern, select nutrient sources that minimize the buildup of soil salts.

CONSIDERATIONS

Elevated soil test phosphorus levels are detrimental to soil biota. Soil test phosphorus levels should not exceed State-approved soil test thresholds established to protect the environment.

Use no-till/strip-till in combination with cover crops to sequester nutrients, increase soil organic matter, increase aggregate stability, reduce compaction, improve infiltration, and enhance soil biological activity to improve nutrient use efficiency.

Use nutrient management strategies such as cover crops, crop rotations, and crop rotations with perennials to improve nutrient cycling and reduce energy inputs.

Use variable-rate nitrogen application based on expected crop yields, soil variability, soil nitrate or organic N supply levels, or chlorophyll concentration.

Use variable-rate nitrogen, phosphorus, and potassium application rates based on site-specific variability in crop yield, soil characteristics, soil test values, and other soil productivity factors.

Develop site-specific yield maps using a yield monitoring system. Use the data to further diagnose low- and high- yield areas, or zones, and make the necessary management changes. See Title 190, Agronomy Technical Note (TN) 190.AGR.3, Precision Nutrient Management Planning.

Use manure management conservation practices to manage manure nutrients to limit losses prior to nutrient utilization.

Apply manure at a rate that will result in an “improving” Soil Conditioning Index (SCI) without exceeding acceptable risk of nitrogen or phosphorus loss.
Use legume crops and cover crops to provide nitrogen through biological fixation and nutrient recycling.

Modify animal feed diets to reduce the nutrient content of manure following guidance contained in Conservation Practice Standard (CPS) Code 592, Feed Management.

Soil test information should be no older than 1 year when developing new plans.

Excessive levels of some nutrients can cause induced deficiencies of other nutrients, e.g., high soil test phosphorus levels can result in zinc deficiency in corn.

Use soil tests, plant tissue analyses, and field observations to check for secondary plant nutrient deficiencies or toxicity that may impact plant growth or availability of the primary nutrients.

Use the adaptive nutrient management learning process to improve nutrient use efficiency on farms as outlined in the NRCS' National Nutrient Policy in GM 190, Part 402, Nutrient Management.

Potassium should not be applied in situations where an excess (greater than soil test potassium recommendation) causes nutrient imbalances in crops or forages.

Workers should be protected from and avoid unnecessary contact with plant nutrient sources. Extra caution must be taken when handling anhydrous ammonia or when dealing with organic wastes stored in unventilated enclosures.

Material generated from cleaning nutrient application equipment should be utilized in an environmentally safe manner. Excess material should be collected and stored or field applied in an appropriate manner.

Nutrient containers should be recycled in compliance with State and local guidelines or regulations.

**Considerations to Minimize Agricultural Nonpoint Source Pollution of Surface and Groundwater**

Use conservation practices that slow runoff, reduce erosion, and increase infiltration, e.g., filter strip, contour farming, or contour buffer strips. These practices can also reduce the loss of nitrates or soluble phosphorus.

See NH DES maps and lists of impaired waters to assist with risk assessment. The NH Comprehensive Shoreland Protection Act also contains recommended and restricted activities within 250 feet of water bodies where applicable (note: agricultural operations are exempt from the Shoreland Protection Act).

Use application methods and timing strategies that reduce the risk of nutrient transport by ground and surface waters, such as:

- split applications of nitrogen to deliver nutrients during periods of maximum crop utilization,
- banded applications of nitrogen and/or phosphorus to improve nutrient availability,
- drainage water management to reduce nutrient discharge through drainage systems, and
- incorporation of surface-applied manures or organic by-products if precipitation capable of producing runoff or erosion is forecast within the time of planned application.

Use the agricultural chemical storage facility conservation practice to protect air, soil, and water quality.

**Considerations to Protect Air Quality by Reducing Nitrogen and/or Particulate Emissions to the Atmosphere**

Avoid applying manure and other by-products upwind of inhabited areas.

Use high-efficiency irrigation technologies (e.g., reduced-pressure drop nozzles for center pivots) to reduce the potential for nutrient losses.

**PLANS AND SPECIFICATIONS**

The following components must be included in the nutrient management plan:

- aerial site photograph(s)/imagery or site map(s), and a soil survey map of the site,
- soil information including: soil type surface texture, pH, drainage class, permeability, available water capacity, depth to water table, restrictive features, and flooding and/or ponding frequency,
- location of designated sensitive areas and the associated nutrient application restrictions and setbacks,
- for manure applications, location of nearby

NRCS, NH
January 2014

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact your Natural Resources Conservation Service State Office or visit the electronic Field Office Technical Guide.
residences, or other locations where humans may be present on a regular basis, and any identified meteorological (e.g., prevailing winds), or topographical influences that may affect the transport of odors to those locations,

- results of approved risk assessment tools for nitrogen, phosphorus, and erosion losses,
- documentation establishing that the application site presents low risk for phosphorus transport to local water when phosphorus is applied in excess of crop requirement,
- current and/or planned plant production sequence or crop rotation,
- soil, water, compost, manure, organic byproduct, and plant tissue sample analyses applicable to the plan,
- when soil phosphorus levels are increasing, include a discussion of the risk associated with phosphorus accumulation and a proposed phosphorus draw-down strategy,
- realistic yield goals for the crops,
- complete nutrient budget for nitrogen, phosphorus, and potassium for the plant production sequence or crop rotation,
- listing and quantification of all nutrient sources and form,
- all enhanced efficiency fertilizer products that are planned for use,
- in accordance with the nitrogen and phosphorus risk assessment tool(s), specify the recommended nutrient application source, timing, amount (except for precision/variable rate applications specify method used to determine rate), and placement of plant nutrients for each field or management unit, and
- guidance for implementation, operation and maintenance, and recordkeeping.

In addition, the following components must be included in a precision/variable rate nutrient management plan:

- Document the nutrient recommendation guidance and recommendation equations used to convert the GIS base data layer or layers to a nutrient source material recommendation GIS layer or layers.
- Document if a variable rate nutrient or soil amendment application was made.
- Provide application records per management zone or as applied map within individual field boundaries (or electronic records) documenting source, timing, method, and rate of all applications that resulted from use of the precision agriculture process for nutrient or soil amendment applications.
- Maintain the electronic records of the GIS data layers and nutrient applications for at least 5 years.

If increases in soil phosphorus levels are expected (i.e., when N-based rates are used), the nutrient management plan must document:

- the soil phosphorus levels at which it is desirable to convert to phosphorus based planning,
- the potential plan for soil test phosphorus drawdown from the production and harvesting of crops, and
- management activities or techniques used to reduce the potential for phosphorus transport and loss,
- for AFOs, a quantification of manure produced in excess of crop nutrient requirements, and
- a long-term strategy and proposed implementation timeline for reducing soil P to levels that protect water quality.

**OPERATION AND MAINTENANCE**

Conduct periodic plan reviews to determine if adjustments or modifications to the plan are needed. At a minimum, plans must be reviewed and revised, as needed with each soil test cycle, changes in manure volume or analysis, crops, or crop management.

Fields receiving animal manures and/or biosolids must be monitored for the accumulation of heavy metals and phosphorus.
in accordance with land-grant university guidance and State law.

When sewage sludge is applied, the accumulation of potential pollutants (including arsenic, cadmium, copper, lead, selenium, and zinc) in the soil shall be monitored according to NH DES 800 rules for Sludge and Septage. Application rates determined by UNH will be used. Documentation must be maintained according to state regulations. NH DES regulates the collection, handling, burning, storage, treatment, land application, disposal, and transportation of biosolids, septage, or any produce contacting these materials which is generated or utilized in NH.

Significant changes in animal numbers, management, and feed management will necessitate additional manure analyses to establish a revised average nutrient content.

Calibrate application equipment to ensure accurate distribution at planned rates.

Document the nutrient application rate. When the applied rate differs from the planned rate, provide appropriate documentation for the change.

Records must be maintained for at least 5 years to document plan implementation and maintenance. As applicable, records include:

- soil, plant tissue, water, manure, and organic by-product analyses resulting in recommendations for nutrient application,
- quantities, analyses and sources of nutrients applied,
- dates, and method(s) of nutrient applications, source of nutrients, and rates of application,
- weather conditions and soil moisture at the time of application; lapsed time to manure incorporation; rainfall or irrigation event,
- crops planted, planting and harvest dates, yields, nutrient analyses of harvested biomass, and crop residues removed,
- dates of plan review, name of reviewer, and recommended changes resulting from the review, and
- all enhanced efficiency fertilizers used.

Additional records for precision/variable rate sites must include:
- maps identifying the variable application source, timing, amount, and placement of all plant nutrients applied, and
- GPS-based yield maps for crops where yields can be digitally collected.

REFERENCES


Map Unit Description

Hillsborough County, New Hampshire, Eastern Part

[Minor map unit components are excluded from this report]

Map unit: AgA - Agawam fine sandy loam, 0 to 3 percent slopes

Component: Agawam (85%)

The Agawam component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. This component is on outwash terraces on valleys. The parent material consists of coarse-loamy over sandy and gravelly glaciofluvial deposits derived from gneiss, granite, schist, and/or phyllite. Depth to a root restrictive layer, strongly contrasting textural stratification, is 15 to 35 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Map unit: AgB - Agawam fine sandy loam, 3 to 8 percent slopes

Component: Agawam (85%)

The Agawam component makes up 85 percent of the map unit. Slopes are 3 to 8 percent. This component is on outwash terraces on valleys. The parent material consists of coarse-loamy over sandy and gravelly glaciofluvial deposits derived from gneiss, granite, schist, and/or phyllite. Depth to a root restrictive layer, strongly contrasting textural stratification, is 15 to 35 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Map unit: BaA - Belgrade silt loam, 0 to 3 percent slopes

Component: Belgrade (85%)

The Belgrade component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. The parent material consists of glaciolacustrine. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Map unit: BaB - Belgrade silt loam, 3 to 8 percent slopes

Component: Belgrade (85%)

The Belgrade component makes up 85 percent of the map unit. Slopes are 3 to 8 percent. The parent material consists of glaciolacustrine. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Map unit: BdA - Bernardston variant very fine sandy loam, 0 to 3 percent slopes

Component: Bernardston Variant (90%)

The Bernardston Variant component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. The parent material consists of basal till derived from schist and phyllite. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 20 inches during February, March, April. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria.
Map Unit Description
Hillsborough County, New Hampshire, Eastern Part

Map unit: BdB - Bernardston variant very fine sandy loam, 3 to 8 percent slopes
Component: Bernardston Variant (85%)

The Bernardston Variant component makes up 85 percent of the map unit. Slopes are 3 to 8 percent. The parent material consists of basal till derived from schist and phyllite. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 20 inches during February, March, April. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Map unit: BdC - Bernardston variant very fine sandy loam, 8 to 15 percent slopes
Component: Bernardston Variant (85%)

The Bernardston Variant component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. The parent material consists of basal till derived from schist and phyllite. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 20 inches during February, March, April. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map unit: BeC - Bernardston variant stony very fine sandy loam, 8 to 15 percent slopes
Component: Bernardston Variant (90%)

The Bernardston Variant component makes up 90 percent of the map unit. Slopes are 8 to 15 percent. The parent material consists of basal till derived from schist and phyllite. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 20 inches during February, March, April. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Map unit: BeD - Bernardston variant stony very fine sandy loam, 15 to 35 percent slopes
Component: Bernardston Variant (90%)

The Bernardston Variant component makes up 90 percent of the map unit. Slopes are 15 to 35 percent. The parent material consists of basal till derived from schist and phyllite. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 20 inches during February, March, April. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Map unit: Bg - Binghamville silt loam
Component: Binghamville (90%)

The Binghamville component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on lake terraces. The parent material consists of glaciolacustrine. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, June, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.
Map Unit Description

Hillsborough County, New Hampshire, Eastern Part

Map unit: BoA - Borohemists, nearly level

Component: Borohemists (90%)

The Borohemists component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on bogs. The parent material consists of herbaceous organic material and/or woody organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is high. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 90 percent. This soil meets hydric criteria.

Map unit: BpA - Borohemists, ponded

Component: Borohemists (90%)

The Borohemists component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on bogs. The parent material consists of herbaceous organic material and/or woody organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is high. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 90 percent. This soil meets hydric criteria.

Map unit: CaB - Canton fine sandy loam, 0 to 8 percent slopes

Component: Canton (85%)

The Canton component makes up 85 percent of the map unit. Slopes are 0 to 8 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Map unit: CaC - Canton fine sandy loam, 8 to 15 percent slopes

Component: Canton (85%)

The Canton component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map unit: CaD - Canton fine sandy loam, 15 to 25 percent slopes

Component: Canton (90%)

The Canton component makes up 90 percent of the map unit. Slopes are 15 to 25 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Map unit: CmB - Canton stony fine sandy loam, 3 to 8 percent slopes

Component: Canton (85%)

The Canton component makes up 85 percent of the map unit. Slopes are 3 to 8 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.
Map unit: CmB - Canton stony fine sandy loam, 3 to 8 percent slopes

Component: Canton (85%)

Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Map unit: CmC - Canton stony fine sandy loam, 8 to 15 percent slopes

Component: Canton (85%)

The Canton component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Map unit: CmD - Canton stony fine sandy loam, 15 to 25 percent slopes

Component: Canton (90%)

The Canton component makes up 90 percent of the map unit. Slopes are 15 to 25 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Map unit: CmE - Canton stony fine sandy loam, 25 to 35 percent slopes

Component: Canton (90%)

The Canton component makes up 90 percent of the map unit. Slopes are 25 to 35 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Map unit: CnC - Canton very stony fine sandy loam, 8 to 15 percent slopes

Component: Canton (90%)

The Canton component makes up 90 percent of the map unit. Slopes are 8 to 15 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Map unit: CnD - Canton very stony fine sandy loam, 15 to 35 percent slopes

Component: Canton (90%)

The Canton component makes up 90 percent of the map unit. Slopes are 15 to 35 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.
Map Unit Description

Hillsborough County, New Hampshire, Eastern Part

Map unit: CoC - Canton-Urban land complex, 3 to 15 percent slopes

Component: Canton (50%)

The Canton component makes up 50 percent of the map unit. Slopes are 3 to 15 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Urban land (35%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Map unit: CpB - Chatfield-Hollis-Canton complex, 3 to 8 percent slopes

Component: Chatfield (35%)

The Chatfield component makes up 35 percent of the map unit. Slopes are 3 to 8 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Component: Hollis (30%)

The Hollis component makes up 30 percent of the map unit. Slopes are 3 to 8 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Canton (25%)

The Canton component makes up 25 percent of the map unit. Slopes are 3 to 8 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Map unit: CpC - Chatfield-Hollis-Canton complex, 8 to 15 percent slopes

Component: Chatfield (35%)

The Chatfield component makes up 35 percent of the map unit. Slopes are 8 to 15 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Hollis (30%)

The Hollis component makes up 30 percent of the map unit. Slopes are 8 to 15 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.
**Map Unit Description**

Hillsborough County, New Hampshire, Eastern Part

**Map unit: CpC - Chatfield-Hollis-Canton complex, 8 to 15 percent slopes**

Component: Hollis (30%)

Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Canton (25%)

The Canton component makes up 25 percent of the map unit. Slopes are 8 to 15 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

**Map unit: CpD - Chatfield-Hollis-Canton complex, 15 to 25 percent slopes**

Component: Chatfield (35%)

The Chatfield component makes up 35 percent of the map unit. Slopes are 15 to 25 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Hollis (30%)

The Hollis component makes up 30 percent of the map unit. Slopes are 15 to 25 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

Component: Canton (25%)

The Canton component makes up 25 percent of the map unit. Slopes are 15 to 25 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

**Map unit: CsB - Chatfield-Hollis complex, 3 to 8 percent slopes**

Component: Chatfield (45%)

The Chatfield component makes up 45 percent of the map unit. Slopes are 3 to 8 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Component: Hollis (40%)

The Hollis component makes up 40 percent of the map unit. Slopes are 3 to 8 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches.
Hillsborough County, New Hampshire, Eastern Part

Map unit: CsB - Chatfield-Hollis complex, 3 to 8 percent slopes

Component: Hollis (40%)

Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map unit: CsC - Chatfield-Hollis complex, 8 to 15 percent slopes

Component: Chatfield (45%)

The Chatfield component makes up 45 percent of the map unit. Slopes are 8 to 15 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Hollis (40%)

The Hollis component makes up 40 percent of the map unit. Slopes are 8 to 15 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Map unit: CtD - Chatfield-Hollis-Rock outcrop complex, 15 to 35 percent slopes

Component: Chatfield (35%)

The Chatfield component makes up 35 percent of the map unit. Slopes are 15 to 35 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Hollis (30%)

The Hollis component makes up 30 percent of the map unit. Slopes are 15 to 35 percent. The parent material consists of ablation till derived from granite and gneiss. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Rock outcrop (20%)

Generated brief soil descriptions are created for major soil components. The Rock outcrop is a miscellaneous area.

Map unit: Cu - Swansea mucky peat, 0 to 2 percent slopes

Component: Swansea (83%)

The Swansea component makes up 83 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on valleys. The parent material consists of moderately decomposed organic material over sandy and gravelly glaciofluvial deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is...
Map Unit Description
Hillsborough County, New Hampshire, Eastern Part

Map unit: **Cu** - Swansea mucky peat, 0 to 2 percent slopes

Component: Swansea (83%)

Not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 85 percent. Nonirrigated land capability classification is 8. This soil meets hydric criteria.

Map unit: **DeA** - Deerfield loamy fine sand, 0 to 3 percent slopes

Component: Deerfield (90%)

The Deerfield component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. The parent material consists of sandy outwash derived mainly from granite, gneiss and schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria.

Map unit: **DeB** - Deerfield loamy fine sand, 3 to 8 percent slopes

Component: Deerfield (90%)

The Deerfield component makes up 90 percent of the map unit. Slopes are 3 to 8 percent. The parent material consists of sandy outwash derived mainly from granite, gneiss and schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil does not meet hydric criteria.

Map unit: **Dp** - Dumps

Component: Dumps (95%)

Generated brief soil descriptions are created for major soil components. The Dumps is a miscellaneous area.

Map unit: **Gw** - Freetown mucky peat, 0 to 2 percent slopes

Component: Freetown (82%)

The Freetown component makes up 82 percent of the map unit. Slopes are 0 to 1 percent. This component is on depressions on uplands. The parent material consists of moderately decomposed organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 85 percent. Nonirrigated land capability classification is 8. This soil meets hydric criteria.

Map unit: **HsA** - Hinckley loamy sand, 0 to 3 percent slopes

Component: Hinckley (85%)

The Hinckley component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. This component is on kame terraces on valleys. The parent material consists of sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 95 percent. Below this thin organic horizon the organic matter content is about 6 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria.
## Map Unit Description

**Hillsborough County, New Hampshire, Eastern Part**

### Map unit: HsB - Hinckley loamy sand, 3 to 8 percent slopes

**Component:** Hinckley (85%)

The Hinckley component makes up 85 percent of the map unit. Slopes are 3 to 8 percent. This component is on kame terraces on valleys. The parent material consists of sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 95 percent. Below this thin organic horizon the organic matter content is about 6 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria.

### Map unit: HsC - Hinckley loamy sand, 8 to 15 percent slopes

**Component:** Hinckley (85%)

The Hinckley component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. This component is on kame terraces on valleys. The parent material consists of sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 95 percent. Below this thin organic horizon the organic matter content is about 6 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

### Map unit: HsD - Hinckley loamy sand, 15 to 35 percent slopes

**Component:** Hinckley (85%)

The Hinckley component makes up 85 percent of the map unit. Slopes are 15 to 35 percent. This component is on kame terraces on valleys. The parent material consists of sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 95 percent. Below this thin organic horizon the organic matter content is about 6 percent. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

### Map unit: LeA - Leicester variant loam, 0 to 3 percent slopes

**Component:** Leicester Variant (90%)

The Leicester Variant component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on ground moraines. The parent material consists of ablation till derived from schist and phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria.

### Map unit: LeA - Leicester variant stony loam, 0 to 3 percent slopes

**Component:** Leicester Variant (90%)

The Leicester Variant component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on ground moraines. The parent material consists of ablation till derived from schist and phyllite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 7s. This soil meets hydric criteria.
Map Unit Description

Hillsborough County, New Hampshire, Eastern Part

Map unit: LtA - Leicester-Walpole complex, 0 to 3 percent slopes

Component: Leicester (40%)

The Leicester component makes up 40 percent of the map unit. Slopes are 0 to 3 percent. This component is on ground moraines. The parent material consists of ablation till derived from granite and gneiss and/or ablation till derived from mica schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Component: Walpole (35%)

The Walpole component makes up 35 percent of the map unit. Slopes are 0 to 3 percent. This component is on ground moraines. The parent material consists of glaciofluvial deposits derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Map unit: LtB - Leicester-Walpole complex, 3 to 8 percent slopes

Component: Leicester (40%)

The Leicester component makes up 40 percent of the map unit. Slopes are 3 to 8 percent. This component is on ground moraines. The parent material consists of ablation till derived from granite and gneiss and/or ablation till derived from mica schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Component: Walpole (35%)

The Walpole component makes up 35 percent of the map unit. Slopes are 3 to 8 percent. This component is on ground moraines. The parent material consists of glaciofluvial deposits derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Map unit: LvA - Leicester-Walpole complex stony, 0 to 3 percent slopes

Component: Leicester (40%)

The Leicester component makes up 40 percent of the map unit. Slopes are 0 to 3 percent. This component is on ground moraines. The parent material consists of ablation till derived from granite and gneiss and/or ablation till derived from mica schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 7s. This soil meets hydric criteria.

Component: Walpole (35%)

The Walpole component makes up 35 percent of the map unit. Slopes are 0 to 3 percent. This component is on ground moraines. The parent material consists of glaciofluvial deposits derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.
Map Unit Description

Hillsborough County, New Hampshire, Eastern Part

Map unit: LVA - Leicester-Walpole complex stony, 0 to 3 percent slopes

Component: Walpole (35%)

saturation is at 6 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Map unit: LvB - Leicester-Walpole complex stony, 3 to 8 percent slopes

Component: Leicester (40%)

The Leicester component makes up 40 percent of the map unit. Slopes are 3 to 8 percent. This component is on ground moraines. The parent material consists of ablation till derived from granite and gneiss and/or ablation till derived from mica schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Component: Walpole (35%)

The Walpole component makes up 35 percent of the map unit. Slopes are 3 to 8 percent. This component is on ground moraines. The parent material consists of glaciofluvial deposits derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Map unit: MoB - Montauk fine sandy loam, 3 to 8 percent slopes

Component: Montauk (85%)

The Montauk component makes up 85 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills on uplands. The parent material consists of coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Map unit: MoC - Montauk fine sandy loam, 8 to 15 percent slopes

Component: Montauk (85%)

The Montauk component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. This component is on hills on uplands. The parent material consists of coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map unit: MoD - Montauk fine sandy loam, 15 to 25 percent slopes

Component: Montauk (85%)

The Montauk component makes up 85 percent of the map unit. Slopes are 15 to 25 percent. This component is on hills on uplands. The parent material consists of coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.
Map Unit Description
Hillsborough County, New Hampshire, Eastern Part

Map unit: MoD - Montauk fine sandy loam, 15 to 25 percent slopes

Component: Montauk (85%)

ponded. A seasonal zone of water saturation is at 30 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Map unit: MtB - Montauk fine sandy loam, 0 to 8 percent slopes, very stony

Component: Montauk, very stony (85%)

The Montauk, very stony component makes up 85 percent of the map unit. Slopes are 0 to 8 percent. This component is on hills on uplands. The parent material consists of coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 43 inches (depth from the mineral surface is 20 to 39 inches). The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 32 inches (depth from the mineral surface is 30 inches) during January, February, March, April, November, December. Organic matter content in the surface horizon is about 95 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Map unit: MtC - Montauk fine sandy loam, 8 to 15 percent slopes, very stony

Component: Montauk, very stony (85%)

The Montauk, very stony component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. This component is on hills on uplands. The parent material consists of coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 43 inches (depth from the mineral surface is 20 to 39 inches). The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 32 inches (depth from the mineral surface is 30 inches) during January, February, March, April, November, December. Organic matter content in the surface horizon is about 95 percent. Below this thin organic horizon the organic matter content is about 10 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Map unit: MtD - Montauk fine sandy loam, 15 to 25 percent slopes, very stony

Component: Montauk, very stony (85%)

The Montauk, very stony component makes up 85 percent of the map unit. Slopes are 15 to 25 percent. This component is on hills on uplands. The parent material consists of coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 43 inches (depth from the mineral surface is 20 to 39 inches). The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 32 inches (depth from the mineral surface is 30 inches) during January, February, March, April, November, December. Organic matter content in the surface horizon is about 95 percent. Below this thin organic horizon the organic matter content is about 10 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Map unit: NnA - Ninigret fine sandy loam, 0 to 3 percent slopes

Component: Ninigret (85%)

The Ninigret component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. This component is on outwash terraces on valleys. The parent material consists of coarse-loamy over sandy and gravelly glaciofluvial deposits derived from gneiss, granite, schist, and/or phyllite. Depth to a root restrictive layer, strongly contrasting textural stratification, is 18 to 38 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 26 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.
Map Unit Description

Hillsborough County, New Hampshire, Eastern Part

Map unit: NnB - Ninigret fine sandy loam, 3 to 8 percent slopes

Component: Ninigret (85%)

The Ninigret component makes up 85 percent of the map unit. Slopes are 3 to 8 percent. This component is on outwash terraces on valleys. The parent material consists of coarse-loamy over sandy and gravelly glaciofluvial deposits derived from gneiss, granite, schist, and/or phyllite. Depth to a root restrictive layer, strongly contrasting textural stratification, is 18 to 38 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 26 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Map unit: Oc - Occum fine sandy loam

Component: Occum (85%)

The Occum component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. The parent material consists of sandy and/or coarse-loamy alluvium derived from granite, gneiss or schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 60 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria.

Map unit: Om - Occum fine sandy loam, high bottom

Component: Occum (85%)

The Occum component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. The parent material consists of sandy and/or coarse-loamy alluvium derived from granite, gneiss or schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 60 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria.

Map unit: PbB - Paxton fine sandy loam, 3 to 8 percent slopes

Component: Paxton (80%)

The Paxton component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills on uplands. The parent material consists of coarse-loamy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 18 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Map unit: PbC - Paxton fine sandy loam, 8 to 15 percent slopes

Component: Paxton (85%)

The Paxton component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. This component is on hills on uplands. The parent material consists of coarse-loamy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.
Map Unit: **PbD - Paxton fine sandy loam, 15 to 25 percent slopes**

Component: **Paxton (85%)**

The Paxton component makes up 85 percent of the map unit. Slopes are 15 to 25 percent. This component is on hills on uplands. The parent material consists of coarse-loamy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Map Unit: **PfB - Paxton fine sandy loam, 0 to 8 percent slopes, very stony**

Component: **Paxton, very stony (85%)**

The Paxton, very stony component makes up 85 percent of the map unit. Slopes are 0 to 8 percent. This component is on hills on uplands. The parent material consists of coarse-loamy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 43 inches (depth from the mineral surface is 20 to 39 inches). The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 26 inches (depth from the mineral surface is 24 inches) during January, February, March, April, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Map Unit: **PfC - Paxton fine sandy loam, 8 to 15 percent slopes, very stony**

Component: **Paxton, very stony (85%)**

The Paxton, very stony component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. This component is on hills on uplands. The parent material consists of coarse-loamy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 43 inches (depth from the mineral surface is 20 to 39 inches). The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 26 inches (depth from the mineral surface is 24 inches) during January, February, March, April, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Map Unit: **PfD - Paxton fine sandy loam, 15 to 25 percent slopes, very stony**

Component: **Paxton, very stony (90%)**

The Paxton, very stony component makes up 90 percent of the map unit. Slopes are 15 to 25 percent. This component is on hills on uplands. The parent material consists of coarse-loamy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 43 inches (depth from the mineral surface is 20 to 39 inches). The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 26 inches (depth from the mineral surface is 24 inches) during January, February, March, April, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Map Unit: **PfE - Paxton fine sandy loam, 25 to 35 percent slopes, very stony**

Component: **Paxton, very stony (95%)**

The Paxton, very stony component makes up 95 percent of the map unit. Slopes are 25 to 35 percent. This component is on hills on uplands. The parent material consists of coarse-loamy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 43 inches (depth from the mineral surface is 20 to 39 inches). The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 26 inches (depth from the mineral surface is 24 inches) during January, February, March, April, November, December. Organic matter content in the surface
Map Unit Description

Hillsborough County, New Hampshire, Eastern Part

Map unit: PfE - Paxton fine sandy loam, 25 to 35 percent slopes, very stony

Component: Paxton, very stony (95%)

| horizon is about 95 percent. Below this thin organic horizon the organic matter content is about 10 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria. |

Map unit: PhB - Pennichuck channery fine sandy loam, 3 to 8 percent slopes

Component: Pennichuck (90%)

| The Pennichuck component makes up 90 percent of the map unit. Slopes are 3 to 8 percent. The parent material consists of ablation till derived from schist and phyllite and/or till derived from phyllite. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria. |

Map unit: PhC - Pennichuck channery fine sandy loam, 8 to 15 percent slopes

Component: Pennichuck (90%)

| The Pennichuck component makes up 90 percent of the map unit. Slopes are 8 to 15 percent. The parent material consists of ablation till derived from schist and phyllite and/or till derived from phyllite. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria. |

Map unit: PhD - Pennichuck channery fine sandy loam, 15 to 25 percent slopes

Component: Pennichuck (90%)

| The Pennichuck component makes up 90 percent of the map unit. Slopes are 15 to 25 percent. The parent material consists of ablation till derived from schist and phyllite and/or till derived from phyllite. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria. |

Map unit: PiA - Pipestone loamy sand, 0 to 3 percent slopes

Component: Pipestone (90%)

| The Pipestone component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on outwash terraces. The parent material consists of sandy outwash derived mainly from granite, gneiss and schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, June, October, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. |

Map unit: PiB - Pipestone loamy sand, 3 to 8 percent slopes

Component: Pipestone (90%)

| The Pipestone component makes up 90 percent of the map unit. Slopes are 3 to 8 percent. This component is on outwash terraces. The parent material consists of sandy outwash derived mainly from granite, gneiss and schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, June, October, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria. |
Map Unit Description
Hillsborough County, New Hampshire, Eastern Part

Map unit: PiB - Pipestone loamy sand, 3 to 8 percent slopes

Component: Pipestone (90%)

Saturation is at 12 inches during January, February, March, April, May, June, October, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Map unit: Pr - Pits, gravel

Component: Gravel pits (100%)

Generated brief soil descriptions are created for major soil components. The Gravel pits is a miscellaneous area.

Map unit: PtA - Pittstown variant loam, 0 to 3 percent slopes

Component: Pittstown Variant (90%)

The Pittstown Variant component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. The parent material consists of basal till derived from schist and phyllite. Depth to a root restrictive layer, densic material, is 19 to 39 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 18 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Map unit: PtB - Pittstown variant loam, 3 to 8 percent slopes

Component: Pittstown Variant (90%)

The Pittstown Variant component makes up 90 percent of the map unit. Slopes are 3 to 8 percent. The parent material consists of basal till derived from schist and phyllite. Depth to a root restrictive layer, densic material, is 19 to 39 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 18 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Map unit: Pu - Pootatuck fine sandy loam

Component: Pootatuck (90%)

The Pootatuck component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. The parent material consists of sandy and/or coarse-loamy alluvium derived from granite, gneiss or schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Map unit: Qr - Quarries

Component: Quarries (100%)

Generated brief soil descriptions are created for major soil components. The Quarries is a miscellaneous area.

Map unit: RbA - Ridgebury loam, 0 to 8 percent slopes

Component: Ridgebury (85%)

The Ridgebury component makes up 85 percent of the map unit. Slopes are 0 to 8 percent. This component is on depressions. The parent material consists of basal lodgement till derived from granite and gneiss and/or basal lodgement till derived from schist. Depth to
Map unit: RbA - Ridgebury loam, 0 to 8 percent slopes

Component: Ridgebury (85%)  
a root restrictive layer, densic material, is 10 to 39 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 6 percent. This soil meets hydric criteria.

Map unit: ReA - Ridgebury stony loam, 0 to 3 percent slopes

Component: Ridgebury (80%)  
The Ridgebury component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions. The parent material consists of basal lodgement till derived from granite and gneiss and/or basal lodgement till derived from schist. Depth to a root restrictive layer, densic material, is 10 to 39 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 7s. This soil meets hydric criteria.

Map unit: ReB - Ridgebury stony loam, 3 to 8 percent slopes

Component: Ridgebury (85%)  
The Ridgebury component makes up 85 percent of the map unit. Slopes are 3 to 8 percent. This component is on depressions. The parent material consists of basal lodgement till derived from granite and gneiss and/or basal lodgement till derived from schist. Depth to a root restrictive layer, densic material, is 10 to 39 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 7s. This soil meets hydric criteria.

Map unit: Rp - Rippowam fine sandy loam

Component: Rippowam (90%)  
The Rippowam component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on flood plains. The parent material consists of sandy and/or coarse-loamy alluvium derived from granite, gneiss or schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Map unit: Sm - Saco variant silt loam

Component: Saco Variant (90%)  
The Saco Variant component makes up 90 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains. The parent material consists of alluvium derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 13 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria.
Map Unit Description
Hillsborough County, New Hampshire, Eastern Part

Map unit: Sn - Saugatuck loamy sand

Component: Saugatuck (90%)

The Saugatuck component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on outwash terraces. The parent material consists of outwash derived from granite and gneiss. Depth to a root restrictive layer, undefined, is 10 to 16 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, May, June, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria.

Map unit: So - Scarboro mucky fine sandy loam, 0 to 3 percent slopes

Component: Scarboro (80%)

The Scarboro component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on outwash plains, depressions, drainageways. The parent material consists of sandy glaciofluvial deposits derived from schist and/or sandy glaciofluvial deposits derived from gneiss and/or sandy glaciofluvial deposits derived from granite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches (depth from the mineral surface is -3 inches) during January, February, March, April, May, June, November, December. Organic matter content in the surface horizon is about 95 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria.

Map unit: Sr - Scarboro stony mucky loamy sand

Component: Scarboro (90%)

The Scarboro component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions. The parent material consists of outwash derived from granite and gneiss and/or outwash derived from mica schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 8 percent. Nonirrigated land capability classification is 7s. This soil meets hydric criteria.

Map unit: SsA - Scituate fine sandy loam, 0 to 3 percent slopes

Component: Scituate (85%)

The Scituate component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. The parent material consists of flow till derived from granite and gneiss. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Map unit: SsB - Scituate fine sandy loam, 3 to 8 percent slopes

Component: Scituate (85%)

The Scituate component makes up 85 percent of the map unit. Slopes are 3 to 8 percent. The parent material consists of flow till derived from granite and gneiss. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.
Map Unit Description

Hillsborough County, New Hampshire, Eastern Part

Map unit: SsC - Scituate fine sandy loam, 8 to 15 percent slopes

Component: Scituate (85%)

The Scituate component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. The parent material consists of flow till derived from granite and gneiss. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map unit: STA - Scituate stony fine sandy loam, 0 to 3 percent slopes

Component: Scituate (85%)

The Scituate component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. The parent material consists of flow till derived from granite and gneiss. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 5s. This soil does not meet hydric criteria.

Map unit: STB - Scituate stony fine sandy loam, 3 to 8 percent slopes

Component: Scituate (85%)

The Scituate component makes up 85 percent of the map unit. Slopes are 3 to 8 percent. The parent material consists of flow till derived from granite and gneiss. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Map unit: STC - Scituate stony fine sandy loam, 8 to 15 percent slopes

Component: Scituate (85%)

The Scituate component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. The parent material consists of flow till derived from granite and gneiss. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Map unit: Su - Suncook loamy fine sand

Component: Suncook (90%)

The Suncook component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. The parent material consists of alluvium derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 54 inches during January, February, March, April. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria.
Map unit: UdA - Udipsamments, nearly level

Component: Udipsamments (80%)

The Udipsamments component makes up 80 percent of the map unit. Slopes are 0 to 15 percent. The parent material consists of outwash. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 0 percent. This soil does not meet hydric criteria.

Map unit: Ur - Urban land

Component: Urban land (90%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Map unit: W - Water (less than 40 acres)

Component: Water < 40 (100%)

Generated brief soil descriptions are created for major soil components. The Water < 40 is a miscellaneous area.

Map unit: WdA - Windsor loamy sand, 0 to 3 percent slopes

Component: Windsor, loamy sand (85%)

The Windsor, loamy sand component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. This component is on outwash plains on valleys. The parent material consists of loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 95 percent. Below this thin organic horizon the organic matter content is about 4 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Map unit: WdB - Windsor loamy sand, 3 to 8 percent slopes

Component: Windsor, loamy sand (85%)

The Windsor, loamy sand component makes up 85 percent of the map unit. Slopes are 3 to 8 percent. This component is on outwash terraces on valleys. The parent material consists of loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 95 percent. Below this thin organic horizon the organic matter content is about 4 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Map unit: WdC - Windsor loamy sand, 8 to 15 percent slopes

Component: Windsor (85%)

The Windsor component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. This component is on valleys, outwash terraces. The parent material consists of loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 95 percent. Below this thin organic...
Map Unit Description
Hillsborough County, New Hampshire, Eastern Part

Map unit: WdC - Windsor loamy sand, 8 to 15 percent slopes

Component: Windsor (85%)

The Windsor component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. This component is on outwash terraces on valleys. The parent material consists of loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss. Depth to a root restrictive layer is greater than 120 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map unit: WdD - Windsor loamy sand, 15 to 35 percent slopes

Component: Windsor (90%)

The Windsor component makes up 90 percent of the map unit. Slopes are 15 to 35 percent. This component is on outwash terraces on valleys. The parent material consists of loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map unit: WnC - Windsor-Urban land complex, 3 to 15 percent slopes

Component: Windsor (50%)

The Windsor component makes up 50 percent of the map unit. Slopes are 3 to 15 percent. This component is on outwash terraces on valleys. The parent material consists of loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Component: Urban land (35%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Map unit: WoA - Woodbridge fine sandy loam, 0 to 3 percent slopes

Component: Woodbridge (85%)

The Woodbridge component makes up 85 percent of the map unit. Slopes are 0 to 3 percent. This component is on hills on uplands. The parent material consists of coarse-loamy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 18 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Map unit: WoB - Woodbridge fine sandy loam, 3 to 8 percent slopes

Component: Woodbridge (82%)

The Woodbridge, fine sandy loam component makes up 82 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills on uplands. The parent material consists of coarse-loamy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 18 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 7 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.
Map Unit Description

Hillsborough County, New Hampshire, Eastern Part

Map unit:  WvB - Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony

Component:  Woodbridge, very stony (82%)

The Woodbridge, very stony component makes up 82 percent of the map unit. Slopes are 0 to 8 percent. This component is on hills on uplands. The parent material consists of coarse-loamy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 43 inches (depth from the mineral surface is 20 to 39 inches). The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 20 inches (depth from the mineral surface is 18 inches) during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 95 percent. Below this thin organic horizon the organic matter content is about 7 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Map unit:  WvC - Woodbridge fine sandy loam, 8 to 15 percent slopes, very stony

Component:  Woodbridge, very stony (85%)

The Woodbridge, very stony component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. This component is on hills on uplands. The parent material consists of coarse-loamy lodgment till derived from gneiss, granite, and/or schist. Depth to a root restrictive layer, densic material, is 20 to 43 inches (depth from the mineral surface is 20 to 39 inches). The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 20 inches (depth from the mineral surface is 18 inches) during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 95 percent. Below this thin organic horizon the organic matter content is about 10 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.
Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.
Appendix D – Draft Lease
**TOWN OF HOLLIS**

*Stefanowicz Properties*

**FARM LEASE AGREEMENT**

**THIS AGREEMENT** made and entered into this ___ day of ___ 20__ (LESSEE’s name) with a principal place of business at (LESSEE’s address), (hereinafter referred to as the LESSEE) and the Town of Hollis, by its Governing Body, the Board of Selectmen, with a principal place of business at 7 Monument Square, Town of Hollis, New Hampshire, 03049 (hereinafter referred to as LESSOR). The LESSEE and LESSOR acknowledge that the LESSOR owns property in said Hollis, which property the LESSOR is desirous of leasing to the LESSEE on the terms and conditions set forth herein and the LESSOR has been authorized to enter into this lease by virtue of the passage of Article 4, at the Town of Hollis annual meeting in March of 2016

**SECTION 1 - PROPERTY DESCRIPTION**

The transaction contemplated under this agreement relates to the following described parcels of land as depicted on a map, hereto attached as “Appendix A,” created in ___ by ___. On this map the Property referred to is identified as follows:

<table>
<thead>
<tr>
<th>Appendix A - Stefanowicz Properties Designations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field #</td>
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| total |

**SECTION 2 – GENERAL TERMS AND RIGHTS OF LEASE**

The LESSOR leases to the LESSEE, to occupy and use for agricultural and related purposes, as defined in Section 4 (OPERATION, MAINTENANCE, AND PERMITTED USES) below, the Property listed above, expressly including any and all buildings and improvements (except as noted at Section 2.14, Existing Structures), and only those
specific rights expressly provided herein or as otherwise subsequently authorized in writing by the LESSOR. In addition to rights and obligations specified elsewhere in this agreement, this lease shall be subject to the general conditions and is given together with the general rights set forth below:

1. **Purpose** - the primary purpose of this lease is to protect the agricultural soils, agricultural viability, and agricultural productivity of the Property and to maintain woodlands and open spaces through the use of visually unobtrusive and environmentally sound development, while preserving and maintaining Hollis’ rural character, particularly as seen from Public Roads. No activity which shall significantly impair the actual or potential use of the Property for agricultural production or violate the letter or intent of the Hollis Rural Character Preservation Ordinance, shall be permitted.

2. **Amendments and alterations** – amendments and alterations to this lease shall be in writing and shall be signed by both the LESSOR and LESSEE.

3. **No partnership created** - this lease will not be deemed to give rise to a partnership relationship, and neither party will have authority to obligate the other without written consent, except as specifically provided in this lease.

4. **Transfer of property** - the LESSOR may transfer title to the Property subject to the provisions of this lease and to the restrictions applicable to the Property as more particularly set forth elsewhere herein.

5. **Right of entry** - the LESSOR reserves the right, by and through its agents, employees, or assigns, to enter the Property at any reasonable time for purposes of (a) consulting with the LESSEE; (b) making inspections; (c) developing and executing conservation and forest management plans relating to the Property or (d) (after notice of termination of the lease is given) perform tree pruning, tilling, seeding, fertilizing and other customary seasonal work, none of which is to interfere with the LESSEE in carrying out regular farm operations.

6. **Assignment/sub-leasing** – the LESSEE shall not assign or otherwise enter into any assignment or transfer of the rights or responsibilities without the written consent of the LESSOR.

7. **Heirs and successors** - the terms of this lease will be binding upon the heirs, executors, administrators and successors of both LESSOR and LESSEE in like manner as upon the original parties, except as provided by mutual written agreement.

8. **Rent and performance** - if the LESSEE fails to pay the rent due or fails to keep the agreements of this lease, all costs and attorney fees of the LESSOR in enforcing collection or performance shall be added to and become a part of the obligations payable by the LESSEE hereunder. (See Section 9 - NOTICE)

Failure to perform lease obligations are broken into the categories of minor and major. Minor failures generally involve maintenance and scheduling or repairs. To address these failures the LESSOR will notify the LESSEE of non-compliance with two certified letters. In the event that the LESSEE fails to perform these
essential repairs or maintenance, then after suitable notifications (e.g., 2 registered letters,) the Town reserves the right to perform or subcontract such repairs or maintenance which costs shall be payable by the LESSEE with the annual rent.

Major failures include, but are not limited to, not making annual lease payments, not executing a development/conservation plan (See Section 4 – OPERATION, MAINTENANCE, AND PERMITTED USES, paragraph 4). Consequences for major failures will be termination of the lease.

9. **Willful neglect** - willful neglect, failure, or refusal by either party to carry out any substantial provision of this lease will give the other party the benefits of any proceedings provided by law. (See Section 8 - LIABILITY, INSURANCE, AND BONDS)

10. **Debts and accidents** - each party agrees that the other party shall in no way be responsible for the debts of, or liabilities for accidents or damages caused by, the other party.

11. **Crop ownership** - all crops or products from the Property which are under the care of the LESSEE are owned by the LESSEE, provided, however, that if this lease is terminated or otherwise expires, any trees, plants or other farm products that remain cultivated following such termination shall be the property of the LESSOR.

12. **Vehicles** - motorized vehicles, except those needed for farming purposes by the LESSEE or required by the LESSOR to perform maintenance work and conduct inspections, are prohibited. An access corridor that follows existing agricultural paths has been established to allow town access to the western part of the property, (see Appendix A). Construction of any new paths or trails shall not take place, to the extent possible, on any important agricultural soils. Notwithstanding any prohibition to the contrary, motorized vehicles will be allowed to be used on the Property for maintenance of agricultural roads as required to conduct farming operations. No motorized recreational vehicles are permitted.

13. **Public access** - public access is allowed if so approved by LESSEE and only on trails to be marked by the LESSEE, in areas that do not interfere with ongoing farming operations as required under the Food Modernization and Safety Act (SECTION 4 – OPERATION, MAINTENANCE, AND PERMITTED USES). LESSOR reserves the right after prior review with the LESSEE to construct, manage, use, and maintain unpaved trails and roads to the western side of the Stefanowicz Properties for access to public foot paths and occasional logging operations. Such trails and roads to the extent possible will be located off important agricultural soils.

14. **Existing structures** – an existing pole barn on the Property is owned by the LESSOR and may be used and maintained by the LESSEE.

   [the LESSEE may choose at his discretion to exclude this from the lease; this should be noted in the potential LESSEE’s bid]

15. **Chemical use and pesticide storage** – both the LESSOR and LESSEE
acknowledge that they are aware that the LESSEE intends to apply, in the management of the Property, pesticides and other chemicals commonly used in the management and maintenance of such a farming operation. The production, storage and spreading of pesticides, feed, compost, manure, or other fertilizer under sound agricultural practices; the storage of pesticides; the storage of feed; or leaving of slash after harvested timber, are permitted in accordance with any and all label requirements, an approved Conservation Plan and with the then-current scientifically based practices recommended by the UNH Cooperative Extension, U.S. Natural Resources Conservation Service, New Hampshire Department of Agriculture, Markets and Food and those recommendations (in addition to any and all label requirements) of the U.S. Environmental Protection Agency, or other government or private, nonprofit natural resource conservation and management agencies then active. The LESSEE shall maintain records of pesticide and chemical usage, including the names and state certification of the officers, employees, or agents of the LESSEE who apply such pesticides and chemicals.

16. **Dumping** - there shall be no dumping, storage, injection, burning or burial of man-made materials, building demolition or construction debris, trash, tires, vehicle bodies or parts or similar materials, solid or hazardous waste or any other material known to be hazardous to human health or the environment. No man-made materials of any kind will be disposed of on the Property. Additionally, no natural materials of any kind will be disposed of on the Property unless they originated on the site.

17. **Hunting and fishing** – LESSEE reserves the right to post against hunting and fishing as required under the Food Modernization and Safety Act (SECTION 4 – OPERATION, MAINTENANCE, AND PERMITTED USES) as LESSEE may from time to time desire. The LESSEE or LESSEE’s agent may hunt or trap wildlife that is damaging agricultural crops as allowed under applicable state law.

18. **Term and additional agreements regarding Property rights** - The Term of this lease shall be __ years from __, __ and the within lease shall expire on __, __, unless sooner terminated for cause. The LESSEE’S continued right to utilize said Property under this lease is completely contingent upon the timely and complete compliance with all conditions of rural character preservation, farm operation, land use conservation and maintenance, more particularly set forth herein.

19. **Renewal Option** – At a mutually agreeable time, but not later than two years prior to the expiration of the lease, the LESSOR and the LESSEE’s designated representative will meet to evaluate the land stewardship of the property by the LESSEE as documented in the Annual Reviews (see SECTION 4, subsection 3 – Annual Review). Based upon the review, the LESSOR will have the option to offer the LESSEE a renewal of the lease at mutually agreeable terms.
SECTION 3 - RENT, PROPERTY IMPROVEMENTS, MAINTENANCE, AND OTHER CONDITIONS

1. **Rent:** The LESSEE shall pay annually a sum consisting of $____ (which will be adjusted for inflation in the annual amount of _____%). This sum shall be paid annually no later than the last day of month/day of the current rental year. Failure of the LESSEE to pay the annual rent when due shall be cause to terminate said lease or agreement by the LESSOR.

2. **Additional Rent:** Pursuant to RSA 72:23 (I)(b), and in addition to the rent provided for in paragraph 1 above, the rent for the premises shall include additional rent in the form of any taxes that would be due if the leased premises were owned privately and assessed as such.

3. **Property Improvements:** The LESSEE will comply with the terms as set out in Appendix B (Property Improvement and Development Plan).

4. **Annual Review** - the LESSEE shall make an accounting of his land stewardship for the preceding lease year no later than the anniversary date of the lease. LESSEE shall at that time present records of his property improvements and land maintenance relative to the Property Development Plan (Appendix B) from the preceding year. This meeting shall take place in person, between the LESSEE and the LESSOR’s designated representative. The LESSEE shall be notified as in Section 2, subsection 8.

5. **Breach** – the LESSEE’s repeated failure after timely notification, in any given three-year period, to satisfy each and every one of his obligations as specified in subsections 1-3 above, shall constitute breach of this contract. LESSEE shall not be entitled to any recovery of any expenses made. (See Section 9 - LIABILITY, INSURANCE, AND BONDS)

6. **Continuous occupancy** - the LESSEE agrees that only the LESSEE or LESSEE’S employees, officers, or servants will possess and occupy the Property continuously during the term of the lease. The LESSEE’S duly authorized sub-LESSEE and his employees, officers, or servants may also possess and occupy the Property continuously during the term of the lease; provided, nevertheless, that it is acknowledged and agreed that this lease is NOT intended to and shall NOT be interpreted to allow the use of the Property by anyone for residential occupancy. No permanent or temporary structure or improvement which constitutes a dwelling shall be constructed, placed or introduced onto the Property.

7. **Surrender of possession** - the LESSEE agrees to surrender possession and occupancy of the Property peaceably at the termination of the lease.
SECTION 4 – OPERATION, MAINTENANCE, AND PERMITTED USES

The within lease is being given exclusively for preserving and maintaining Hollis' scenic vistas and rural character by conducting agricultural use and implies no right to use the Property for any other purpose. If such agricultural use ceases on the Property, the LESSOR may revoke this lease. Further, in order to operate this farm efficiently and to maintain it in a high state of productivity, the parties agree as follows:

1. **Permitted Uses** – LESSOR permits, authorizes, and consents to LESSEE undertaking all activities incident to farming on the premises and agree that the farming practices shall be conducted within the meaning of RSA 21:34-a and in conformity with the conservation documents referenced in paragraph 4 below and the Property Development Plan referenced in Appendix B. Activities defined in RSA 21:34-a sections II(a)-4,5,7,9, II(b)-5, III and V will not be permitted. It is expressly understood that activities permitted under RSA 21:34-a but not permitted under the terms of the referenced conservation and bid documents shall not be permitted on the Property. The LESSEE shall maintain an adequate record of farm operations.

2. **Maintenance** – LESSEE agrees to provide the labor and equipment necessary to maintain the farm and its improvements during the lease period in as good condition as it was at the beginning, including, for example, maintaining existing crops or replacing with new agricultural products; removing diseased or dying crops and replacing with new agricultural products; preventing various types of diseases and infestation of noxious weeds; controlling soil erosion by planting cover crop, repairing and maintaining ditches, tile drains, waterways, and roads agricultural roads; and maintaining soil fertility by applying fertilizer, lime or other commonly used nutrients; and performing other prudent activities.

3. **Best Management Practices** – LESSEE’S agricultural management activities shall be in accordance with the then-current scientifically based practices recommended by the University of New Hampshire Cooperative Extension, U.S.D.A. Natural Resources Conservation Service, or other government or private, nonprofit natural resource conservation and management agencies then active.

4. **Conservation Practices and Management Plan** – The parties agree that the Property will be operated according to a Conservation Plan to be filed with the Hillsborough County office of the Natural Resources Conservation Service (NRCS) within 12 months of lease signing. The conservation management plan for the sites and soils of the Property, defining as best as is reasonably possible the agricultural activities. This conservation plan will be updated at least every five years if not sooner. It will be developed in consultation with the LESSOR, the State of New Hampshire Department of Agriculture, Markets and Food, and the U.S. Natural Resources Conservation Service. Management activities shall not materially impair the rural character of the Property.

In the event of noncompliance with the conservation plan, NRCS shall work with
the LESSEE to explore methods of compliance and give the LESSEE a reasonable amount of time, not to exceed twelve months, to take corrective action. If the LESSEE does not comply with the conservation plan, NRCS will inform LESSOR of the LESSEE noncompliance. The LESSOR shall take all reasonable steps (including efforts at securing voluntary compliance and, if necessary, appropriate legal action) to secure compliance with the conservation plan following written notification from NRCS that (a) there is a substantial, ongoing event or circumstance of non-compliance with the conservation plan.

5. **Food Safety Modernization Act.** As required by the Food Safety Modernization Act Public Law III – 353, 124 Stat. 3885, Jan. 4, 2011; 21 U.S.C. 301 et seq., the LESSEE, their heirs, successors, or assigns, shall conduct all agricultural operations on the Property in a manner consistent with this regulation. This includes, but is not limited to, posting signage along the perimeter of agricultural fields during the growing season indicating public access is not permitted in accordance with the Food Safety and Modernization Act.

6. **Bid proposal** – the farm shall be operated in compliance with the LESSEE’S development plan, attached as “Appendix B”, or as amended by LESSOR and LESSEE’s mutual agreement during the Annual Review (Section 3 - RENTAL RATES, PROPERTY IMPROVEMENTS, LAND MAINTENANCE, AND OTHER CONDITIONS).

7. **Termination** - Failure of the LESSEE to adhere to the above operation, maintenance, and permitted use requirements shall be grounds for termination of the lease.

**SECTION 5 - PROPERTY OPERATING AND CAPITAL EXPENSES**

1. **Operating Expenses** – all operating expenses are to be borne by the LESSEE.

2. **Non-capital improvements** – the costs of non-capital improvements shall be borne by the LESSEE.

3. **Capital improvements** – the LESSOR shall be under no obligation to provide for any capital improvement, nor to perform any construction, maintenance, repair, or other act on the Property except as required to comply with the plan submitted with the LESSEE’S bid proposal, attached to this lease as “Appendix B”, or as amended by LESSOR and LESSEE’s mutual agreement during the Annual Review (Section 3 - RENT, PROPERTY IMPROVEMENTS, MAINTENANCE, AND OTHER CONDITIONS). Any such improvements required by such plan or voluntarily constructed by the LESSEE (with the consent of the LESSOR) shall become the property of the LESSOR at the time of the termination or expiration of this lease.
SECTION 6 – EFFECT OF PARTIAL INVALIDITY

The invalidity of any provision of this lease agreement will not and shall not be deemed to affect the validity of any other provision. In the event that any provision of this lease agreement is held to be invalid, the parties agree that the remaining provisions shall be deemed to be in full force and effect as if they had been executed by both parties subsequent to the expungement of the invalid provision.

SECTION 7 – ENTIRE AGREEMENT

This lease agreement shall constitute the entire agreement between the parties. Any prior understanding or representation of any kind preceding the date of this lease agreement shall not be binding on either party.

SECTION 8 – LIABILITY, INSURANCE, AND BONDS

Liability Insurance. The LESSEE will be responsible for maintaining adequate insurance during the term of the Agreement, as annually required by the LESSOR’S liability coverage provider, which will include, but may not be limited to, General Liability coverage with a minimum limit of $1,000,000, per occurrence, subject to an annual aggregate of $2,000,000, Auto Liability coverage with a Combined Single Limit of not less than $1,000,000 with an additional $5,000 Medical Payment Coverage. Such coverage must list the LESSOR as an additional insured for the term of the lease. The LESSEE hereby agrees at all times to indemnify and hold harmless the Town; its board, officers and employees, to the fullest extent permitted by law, from any and all claims, damages, losses and expenses, including, but not limited to, reasonable attorneys’ fees and legal costs, arising out of the LESSEE’S actions. The LESSEE will also maintain and show proof of both Worker’s Compensation and Professional liability coverage for the life of the Agreement. The LESSEE will provide the Town with a Certificate of Insurance prior to the inception of activities on the site by the LESSEE and annually thereafter for the life of this agreement. The certificate shall name the Town as an Additional Insured for both General Liability and Auto.

SECTION 9 – NOTICE

Any notices that are required herein, or which either LESSOR or LESSEE shall hold or may desire to serve upon the other, shall be in writing and shall be deemed served when delivered personally, or when deposited in the United States mail, certified mail, postage-prepaid, return receipt requested, addressed to the respective party at the addresses listed above.
SECTION 10 – COMPLIANCES WITH LAWS

LESSEE agrees to comply with all Federal, State and local laws, ordinances, rules, and regulations that may pertain or apply to the Property and its use.

In witness, each party to this lease agreement has caused it to be executed at on the date and year first written above.

LESSOR

Town of Hollis, by its Select Board,

_____________________________________
Mark Le Doux, Chairman

_____________________________________
David Petry, Vice Chairman

_____________________________________
Frank Caldwell, Member

_____________________________________
Peter Band, Member

_____________________________________
Susan Benz, Member

LESSEE

_____________________________________

Appendix A – Map with Property Description

Appendix B – Lessee’s Bid Proposal with Property Development Plan