TERESA L. DAVIS
LICENSED SITE EVALUATOR #203
REGISTERED FORESTER #1094
72 FLOODS POND ROAD
OTIS, ME 04605
207-537-3432

January 23, 2020

Jessica Damon, Project Manager
Department of Environmental Protection
106 Hogan Road
Bangor, Maine 04401

Re: Silver Maple Wind Project Application

Dear Jessica,

Enclosed is a copy of a letter I submitted to the Clifton Planning Board today. I want to raise the same concerns to your Department, please.

Would your Department please consider asking the Maine State Soil Scientist, David Rocque, to review the Silver Maple Wind Project application? This seems prudent to me given that the project is in the watershed of Springy Pond and a large aquifer around it, and very close to the watershed of Floods Pond, which is the municipal water supply for Bangor and Hampden and also contains a rare fish, Arctic charr.

Thank you.

Sincerely,

Teresa Davis

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January 23, 2020

Clifton Planning Board
Clifton Town Office
135 Airline Road
Clifton, Maine 04428

Re: Silver Maple Wind Project Application

Dear Chairman Jellison and Members of the Planning Board:

I have some concerns about the Silver Maple Wind Project application that I want to bring to your attention as you continue to review the document.

Visual Impact Assessment.

1. The VIA has to include certain features – Scenic Resources of State or National Significance (SRSNS), historic buildings, scenic features listed in the town's Comprehensive Plan (CP) for protection, etc. The application totally misses two SRSNS – Mountainy Pond and Second Pond – and one feature listed in Clifton's CP – Woodchuck Hill. The application includes two SRSNS that should not be included – Green Lake and Holbrook Pond. (I believe they added Green Lake and Holbrook Pond from the Maine Wildlands Lake Assessment and neither is included there. There are features by those names but they are not located in the project area. None of Green Lake in Ellsworth and Dedham or Holbrook Pond in Holden lies within unorganized territory so neither would be included in that study, nor are they included in the Maine's Finest Lakes Study of lakes and ponds in organized towns).
2. A simulated photograph included in their VIA from the shore of Hopkins Pond shows that wind towers of the Pisgah Mountain project are already visible from that pond, and they are not.
3. In Chapter 382, Wind Energy Act Standards, Section H requires, in part, that the applicant's VIA identify any areas of combined, sequential or successive observation, as defined in 35-A M.R.S. §3451, for each SRSNS within 8 miles of the proposed wind energy development. This includes existing wind energy developments (Pisgah Mountain, for one. Bull Hill and Hancock Wind are just outside the overlap area), and any wind energy developments that have been permitted but not yet constructed (Weaver Wind). The Weaver Wind and Silver Maple projects 8 mile radii overlap area includes the northern portions of Graham Lake and the portion of the West Branch of the Union

River downstream from the Route 9 bridge to Graham Lake. The applicant's VIA does not address this cumulative scenic impact at all. The VIA addresses the view from two bridges – on Route 9 and on Route 181 – and that is a disservice to the many people who recreate and fish on the West Branch of the Union River. It is not the view from the bridges they hold most dear.

Stormwater Management.

1. The applicant claims in the Stormwater Management Section of the application that the Silver Maple Wind Project is not located within a lake watershed and therefore the Phosphorus Standards Submission does not apply. The project *is* within the watershed of a lake. According to the Lakes Environmental Association Watershed Map, which I have enclosed, Pisgah Mountain lies within the watershed of Floods Pond and Springy Pond. Silver Maple Tower #1 may lie in the watershed of Rebel Hill but Towers #2, #3, #4, and #5 are clearly in the Springy Pond watershed and, therefore, the Phosphorus Standards Submission does apply. There is a large aquifer mapped from Springy Pond to Graham Lake and the project is in the watershed of this important aquifer as well. (Map included.)

   Section 7, Sub-Section D. General Phosphorus Standards Submissions, part (4) requires that a detailed log of at least one excavation or boring (done by a Licensed Soil Scientist) in the area of each stormwater control measure be submitted with the application.
2. Towers #4 and #5 are approximately 300 feet from the Floods Pond watershed. Ledge outcrops occur at Towers #1 and #5. The application indicates blasting will be necessary during construction. Floods Pond is the municipal water supply for Bangor and Hampden and contains a population of Artic charr – a coldwater fish that is a member of the trout and salmon family. Charr are native only to Maine and Alaska, and Floods Pond charr have been used to stock other waterbodies. Given the proximity of two towers to the Floods Pond watershed and the presence of ledge outcrops and blasting, I propose that that the Clifton Planning Board and DEP consider requiring additional stormwater treatment on the west side of the project - a steep sideslope of Pisgah Mountain - and investigate other measures to help protect the watershed of Floods Pond, Springy Pond, and the Springy Pond aquifer.

SOILS.

1. The applicant submitted soils information based on data from the Natural Resources Conservation Service (NRCS), including a NRCS soils map. Their information is generally considered a medium intensity soil survey. The NRCS soil surveys all state that their maps provide sufficient information for the development of resource plans, but that onsite investigation is needed to plan for intensive uses in small areas. I've attached pages 4-6 of the Soil Survey of Hancock County Area, Maine with the passage that corroborates my statement highlighted (NRCS soils surveys for other areas all include this same statement). The Maine Association of Professional Soil Scientists (MAPSS) echo the NRCS caution about use of the NRCS soils map. They have established

for the intensity of a soil survey needed for different types of development. I've attached a section of their guidelines with highlighted areas which, again, corroborates my belief that a higher intensity soil survey is needed than what was provided in the application, where not one test pit log was included. Soils at this project site seem especially important given the close proximity (about 300 feet) of two towers to the Floods Pond Watershed and I believe, as apparently both NRCS and MAPPS do, that a more intense soil survey is warranted for projects like this.

I propose that the Clifton Planning Board and/or the Department of Environmental Protection ask the State of Maine Soil Scientist, Mr. David Rocque, to review this application.

There are many sections of the application I have not been able to scrutinize fully yet but given the mistakes and/or insufficiencies of the Visual Impact Assessment, Soils, and Stormwater Sections I would expect to find other areas that are inadequate as well, and I hope the Planning Board will take a close second look at all the data to make this project as environmentally safe as it can be.

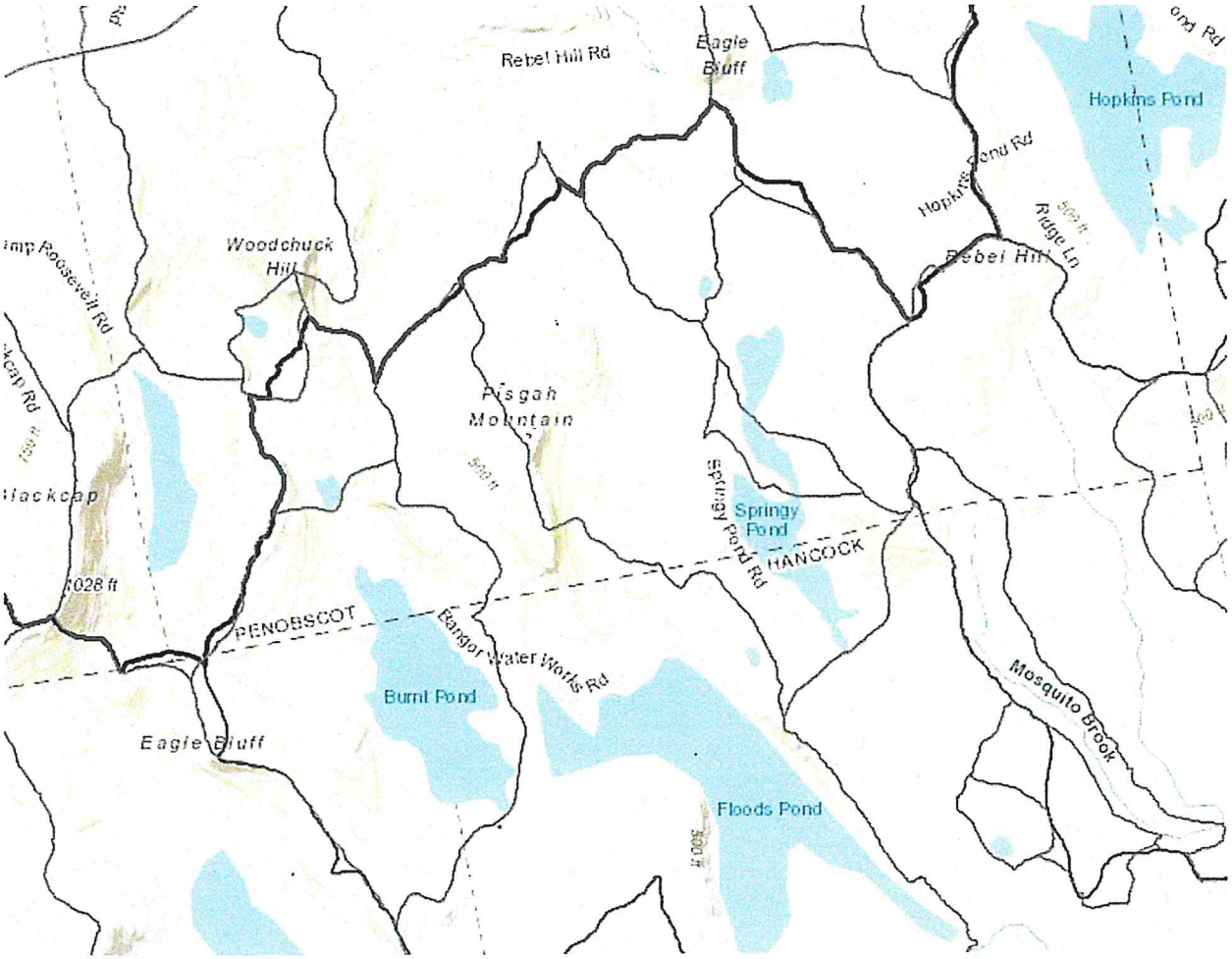
I appreciate the time you have all spent on this application process and the opportunity to voice my concerns. Thank you.

Sincerely,

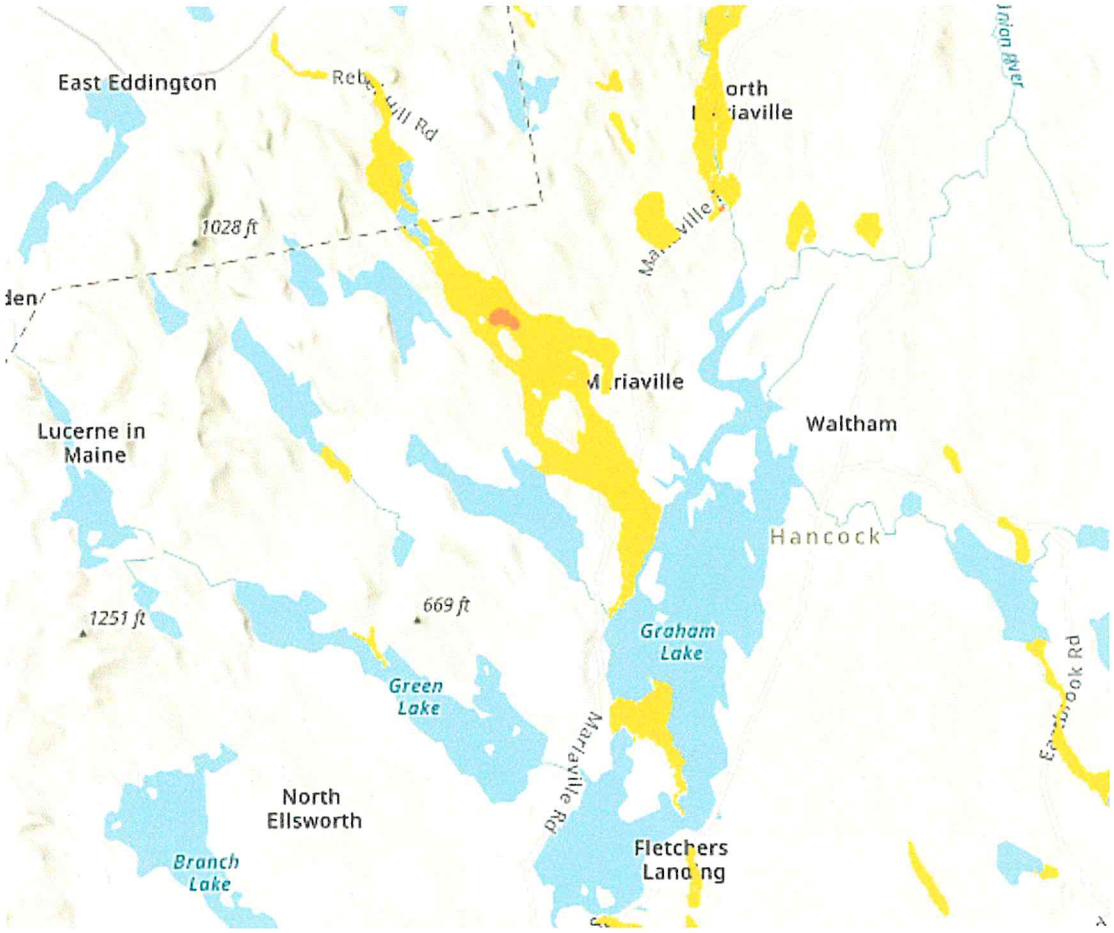
Teresa Davis

Teresa Davis

Cc: Jessica Damon, Project Manager, Department of Environmental Protection.



Lakes Environmental Association Watershed Map



Maine Geological Survey
Maine Aquifer #5678 – Springy Pond to Graham lake

Pages 4-6 of the Soil Survey of Hancock County Area, Maine.

landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, acidity, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. The system of taxonomic classification used in the United States is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpreted the data from these analyses and tests as well as the field-observed characteristics and the soil properties in terms of expected behavior of the soils under different uses. Interpretations for all of the soils were field tested through observation of the soils in different uses under different levels of management. Some interpretations are modified to fit local conditions, and new interpretations sometimes are developed to meet local needs. Data were assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management were assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can state with a fairly high degree of probability that a given soil will have a high water table within certain depths in most years, but they cannot assure that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

This survey area was mapped at two levels of detail. At the more detailed level, map units are narrowly defined and map unit boundaries were plotted and verified at closely spaced intervals. At the less detailed level, map units are broadly defined and boundaries were plotted and verified at wider intervals. In the legend for the detailed soil maps, narrowly defined units are indicated by symbols in which the first letter is uppercase and the second is lowercase. For broadly defined units, the first and second leters are uppercase.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. The differences are the result of better knowledge of the soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in different survey areas.

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by several kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties (fig. 2). 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 soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. These latter soils are called inclusions or included soils.

Most inclusions have properties and behavioral patterns similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are contrasting (dissimilar) inclusions. They generally occupy small areas and cannot be shown separately on the soil maps because of the scale used in mapping. The

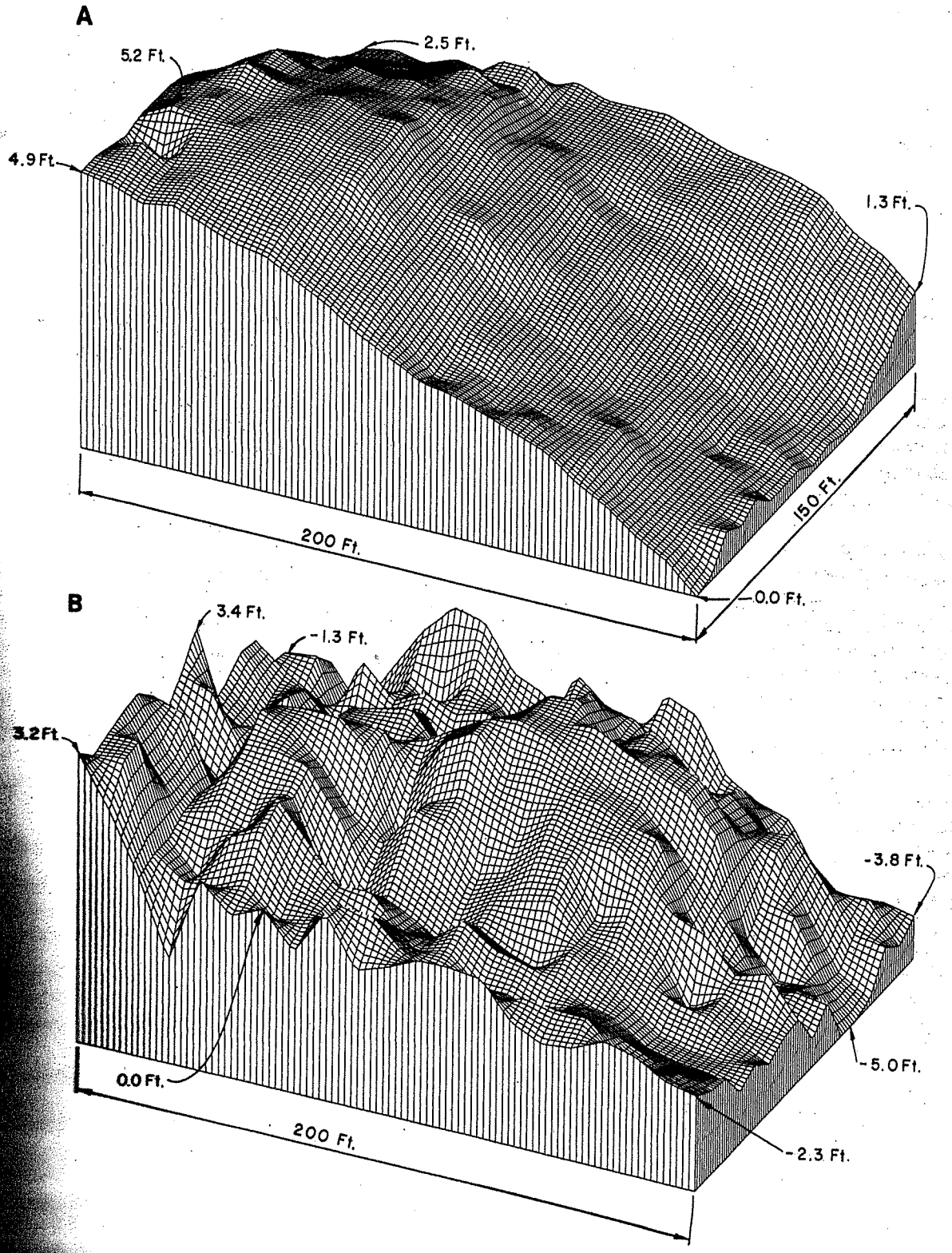


Figure 2.—Relationship of the surface (A) to the underlying bedrock (B) in the Tunbridge-Lyman complex, 3 to 8 percent slopes.

inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed and consequently are not mentioned in the descriptions, especially where the soil pattern was so complex that it was impractical to make enough observations to identify all of the kinds of soil on the landscape.

The presence of inclusions in a map unit in no way diminishes the usefulness or accuracy of the soil data. The objective of soil mapping is not to delineate pure taxonomic classes of soils, but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but onsite investigation is needed to plan for intensive uses in small areas.

Survey Procedures

Prior to actual field mapping, general field investigations were made to determine the patterns of landforms. Spot checks were made of various soils in the field. Where available, surficial geology maps and bedrock geology maps were used to form a correlation between landforms and individual soil sites.

Field mapping was done primarily by making traverses on foot. Traverses were made mainly at intervals of 1/2 mile or less, depending on the complexity of topography and soil patterns. Areas mapped as broadly defined units were traversed at intervals of 1/2 mile or more. Areas of high variability are in coastal areas and along streams and river valleys.

Soil examinations along the traverses were made mainly 300 to 800 yards apart, depending on the landscape and the soil patterns. Areas of broadly defined map units were examined at greater intervals. The soil material was examined with the aid of a shovel, screw auger, or bucket auger to a depth of about 5 feet, or to bedrock or the dense compact substratum if it was at a depth of less than 5 feet. The pedons described as typical were observed and studied in pits. Some of these pedons were sampled for laboratory analysis.

All soils information was recorded on aerial photographs. These photographs were at a scale of 1:20,000 and 1:15,840. Surface drainage was also recorded on aerial photographs. Cultural features are from U.S. Geological Survey 7 1/2 and 15 minute topographic maps.

Highlights : Pgs. 2, 3, & 5

MAINE ASSOCIATION OF PROFESSIONAL SOIL SCIENTISTS

MAINE STATE SOIL

CHESUNCOOK

GUIDELINES FOR MAINE CERTIFIED SOIL SCIENTISTS FOR SOIL IDENTIFICATION AND MAPPING

FEBRUARY 2004

Revised March 2009

These standards were adopted by the Maine Association of Professional Soil Scientists April 4, 1989, and revised March 1992, March 1993, February 1995, September 2000, February

MAINE ASSOCIATION OF PROFESSIONAL SOIL SCIENTISTS
Standards for Soil Surveys

INTRODUCTION

The Maine Association of Professional Soil Scientists (MAPSS) was originally formed as the Maine Association of Consulting Soil Scientists in 1975. The founding members were consulting soil scientists who recognized the need for an association that could provide for the exchange of technical, political, and regulatory information that influence and guide their profession. The association was renamed the Maine Association of Professional Soil Scientists approximately 2 years later to encourage the participation of other professionals in soil science or related fields, such as the USDA Natural Resources Conservation Service (formerly the Soil Conservation Service) and the Maine Department of Environmental Protection (DEP). Today, MAPSS has more than 60 members with various professional backgrounds, including NRCS, DEP, soil consultants, wetlands scientists, site evaluators, students, and others with interest in the natural sciences. The organization's original goals and objectives for ensuring the success and promoting the advancement of the soil science profession remain unchanged. MAPSS will strive to continue providing guidance, education, and training to its members and the public on soil science issues of interest and concern.

Soil surveys are one of the primary services that professional soil scientists provide for their clients in Maine. Soil Surveys continue to grow as a means to define and analyze soil resources for development. Soil surveys are recognized by planners as an efficient way to delineate depth to bedrock or wetness that need to be overcome for a proposed development to be economically feasible and environmentally safe. High intensity soil surveys in Maine utilize the soil series and soil phase concept, and are based on many of the technical standards of the National Cooperative Soil Survey.

MAINE ASSOCIATION OF PROFESSIONAL SOIL SCIENTISTS
STANDARDS FOR SOIL SURVEY

This publication brings the various technical standards for soil surveys adopted by the Maine Association of Professional Soil Scientists together in one document. This is not a static document. As needed, other technical material will be added and updates will be issued. The guidelines should be interpreted and applied only in conjunction with the USDA, Natural Resources Conservation Service soil survey manual, and the National Soils Survey Handbook. Although this publication is being prepared for MAPSS members, it is anticipated that town, regional and state planners will also be interested in the publication. Planners are encouraged to contact a MAPSS member if they have any questions about the technical aspects of this publication and to be certain that the most current technical criteria is being referenced.

Traditionally, soils information in Maine has been available in the form of county soil surveys, produced by the USDA, Natural Resources Conservation Service in cooperation with other government agencies. These surveys are available for approximately 80 percent of the state. These medium intensity surveys utilize aerial photography as base maps, commonly at scales of 1:15840, 1:24000, or 1:20000. While the information provided in these surveys is valuable for broad land use planning, resource inventories, forestry and agricultural planning, they do not provide enough detail for site specific plan review, etc.

As the demand for more detailed soils information continues to grow, be it for stormwater management, erosion and sediment control plans, hydric soil delineation, or to determine development densities, it is apparent that high intensity soil surveys, at scales of 1 inch equals 50, 100 or 200 feet are necessary to meet the needs of resource planners and engineers to address these site-specific issues.

The Maine Association of Professional Soil Scientists, on April 4, 1989, formally adopted minimum standards for two classes of high intensity soil surveys in Maine, as well as a class for medium-high intensity, and a class for medium intensity soil surveys. The remainder of this section defines these minimum soil survey standards.

The standards are designed to match the kind of survey with the amount of soil information needed by planners and others to make reasonable land use decisions. Only local needs and concerns can determine the class of survey for a particular project. However, one can generalize that intensive uses that cause concern about hydric soil boundaries or the location of suitable areas for phosphorus control measures for example, would need a high intensity soil survey (Class A or Class B). Less intensive uses such as ski areas may only need a medium high intensity soil survey (Class C). A medium intensity soil survey (Class D) such as an existing Natural Resources Conservation Service Survey or one provided by a private soil consultant would be appropriate for some projects. For narrow, linear projects, a Class L Soil Survey may be appropriate.

STANDARDS FOR SOIL SURVEY

Classes of Soil Surveys

There are five classes of soil survey defined in these guidelines. They differ in the degree of detail and supporting information required. Minimum standards are listed for each soil survey class with Class A being the most detailed and Class D being the least detailed. Class L is a completely separate class of soil survey from Class A through Class D. It does not continue the progressive decrease in level of detail from Class A through Class D but was created to address the unique needs for long, linear projects such as wind farm access roads which may be many miles long but which do not have any proposed adjacent development. Stating that a soil survey was conducted in accordance with a particular class of these guidelines means that it meets all four of the listed requirements for that class. In some situations it may be appropriate to conduct a soil survey using two or more classes, provided it is clearly stated as such and where the classes were conducted. This might be done for a large property where only a portion is to be developed and the remainder is to be open space. An example would be a subdivision of shorefront lots with the back of the property remaining an undeveloped common area. The developed area may need a class A soil survey while the back part may only need a class C or D survey.

Class A (High Intensity)

1. Map units will not contain dissimilar limiting individual inclusions larger than one-eighth acre. Dissimilar limiting inclusions may total more than one-eighth acre per map unit delineation, in the aggregate, if not contiguous.

2. Scale is 1 inch equals 100 feet or larger (e.g. 1" = 50').

3. Ground control—base line and test pits for which detailed data is recorded are accurately located under the direction of a registered land surveyor or qualified professional engineer.

4. Base map with 2-foot contour lines with ground survey, or aerial survey with ground control.

Class B (High Intensity)

1. Map units will not contain dissimilar limiting individual inclusions larger than one acre. Dissimilar limiting inclusions may total more than one acre per map unit delineation, in the aggregate, if not continuous.

2. Scale of 1 inch equals 200 feet or larger (e.g. 1" = 100').

3. Ground control—test pits for which detailed data is recorded are located by means of compass by chaining, pacing, or taping from known survey points; or other methods of equal or greater accuracy.

4. Base map with 5-foot contour lines.

Class C (Medium High Intensity)

1. Map units will not contain dissimilar limiting individual inclusions larger than 5 acres. Dissimilar limiting inclusions may total more than 5 acres per map unit delineation, in the aggregate, if not contiguous.

2. Scale of 1 inch equals 500 feet or larger (e.g. 1" = 400').

3. Ground control—as determined by the mapper.

4. Base map—as determined by the mapper.

Class D (Medium Intensity)

1. Map units may contain dissimilar limiting individual inclusions larger than 5 acres provided that each dissimilar limiting inclusion is smaller than the

minimum map unit size utilized. Dissimilar inclusions within a map unit may total more than the minimum map unit size, in the aggregate, if not contiguous.

2. Scale of 1 inch equals 2,000 feet or larger (e.g. 1" = 1320').
3. Ground control—as determined by the mapper.
4. Base map—as determined by the mapper.

Class L (For Linear Projects)

Purpose – This soil survey standard is designed to provide the minimum soil information necessary to allow for the design and construction of long but narrow projects such as access roads, utility lines or trails with little or no adjacent development. In remote, difficult to access sites such as mountains or roadless areas, soil observations may be made entirely by use of a hand shovel, screw or Dutch auger. For areas which are more accessible, deeper soil observations should be made in order to properly classify the soils.

1. Class L soil survey map units shall be made on the basis of parent material, slope, soil texture, soil depth to dense till or bedrock (which ever is shallowest) and soil wetness (drainage class and/or oxyaquic conditions) at the Class A High Intensity Map Unit size. The preferred method of naming the soil map units is by assigning a soil series name or names for complexes. If soils are classified to the series level in remote areas not readily accessible to equipment and/or without road cuts, it shall be noted in the narrative that soils were classified by shallow observations only.

2. Scale is 1 inch equals 100 feet or larger (e.g. 1" = 50').

3. Ground Control – base line and test pits for which detailed data are recorded are located to sub-meter accuracy under the direction of a qualified professional.

4. Base map with two foot contour lines.

Completed Soil Survey