PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
LAND USE PLANNING COMMISSION
22 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0022

WALTER E. WHITCOMB
COMMISSIONER

NICHOLAS D. LIVESAY
EXECUTIVE DIRECTOR

PERMIT

AMENDMENT L TO
DEVELOPMENT PERMIT DP 3578

The Maine Land Use Planning Commission (hereinafter the "LUPC" or "Commission"), through its staff, after reviewing the application and supporting documents submitted by Rangeley Lakes Heritage Trust, Inc. (hereinafter the "Applicant" or "Permittee") for Amendment L to Development Permit DP 3578, finds the following facts:

1. Applicant: Rangeley Lakes Heritage Trust, Inc.
   Attn: Christopher Devine
   P.O. Box 249
   Oquossoc, ME 04964

2. Agent: Seven Islands Land Company
   Attn: Nathan Kay
   P.O. Box 1168
   Bangor ME 04402

3. Date of Completed Application: December 11, 2015

4. Location: Adamstown Township (T4 R2 WBKP), Oxford County, Maine
   Maine Revenue Service Map OX008, Plan 01, Part of Lot 1.4
   Oxford County Registry of Deeds (Eastern District) Book 4062, Page 248

5. Zoning: General Management Subdistrict (M-GN)
   Great Pond Protection Subdistrict (P-GP)
   Shoreland Protection Subdistrict (P-SL2)
   Wetland Protection Subdistricts (P-WL1), (P-WL2), and (P-WL3)

6. Lot Size: 110 Acres

7. Principal Building(s): Existing Office Building/Managers Apartment (95 ft. by 30 ft.)

8. Accessory Structure(s): Existing Bath house (20 ft. by 40 ft.)
   Existing Garage (24 ft. by 24 ft.) with
   Existing Addition (24 ft. by 38 ft.)
   Existing Well house (9 ft. by 12 ft.)
   Existing Storage Shed (12 ft. by 12 ft.)
   Existing Recycling Shed (3 ft. by 20 ft.)
   Existing Utility Shed (7 ft. by 9 ft.)
   Existing Pit Privies (4 ft. by 4 ft.)
   Existing Pavilion (30 ft. by 45 ft.)
   Existing Deck/Breezeway (20 ft. by 60 ft.)
   Existing Viewing Platform (8 ft. by 10 ft.)

Existing Viewing Platform (8 ft. by 10 ft.)
Existing Viewing Platform (8 ft. by 12 ft)

9. Affected Waterbody: Toothaker Brook #2
Cupsuptic Lake

The Commission has identified Cupsuptic Lake as a management class 4, resource class 1A, accessible, developed lake with the following resource ratings: outstanding fisheries resources, outstanding wildlife resources, outstanding scenic resources, significant shore character, significant cultural resources.

Administrative Background

10. The Applicant's 110 acre lot has approximately 680 feet of frontage on the Toothaker Brook, approximately 6,760 feet of frontage on Cupsuptic Lake, and approximately 2,340 feet of frontage on State Route 16. The lot was developed prior to the Commissions inception with a 59 site commercial campground. The existing structures associated with the pre-Commission campground included a 24 foot by 24 foot recreation hall, a 25 foot by 29 foot bath house, a bandstand, a store, a 9 foot by 12 foot well house, and two 4 foot by 4 foot pit privies. Several of the existing camping sites in the pre-Commission campground are located adjacent to the property line of an abutting parcel at the northwest end of the applicant's lot. The campground is advertised by three existing, unlighted 4 foot by 8 foot signs along State Route 16. Two of the signs are located approximately 1,000 feet away from the campground entrance in opposite directions along State Route 16, and the third is located across State Route 16 from the entrance to the campground. There are no proposed changes to the signs.

11. Development Permit DP 3578 was issued in December of 1983 to Raymond Shorey, authorizing the expansion of an existing parking lot serving the pre-Commission campground.

12. In November of 1997, Building Permit BP 6143 was issued to Arthur Roberts, granting permit approval to construct a 24 foot by 30 foot permanent home on the lot and to install a combined sewage disposal system. The permanent home was subsequently constructed to be 24 feet by 24 feet with a 5 foot by 6 foot porch and an 8 foot by 18 foot deck. The sewage disposal system was installed as designed. The permanent home has been used as the campground office prior to the applicants acquisition of the property in 2006.

13. Amendment A to Development Permit DP 3578 was issued to Dan Gallant in September of 1999, authorizing the construction of a 6 foot by 24 foot addition onto the existing bath house. The addition was subsequently constructed as proposed.

14. Amendment B to Development Permit DP 3578 was issued to Daniel and Barbara Gallant in December of 2001, granting permit approval for a second entrance to the existing parking lot from State Route 16. The parking lot entrance was subsequently constructed as proposed.

15. In March 2002, the Commission denied Amendment Request C to Development Permit 3578 submitted by Daniel and Barbara Gallant, denying after-the-fact approval for a 16 foot by 16 foot addition to the existing pre-Commission store that had been constructed within 8 feet of the nearest property line and within 68 feet of State Route 16. That addition was subsequently removed in conformance with a settlement agreement with the Gallants September 2002. [Ref: Enforcement Case EC 02-8, resolved].

16. Amendment D to Development Permit DP 3578 was issued in August of 2002 to Daniel and Barbara Gallant, authorizing construction of a 16 foot by 18 foot addition to the store to be located 10 feet from property boundary line and 75 feet from the State Route 16. The 10 setback was determined to be the existing setback for the store from the property line.

17. In September 2002, the Commission issued a Correction to Amendment D to Development Permit DP 3578, granting approval for a proposed 18 foot by 19 foot deck to be attached to the existing store, which had been erroneously omitted from the original Amendment D.

18. Prior to the Applicant's acquisition of the property, the recreation hall was converted to a garage; and a 12 foot by 12 foot storage shed was constructed on the lot without permit approval. In the summer of 2010, the bandstand and the store additions were demolished and removed from the property. A 7 foot by 9 foot electric utility shed was also constructed without permit approval as part of an upgrade to the electric service on the property. The number of campsites in 2010 was down to 54 from 59.

19. Amendment E to Development Permit DP 3578 was issued to Rangeley Lakes Heritage Trust in January of 2011 granting approval for the construction of a 12 foot by 24 foot deck, a 3 foot by 8 foot stairs, a 3 foot by 29 foot handicapped access ramp, and a 8 foot by 18 foot roof extension for the campground office, and after-the-fact approval of the electric utility shed and storage shed described in paragraph 18 above. The applicant also proposed and obtained permit approval to remove a 29 foot by 31 foot bath house and construct a 20 foot by 20 foot bath house, 20 foot by 40 foot bath house, two access ramps: one 8 foot by 26 foot and the other 6 foot by 18 foot, a 12 foot by 24 foot roofed connector platform, 4 foot by 12 foot stairs, 8 foot by 13 foot entry platform, and a 3 foot by 13 foot recycling shed. As of November 2011, the applicant had completed the removal of a 29 foot by 31 foot bath house and had constructed the 12 foot by 24 foot deck, 3 foot by 8 foot stairs, the 20 foot by 40 foot bath house, and the 3 foot by 13 foot recycling shed. All construction from Amendment E has been completed.

20. Amendment F of Development Permit DP 3578 was issued to Rangeley Lakes Heritage Trust in December of 2011 granting approval for construction of a 30 foot by 45 foot pavilion with a 20 foot by 60 foot breezeway and eleven Recreational Vehicle (RV) campsites. These sites included those numbered 16, 18, 21, 23, 24, 25, 26, 28, and 29 on a plan labeled Cupsuptic Campground, Site Plan Exhibit D. Campsites would consist of 20 foot by 45 foot gravel pads and water and sewer hook ups. All sites were approved to be located 100 feet from Toothaker Brook, at least 75 feet from the nearest roadway, and 25 feet from the nearest property line. The pavilion and breezeway were approved to be located 100 feet from Toothaker Brook and 150 feet from Cupsuptic Lake, and to be less than 30 feet in height. All structures and campsites have been fully constructed and built as approved.

21. Amendment F of Development Permit DP 3578 also authorized construction of a 600 foot by 16 foot one lane access way coming off an existing camp road. The approved driveway would loop back to the existing parking lot between the office and garage. Approximately 100 feet of the approved road passes through land previously zoned by the Commission as P-WL Wetland Protection Subdistrict. The wetland area that would be traversed by the road was approximately 1,560 square feet; approximately 1334 square feet of alteration was within the area previously zoned as P-WL2, and approximately 226 square feet within the area zoned P-WL1 (because of its proximity to Cupsuptic Lake). The approved driveway would be constructed using a gravel base and surface. Where it crossed wetland areas (as zoned by the Commission and/or as delineated by the applicant) it would be constructed entirely above the existing ground surface using a technique known as a "rock sandwich", which consists of removing the existing vegetation, leveling the surface by cutting stumps even with the ground and filling holes, laying filter fabric over the ground surface, followed by coarse gravel (2 inch diameter or greater), with another layer of filter fabric above the coarse gravel and surface material on top of the second layer of filter fabric. The campsites have been fully constructed.

22. Zoning Petition ZP 736 was issued to Rangeley Lakes Heritage Trust in March 2012, which rezoned the areas previously zoned P-WL1 and P-WL2 to P-GP and M-GN. The wetland area that had been delineated by the applicant was zoned P-WL3.

23. As a result of Zoning Petition ZP 736, the Commission issued Amendment G to Development Permit DP 3578 to the applicant. This amendment authorized the construction of three additional RV campsites (56, 57 and 58), which were deleted from the Amendment F permit application because they were located within mapped Wetlands Protection Subdistrict (P-WL). The applicant demonstrated in the delineation that the locations of the proposed campsites were not located in an actual wetland area. The RV campsites would be 20 foot by 45 foot gravel pads with water and sewer hook ups. The campsites would be accessible by the one way roadway previously authorized in Amendment F. The campsites have been fully constructed.

24. A second subsurface wastewater disposal system, designed to meet the needs of 26 RV campsites, was also approved by Amendment F to DP 3578, and placed east of the existing garage/ storage building. Twelve additional existing campsites were to receive plumbing for sewer hook-ups to the proposed wastewater disposal system as a result. The second wastewater disposal system is designed to reduce the amount of wastewater that is going to the existing subsurface disposal system and was installed in the fall of 2011 and additional water lines were completed in the spring of 2012.

25. In May of 2013, the Applicant was issued Amendment H to Development Permit DP 3578 for the construction of a 12 ft. by 24 ft. tent platform to the "bandstand" site creating a dry area for a canvas cabin tent. The floor of the current campsite was developed with a gravel pad which had a dip creating a puddle in the middle of the site. The constructed the platform was to be situated so that it sat directly on the gravel that is currently onsite. The tent platform authorized to be 110 feet from Cupsuptic Lake, 250 feet from Toothaker Brook, and approximately 1,400 feet from State Route 16. The platform has been fully constructed.

26. In July of 2013, the Applicant was issued Amendment I to Development Permit DP 3578 for the construction of three viewing platforms to be used in conjuction with a walking and wheelchair accessible trail. Two of the platforms (Platform A and Platform B) are 8 ft. by 10 ft. and the other (Platform C) is 8 ft. by 12 ft. The Platforms A and B are located 275 and 100 feet from Cupsuptic Lake, greater than 50 feet from Route 16, greater than 15 feet from property boundary lines, located outside the upland edge of wetlands, and at least 75 feet from the nearest stream. Platform C is located 20 feet from the normal high water mark of Cupsuptic Lake, 265 feet from Route 16, 240 feet to the nearest property boundary line, located outside the upland edge of wetlands, and 55 feet from the nearest stream. Platform C is part of a wheelchair accessible trail, which due to the nature of the site, requires the platform to be located in such proximity to the lake. All trail and platform construction have been constructed to minimize any impact to the ground.

27. In August of 2013, the Applicant received permit approval for Amendment J of Development Permit DP 3578 for a 24ft. by 38ft. addition onto the existing 24ft. by 24ft. garage. The addition was to be located 491 feet from Cupsuptic Lake, 630 feet from Toothaker Brook, 244 feet from Route 16, and 220 feet from the nearest property boundary line. The addition was not to have any bedrooms or bathrooms, plumbing/ water fixtures, or generate waste water. The addition has been fully constructed.

28. In October of 2013, the Applicant received permit applroval for Amendment K to Development Permit DP 3578 for removal of the existing 24 foot bu 24 foot office building, the 5 foot by 6 foot attached porch, the 8 foot by 18 foot and 12 foot by 24 foot decks, and the 3 foot by 8 foot stairs. The structures were authorized to be replace with a 104 foot bu 32 foot office building and managers apartment. The new building was to be connected to an existing septic system. The new office building and managers apartment was to be located approximately 185 feet from State Route 16, 160 feet to the nearest property line, 520 feet to Cupsuptic Lake, 440 feet from Toothaker Brook #2, and over 200 feet to the nearest wetland.

Proposal

29. *Existing Conditions.* Currently, the one-half acre (24,000 square feet) area of concern is vegetated with mature black spruce and balsam fir planted approximately 50 years ago. The lower sections of the trees are damaged with nails and other metal supports used by campers to hang camping equipment; these hangers have accelerated the decline in the trees' vitality. Little to no woody vegetation and other vegetation under three feet in height or ground vegetation and ground cover is present in the area of concern. The mature tree roots have been exposed and the ground around the mature trees has been heavily compacted by longtime foot traffic within and between the sites. Because of the lack of understory and the incremental pruning of the mature trees over the lifetime of the campground, there is minimal screening below fifteen feet of the campsites, bathhouse and pavilion from the lake and stream.

30. *Vegetation Clearing and Stump Removal*. The Applicant proposes to remove 172 mature black spruce and balsam fir trees from the area of concern which is located at the intersection of Toothaker Brook #2 and Cupsuptic Lake. The Applicant assessed the trees within the area of concern with two independent arborists and submitted two scaled site plans depicting the approximate location of the vegetation to be removed, the vegetation to remain, and the vegetation to be planted (provided as part of supplemental material submitted on January 29, 2016). All trees marked for removal are within 250 feet of the waterbodies and are located within a P-GP subdistrict. Two other trees are proposed to be removed at the southeastern portion of the campground. The applicant has proposed that the tree removal would be performed under frozen ground conditions with a processor and forwarder. Stumps would be removed with a stump grinder; however, the existing root systems of the trees would remain intact to ensure soil stabilization. A layer of topsoil would be emplaced to cover the existing exposed root system.

31. *Revegetation Plan*. The applicant submitted a revegetation plan that states would provide better screening of the campsites from the waterbodies as well as improved screening between each campsite by replanting the area of concern with eight (8) foot to ten (10) foot trees and saplings spaced (8) feet to ten (10) feet apart. Commission staff determined the revegetation plan as submitted is incomplete and is working with the applicant to develop a revegetation plan that assures there will be no undue adverse effect on existing uses, scenic character, and natural resources in the area.

Relevant Commission Review Criteria

32. In approving applications submitted to it pursuant to 12 M.R.S.A. §685-A(10) and §685-B, the Commission may impose such reasonable terms and conditions as the Commission may consider appropriate in order to satisfy the criteria of approval and purpose set forth in these statutes, rules and the Comprehensive Land Use Plan. (*Ch. 10.24*)

33. Vegetation clearing activities not in conformance with the standards of section 10.27,B may be allowed upon issuance of a permit from the Commission provided that such types of activities are allowed in the subdistrict involved. An applicant for such permit shall show by a preponderance of the evidence that the proposed activity, which is not in conformance with the standards of this section, shall be conducted in a manner which produces no undue adverse impact upon the resources and uses in the area. (*Ch. 10.27,B*)

34. A vegetative buffer strip shall be retained within 75 feet of the normal high water mark of any flowing water draining less than 50 square miles (such as Toothaker Brook #2) and 100 feet of the normal high water mark of a body of standing water 10 acres or greater in size (such as Cupsuptic Lake). (*Ch. 10.27,B,1,b and c*)

35. Within this buffer strip, vegetation shall be maintained as follows: (*Ch. 10.27,B,2*)

There shall be no cleared opening greater than 250 square feet in the forest canopy as measured from the outer limits of the tree crown. (*Ch. 10.27,B,2,a*)

Selective cutting of trees within the buffer strip is permitted provided that a well-distributed stand of trees and other natural vegetation is maintained. (*Ch. 10.27,B,2,b*)

In addition to Section 10.27,B,2,b above, no more than 40% of the total basal area of trees 4.0 inches or more in diameter, measured at 4½ feet above ground level, may be removed in any ten (10) year period. (*Ch. 10.27,B,2,c*)

In order to maintain a buffer strip of vegetation, when the removal of storm-damaged, diseased, unsafe, or dead trees results in the creation of cleared openings in excess of 250 square feet, these openings shall be established with native tree species. (*Ch. 10.27,B,2,e*)

36. When revegetation is required as a mechanism to allow for development by permit that exceeds the vegetation standards of Section 10.27,B, the revegetation must comply with the following requirements of 10.27,B,5, a through f. (*Ch. 10.27,B,5,(iii)*)

    a. The property owner must submit a revegetation plan, prepared with and signed by a qualified professional (examples include: arborist, forester, landscape architect, U.S.D.A. Natural Resources Conservation Service), that describes revegetation activities and maintenance. The plan must include a scaled site plan depicting where vegetation was, or is to be removed, where existing vegetation is to remain, and where vegetation is to be planted, including a list of all vegetation to be planted. (*Ch. 10.27,B,5,a*)

    b. Revegetation must occur along the same segment of shoreline and in the same area where vegetation was removed and at a density comparable to the pre-existing vegetation, except where a shoreline stabilization activity does not allow revegetation to occur in the same area and at a density comparable to the pre-existing vegetation, in which case revegetation must occur along the same segment of shoreline and as close as possible to the area where vegetation was removed. When part of a mitigation plan, revegetation must occur along the same segment of shoreline, road, or other resource affected by proposed uses or development, and at a density and configuration comparable to other naturally occurring forests on the site or in the vicinity. (*Ch. 10.27,B,5,b*)

    c. Revegetation activities must meet the following requirements for trees and saplings: (*Ch. 10.27,B,5,c*)
        (1) All trees and saplings removed must be replaced with native noninvasive species;
        (2) Replacement vegetation must at a minimum consist of saplings;
        (3) If more than three trees or saplings are planted, then at least three different species shall be used;
        (4) No one species shall make up 50% or more of the number of trees and saplings planted;
        (5) If revegetation is required for a shoreline stabilization project, and it is not possible to plant trees and saplings in the same area where trees or saplings were removed, then trees or sapling must be planted in a location that effectively reestablishes the screening between the shoreline and structures; and
        (6) A survival rate of at least 80% of planted trees or saplings is required for a minimum five years period from the time of planting. Replanting of trees or saplings that did not survive does not trigger a new five year period.

    d. Revegetation activities must meet the following requirements for woody vegetation and other vegetation under three feet in height: (*Ch. 10.27,B,5,d*)

(1) All woody vegetation and vegetation under three feet in height must be replaced with native noninvasive species of woody vegetation and vegetation under three feet in height as applicable;
(2) Woody vegetation and vegetation under three feet in height shall be planted in quantities and variety sufficient to prevent erosion and provide for effective infiltration of stormwater;
(3) If more than three woody vegetation plants are to be planted, then at least three different species shall be planted;
(4) No one species shall make up 50% or more of the number of planted woody vegetation plants; and
(5) Survival of planted woody vegetation and vegetation under three feet in height must be sufficient to remain in compliance with the standards contained within this chapter for a minimum of five years from the time of planting. Replanting of trees or saplings that did not survive does not trigger a new five year period.

e. Revegetation activities must meet the following requirements for ground vegetation and ground cover: (*Ch. 10.27,B,5,e*)
(1) All ground vegetation and ground cover removed must be replaced with native herbaceous vegetation, in quantities and variety sufficient to prevent erosion and provide for effective infiltration of stormwater;
(2) Where necessary due to a lack of sufficient ground cover, an area must be supplemented with a minimum four inch depth of leaf mulch and/or bark mulch to prevent erosion and provide for effective infiltration of stormwater; and
(3) Survival and functionality of ground vegetation and ground cover must be sufficient to remain in compliance with the standards contained within Section 10.27,B for a minimum of five years from the time of planting.

f. The applicant may propose, and the Commission may approve or require, variations from the standards in Section 10.27,B,5,c through e if necessary to achieve effective buffering. The Commission may exempt an individual, whether an applicant or violator, from the requirement that the revegetation plan be prepared by a qualified professional in accordance with Section 10.27,B,5,a, when the proposed revegetation is routine and would not affect a particularly sensitive resource. (*Ch. 10.27,B,5,f*)

37. The facts are otherwise as represented in the application for Development Permit DP 3578, subsequent amendments, and supporting documents.

Based upon the above FINDINGS, the staff CONCLUDES that:

1. The proposed vegetation clearing is for the purpose of facilitating the continued use and development of the existing campground and to remove storm-damaged, diseased, unsafe, and dead trees.

2. The proposed removal of storm-damaged, diseased, unsafe, and dead trees and subsequent revegetation will result in creation of cleared openings in excess of 250 square feet and will remove substantial portions of the existing buffer strip along Toothaker Brook #2 and the shoreline of Cupsuptic Lake and will exceed sections 1,b & c; 2,a & b; and 4 of 10.27,B (Vegetation Clearing standards).

3. The vegetation clearing standards of 10,27,B,1-4 may be exceeded to allow for development upon issuance of a permit but revegetation is required in order to to achieve effective buffering.

4. The applicant has sought to minimize the impact of the tree removal by conducting the removal during frozen ground conditions. In order to minimize the impact of the tree removal, and because weather conditions will likely result in an earlier-than-usual thaw, the Commission finds that the tree removal should commence no later than March 15, 2016, unless weather conditions allow and the Commission authorizes a later date in writing.

5. The removal of storm-damaged, diseased, unsafe, and dead trees and subsequent revegetation does not create conditions that otherwise would change the level of the recreational lodging facility as the proposal does not result in new or expanded level determination factors. Because the Applicant is not proposing any new or expanded level determination factors which would increase the facility's level, the Commission has not evaluated the level determination factors nor assigned a level to the recreational lodging facility within this permit.

6. The Commission concludes that as long as the applicant, working with Commission staff, finalizes, submits, and implements a revegetation plan that complies with the Commission's Standards and the Conditions below, the proposal will not adversely affect surrounding uses and resources.

Therefore, the staff APPROVES the amendment request of Rangeley Lakes Heritage Trust, Inc. with the following CONDITIONS:

1. By March 15, 2016, the Permittee shall commence tree removal unless weather conditions allow and the Commission authorizes a later start date in writing.

2. By April 01, 2016, the Applicant shall finalize a revegetation plan in full compliance with the Commission's Standards and obtain a letter from the Commission stating the final plan complies.

3. By June 01, 2016, or later date if consistent with the revegetation plan and approved by the Commission in writing, the Applicant shall implement the revegetation plan.

4. This permit does not authorize any change in campsite locations, change in building design or location, or expansion of use; this permit addresses vegetation removal and the revegetation only.

5. Vegetaion clearing activities, except those necessary to establish sedimentation control devices, shall not begin until all erosion and sedimentation control devices (including ditches, culverts, sediment traps, settling basins, hay bales, silt fences, etc.) have been installed and stabilized. Once in place, such devices shall be maintained to ensure proper functioning. All temporary sedimentation and erosion control devices shall be removed after vegetation clearing and revegetation activity has ceased and a cover of healthy vegetation has established itself or other appropriate permanent control measures have been effectively implemented. Permanent soil stabilization shall be completed within one week of inactivity or completion of vegetation clearing and revegetation.

6. Topsoil placed over the mature tree root system shall be in compliance with those standards outline for <u>sterile soils</u> in Appendix B, the *Guidelines for Vegetation Stabilization*, a copy of which is attached.

This permit is approved only upon the above stated conditions and remains valid only if the permittee complies with all of these conditions. In addition, any person aggrieved by this decision of the staff may, within 30 days, request that the Commission review the decision.

DONE AND DATED AT AUGUSTA, MAINE, THIS 7TH DAY OF MARCH, 2016.

By: _____

Nicholas D. Livesay, Executive Director

APPENDIX B GUIDELINES FOR VEGETATIVE STABILIZATION

Areas of disturbed soil, including but not limited to areas that are filled, graded or otherwise disturbed during construction projects, should be stabilized according to the following guidelines. These guidelines do not apply to forest management activities and are not strict regulations, and therefore alternative methods of stabilizing soil may be used. However, whenever soil stabilization or stabilization of disturbed areas is required by regulation or by the terms of individual permits, individuals must assure that either these guidelines, or measures equally effective in stabilizing disturbed areas of soil are employed.

The goals to be achieved by proper stabilization are the avoidance of accelerated soil erosion and the avoidance of sedimentation or pollution of water bodies. All stabilization measures must be maintained so that grass or other vegetation remains intact and healthy, otherwise these measures will be ineffective.

In general:

1. Sterile soils such as sands and gravels should be covered with 2 to 4 inches of soil medium that will support vegetative growth.

2. Disturbed soil areas should be graded such that runoff water is either minimized or eliminated from running over the site.

3. Disturbed areas which can be seeded between May 1 and September 15 should be prepared and seeded during that period.

4. Disturbed areas which cannot be seeded between May 1 and September 15 should be mulched with hay, straw or some other suitable material to keep them as stable as possible over the winter, and particularly during spring runoff the following year. For over-wintering, mulch must be tacked down, as it is easily blown around on frozen ground, leaving areas of soil exposed. Mulch hay should be applied at a depth of 4 inches, or between 150 to 200 lbs. per 1,000 square feet, over the disturbed site. Mulched over-wintered areas should be prepared and seeded the following spring as soon as conditions allow.

It is not recommended that disturbed areas be seeded after September 15th ("dormant seeding") for a number of reasons. Among the reasons, seeding rates are doubled, which is more expensive; timing is critical to ensure that germination does not occur before the following spring; there is an increased risk of sedimentation because sites are generally wetter in the fall; the thicker mulch must be removed in the spring in order to allow the germinating seed to survive; and the application of fertilizer during this time increases the risk of leaching or runoff loss of nutrients into water bodies.

5. Seeding preparation, in addition to providing a soil medium that will support vegetative growth if the site is sterile, includes the application of lime and fertilizer, which should be lightly raked prior to seeding. After the area is seeded, it should be lightly watered and then mulched with 70 to 90 lbs. (2 standard bales) per 1,000 square feet of weed free hay or straw to protect the seed. Keep the site stable and moist, and allow the seed to germinate and grow.

6. For accurate liming as well as fertilization, it is recommended that you have the soil analyzed to determine the specific nutrient requirements of your site.

Lime should be applied at a rate of approximately 140 pounds to 1,000 square feet of area. This rate may vary depending on the natural conditions of the soil on the site. 10-5-20 fertilizer should be applied at a rate of 18.5 lbs. per 1,000 square feet of area. Following the establishment of vegetation, non-phosphorous fertilizer should be used in accordance with the Department of Environmental Protection's recommendations.

7. In shoreland areas in particular, fertilizers should be of the "quick release" low phosphorus type, such as 12-4-8 mixtures applied at a rate of 8 pounds per 1,000 square feet of area. If you are near water bodies, it is important not to apply more than approximately this amount of fertilizer, as excess may be washed into streams or lakes and contribute to lowering water quality and such things as algae blooms in lakes.

Following the establishment of vegetation, non-phosphorous fertilizer should be used in accordance with the Department of Environmental Protection's recommendations.

Fertilizers should never be applied right before thunder storms or before spring runoff, because the great amounts of water running over the land will wash the fertilizer, particularly phosphorus, into water bodies. However, a light watering after the fertilizer is applied will help bind the phosphorus to the soil.

8. There are many combinations of grasses that can be used. One combination particularly good for providing soil stability, generally referred to as the Soil Conservation Mixture, consists of: (Proportions, by weight)

Creeping Red Fescue	35%	Kentucky Bluegrass	25%
Annual Rye Grass	15%	Perennial Rye Grass	10%
Red Top	10%	White Dutch Clover	5%
* Oats - See Below			

This seed would be applied at a rate of 1 pound per 1,000 square feet. These particular grasses do best if mowed no closer than 2-1/2 to 3 inches from the ground. Of course, other seed mixtures are available.

It is important, in choosing a mixture, to choose one suitable for the site being stabilized. There are many different types of seeding mixtures designed for particular site conditions such as shade, sun, and drainage. Any mix should contain some seed which germinates rapidly to provide the quickest stabilization possible while awaiting the germination of the remaining types.

(*) For quick germination, oats are very good. They germinate in 7 to 10 days. They should be planted at a rate of approximately 1 to 1-1/2 bushels per acre, in addition to the basic grass mixture. Oats should be mowed when they reach knee height to allow the germinating grasses to receive sunlight.

Alternatives:

As indicated above, other stabilization programs may be used, provided they are equivalently effective in stabilizing disturbed areas and preventing accelerated soil erosion and sedimentation of water bodies. Further assistance may be obtained, including in some cases site-specific recommendations, as follows:

- Local Soil and Water Conservation Districts
- The USDA Natural Resource Conservation Service
- Maine Department of Environmental Protection, Lakes Program
- Landscaping Professionals
- Reputable Lawn and Garden Supply Dealers

The following documents may provide valuable assistance to those developing a soil stabilization plan:

Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices (Cumberland County Soil & Water Conservation District and Maine Department of Environmental Protection, 1991)

Strategy for Managing Nonpoint Source Pollution From Agricultural Sources and Best Management Guidelines (NPS Agricultural Task Force, 1991)

Erosion and Sediment Control Handbook for Maine Timber Harvesting Operations, Best Management Practices (Maine Forest Service, 1991)