REVIEW OF

NONPOINT SOURCE WATER POLLUTION

CONTROL PROGRAMS IN MAINE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Water Quality Control
Division of Environmental Evaluation and Lake Studies
State House Station 17
Augusta, Maine 04333
287-3901

STATE PLANNING OFFICE
Natural Resources Policy Division
Maine Coastal Program
State House Station 38
Augusta, Maine 04333
287-3261

TABLE OF CONTENTS

INTRODUCTION

WHAT IS NONPOINT SOURCE POLLUTION?

Water pollution is generally divided into two types. The first type is known as "point source" pollution which comes from any pipe, ditch or other specific point. The second type is known as "nonpoint source" pollution which is every source of water pollution that is not considered a point source. Nonpoint source pollution is generally considered to be the diffuse pollution carried by rainwater. This includes sources such as runoff from streets, parking lots construction sites and agricultural land.

Since 1972, point sources have been regulated through state and federal laws that require a permit for each individual source. Nonpoint sources of pollution, on the other hand, have only recently been addressed through a patchwork of state programs, both regulatory and non-regulatory. These programs encourage people to use certain practices that will prevent contaminants from being discharged at all or will remove the contaminants from the runoff before it enters a body of water (known as "Best Management Practices"). These programs are coordinated through the State Nonpoint Source Management Plan ("NPS Management Plan") implemented by the Maine Department of Environmental Protection (DEP).

Piecing together all of the programs that address the various types of nonpoint source pollution is somewhat complex and can be confusing. Nevertheless, federal law requires Maine to determine whether the current state nonpoint source programs adequately control nonpoint source pollution of coastal waters.

FEDERAL LAW REQUIREMENTS

All coastal states are required by federal law[1] to prepare and submit to the U.S. Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA) a Coastal Nonpoint Pollution Control Program ("Coastal NPS Program"). Once this program is planned, it will be integrated as an update of the existing statewide NPS Management Plan at the DEP, and it will NOT continue to be a separate program.

Required Management Measures

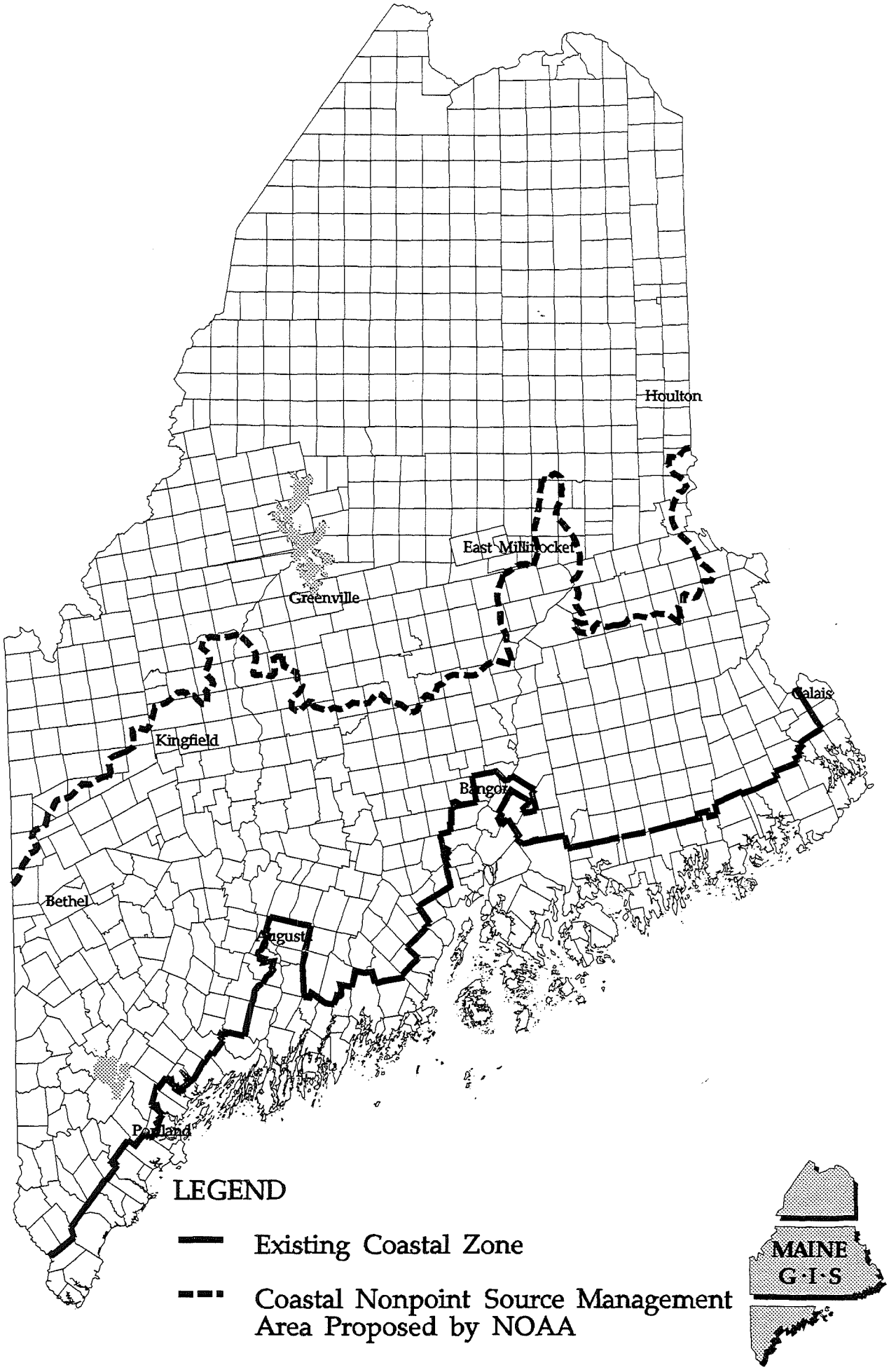
The Coastal NPS Program must contain certain elements.[2] The first element is the implementation of certain enforceable management measures to control nonpoint source pollution. The State must have some law, regulation or other mechanism to enforce management measures required by EPA. This does not mean that the State will only use enforcement methods for nonpoint source control. Rather, the State will still use the current mix of voluntary and incentive methods of nonpoint source control, but must also have some backup enforcement power in the event that the non-regulatory methods do not work. This also does not necessarily mean that new laws need to be created because **the State may rely on existing regulatory and non-regulatory programs to fulfill the requirements.**

Under federal law, the required management measures must be applied to "significant" sources of coastal pollution. NOAA has made a recommendation to the State for the geographical area that should be covered (See enclosed map). The State must now decide whether to accept this recommendation or to propose a different area where these management measures will be made enforceable.

---

[1] Section 6217 of the Coastal Zone Act Reauthorization and Amendments of 1990 (16 U.S.C. § 1455b)

[2] See Appendix A for an outline of the required elements.


Houlton
East Millinocket
Greenville
Kingfield
Calais
Bangor
Bethel
Augusta
Portland
LEGEND
Existing Coastal Zone
Coastal Nonpoint Source Management Area Proposed by NOAA
MAINE G·I·S

Additional Management Measures

The second element of the Coastal NPS Program is the implementation of additional management measures in certain locations. If the required management measures described above are not sufficient to maintain the desired water quality, the State must take additional steps to further reduce nonpoint source pollution in the following areas:

(1) Areas where land uses cause or significantly contribute to the pollution of coastal waters where water quality is now impaired or threatened; and

(2) "Critical" coastal areas where new or expanded land uses would pose a threat to coastal waters.

In these locations, the State may first put in place the required management measures. It will then monitor the water to determine whether additional management measures are necessary. If so, the State must decide what additional measures should be taken.

Other Requirements

Finally, The Coastal NPS Program must also include the following elements:

(1) technical and other assistance to local governments and the public to implement the management measures;

(2) opportunities for public participation in all aspects of the program; and

(3) mechanisms to improve coordination among state agencies and between state and local governments concerning nonpoint source regulation;

Penalties and Deadline

If Maine fails to prepare a Coastal NPS Program it will lose up to 30% of the federal funds we already receive for both the Maine Coastal Zone Management Program at the State Planning Office (SPO) and the Nonpoint Source Program at DEP. These funds are important because they are distributed to number of other State agencies who use these funds to control water pollution. The deadline for the State to submit its proposed Coastal NPS Program is July, 1995.

INITIAL REVIEW PROCEDURE AND FORMAT

As noted above, the federal law does not necessarily require the creation of new laws or regulations to control nonpoint source pollution because the State may rely on existing regulatory and non-regulatory programs to fulfill the requirements. To avoid duplicating efforts, the State has prepared this review of the current nonpoint source programs to determine whether they already meet the requirements of this federal law, and to determine whether they could be improved in some way, regardless of the federal requirements. The final Coastal NPS Program will only focus on those areas that are not adequately addressed under the current programs.

To ease the review process, the existing State regulatory and non-regulatory programs have been reviewed initially by the SPO and DEP in conjunction with other state and federal agencies.[3] This review was conducted through meetings in which the programs were discussed and a worksheet was prepared to record the status and needs of each program.[4] Part of this review was aimed at determining whether the current system already contains enforceable Management Measures that are required by the federal law. [5] The other part of this review identified any needs or improvements that could be made to the current system, whether or not required by federal law.

The review is organized according to categories of nonpoint source pollution that were identified by EPA -- Agriculture, Forestry, Urban, Marinas and Hydromodification (dams, channelization and streambank protection). The review also includes a section for wetlands use and protection, as required by EPA. Each chapter explains the required Management Measures that must be implemented by the state for each category of nonpoint source pollution. The existing state programs that address each Management Measure are then described briefly. Finally, each chapter lists the components of the Management Measures that are not covered by the existing state programs ("Management Issue List").

---

[3] See Appendix B for a list of the participants in this initial review.

[4] See Appendix C for a sample worksheet.

[5] These Management Measures are explained in each chapter of this Review. More information these Management Measures may be obtained by contacting the DEP Water Bureau or the Maine Coastal Program at the State Planning Office.

REQUEST FOR PUBLIC COMMENT

During this public comment period (August 3-31, 1993), the State is seeking public input on the following issues:

(1) Does this review accurately state the status of State programs in relation to each of the Management Measures?

- In other words, are the Management Issue Lists accurate?

(2) How should Maine respond to NOAA's recommended area for implementing these Management Measures?

- Should Maine accept the recommendation and implement these measures only in the southern half of the State; or
- Should Maine implement these measures statewide; or
- Should Maine attempt to narrow the scope of the recommended area so that the measures would only apply to a smaller area? If so, what should this area be? Keep in mind that if we propose an area smaller than NOAA's recommendation, we must gather information to justify this proposal.

At the end of the public comment period, the review will be revised to reflect new information. The State will then submit this review to EPA and NOAA for their review. The goal is to reach an agreement with these federal agencies on the management issues that must be addressed in Maine's Coastal NPS Program. Once these issues have been agreed upon, small working groups will be formed in the State to focus on the issues for each source category of nonpoint source pollution. These working groups will develop options for resolving these issues, which will then be subject to public comment.

NONPOINT SOURCE CATEGORIES

AGRICULTURE

A. Erosion and Sediment Control

Apply the erosion component of a Conservation Management System (CMS) as defined in the Field Office Technical Guide of the U.S. Department of Agriculture-Soil Conservation Service to minimize the delivery of sediment from agricultural lands to surface waters, or

Design and install a combination of management and physical practices to settle the settleable solids and associated pollutants in runoff delivered from the contributing area for storms of up to and including a 10-year, 24-hour frequency.

This measure applies to **activities that cause erosion** on agricultural land and on land that is converted from other land uses to agricultural lands.

1. Existing Programs

Waste Discharge License (38 MRSA § 411 et seq.)

A license is required for a direct or indirect discharge of any pollutant into the waters of the state. An exemption is granted for agricultural erosion if an erosion and sedimentation plan has been recommended by the local Soil and Water Conservation District and has been approved by the Commissioner of Environmental Protection.

Although farms are required to have erosion and sedimentation control plans approved by DEP in order to qualify for the exemption form this licensing requirement, only one farm has an approved plan. According to the soil and water conservation districts, many farms have plans on file with the district but have not gone to the trouble of seeking approval from DEP. DEP has not sought such approvals because nonpoint sources are not an enforcement priority.

Maine Strategy for Managing Nonpoint Source Pollution from Agricultural Sources and Best Management System Guidelines

This manual describes best management practices for agriculture which are combined to form a "best management system". It then describes the state strategy for implementation. This strategy emphasizes education and technical assistance, but also recognizes enforcement as a necessary backup to these efforts. This strategy includes a sediment best management system which incorporates the best management practices developed by the U.S. Soil Conservation Service.

Nuisance Law (17 MRSA § 2701 et seq.)

The Department of Agriculture must investigate and report on complaints of improper manure handling and water pollution by farms. A farm which conforms to the best management practices, as determined by the Department of Agriculture, is not liable as a public or private nuisance. If the farmer does not adopt generally

accepted manure handling practices and/or best management practices, the matter shall be referred to the Attorney General for consideration of an action to abate the nuisance. If the Department finds that a case of improper manure handling may have affected water quality, the Commissioner of Environmental Protection shall also be notified and may respond as appropriate.

A civil action for damages may be brought by any person injured by a nuisance. The Attorney General may also bring civil actions to abate public nuisances. A nuisance is defined in part as "corrupting or rendering unwholesome or impure the water of a river, stream, pond, or aquifer".

The Department of Agriculture has a system for receiving and investigating nuisance complaints. Of the approximately 150 complaints received, 90% are considered legitimate complaints about nuisance farming practices. The department has been able to remedy over 95% of these complaints through negotiations with the farmer on which BMP's should be implemented in a given situation. The remaining few complaints have been successfully remedied through further proceedings, either through an official letter from the department or a hearing to determine the legitimacy of the complaint and to determine a remedy. No complaints have ever needed to be sent to the Attorney General's Office for further enforcement.

Mandatory Shoreland Zoning (38 MRSA § 483-A)

The guidelines promulgated by DEP to serve as model shoreland zoning ordinance include the following controls for agricultural erosion and sediment control in the shoreland zone (250 ft from the high water line):

1. Agriculture involving tillage of more than 40,000 sq ft, or the spreading, disposal or storage of manure within the shoreland zone shall require a Soil and Water Conservation Plan to be filed with the local planning board.

2. There shall be no new tillage of soil within 100 ft of the high water line of great ponds classified GPA, within 75 ft of other water bodies, nor within 25 ft of wetlands. Existing nonconforming practices are excepted.

Soil and Water Conservation Districts (12 MRSA § 2 et seq.)

State policy promotes soil and water conservation for agriculture; control and prevent soil erosion; control floods; protect navigability; and preserve natural resources. SWCD's have power to carry out measures to prevent flooding; to enter erosion control agreements with landowners; and to prepare and implement comprehensive plans to control and prevent soil erosion and flooding.

The SWCD's in Maine are largely staffed by federal Soil Conservation Service employees who pursue federal agricultural programs for soil and water conservation and comprehensive farm management. These program are voluntary in nature, and are considered highly successful because of the number of farms that are cooperating. The districts have developed friendly, helpful relationships with farmers, and they do not wish to take on any enforcement role. However, some district are being hired by towns on a contractual basis to review erosion and sedimentation control plans for development proposals, and the water discharge law requires the district to approve erosion and sedimentation control plans for farms that seek to be exempt form the discharge license requirement (see below). The goal of this program is get as many farms implementing comprehensive farm management plans as possible on a voluntary basis by emphasizing the economic gains for doing so.

2. Management Issues

1. Changes to Water Pollution Control law

a. Consider deleting the requirement for an exemption to the waste discharge license that an erosion and sediment control plan be approved by DEP.

2. Nuisance Law changes:

a. Consider amending the nuisance law to substitute "best management practices adopted by the Department" for "generally accepted agricultural practices".

b. Consider amending the agricultural nuisance shield law (i.e. "Right to Farm" law) to allow the application of site specific best management practices in response to complaints about erosion and sediment problems. The present law only requires this for manure management.

c. Consider making the nuisance liability shield contingent upon an erosion and sedimentation plan, or a comprehensive management plan.

3. Financial and Technical Assistance

a. Consider providing financial or other incentives to promote use of BMP's, including the development of site specific comprehensive management plans.

b. Consider ways to fund more education and technical assistance to farmers in targeted areas for BMP implementation (i.e. increased funding for current system).

c. Consider providing low interest loans and grants program for BMP implementation requiring capital improvements or changes in land use.

d. Consider more support staff to investigate nuisance complaints.

B1. Facility Wastewater and Runoff from Confined Animal Facility Management (Large Units)

Limit the discharge from the confined animal facility to surface waters by:

(1) Storing both the facility wastewater and the runoff from confined animal facilities that is caused by storms up to and including a 25-year , 24 hour frequency storm. Storage structures should: (a) have an earthen lining or plastic membrane lining, or (b) be constructed with concrete, or (c) be a storage tank; and

(2) managing stored runoff and accumulated solids from the facility through an appropriate waste utilization system.

This measure applies to **all new farms** regardless of size and to **existing confined animal facilities that contain the following number of head or more**:

	Head	Animal Units[1]
Beef feedlots	300	300
Stables	200	400
Dairies	70	98
Layers	15,000	150, if liquid manure system 495, if continuous overflowing water
Broilers	15,000	150, if liquid manure system 495, if continuous overflowing water
Turkeys	13, 750	2,475
Swine	200	80

[1] The calculations for Animal Units are for reference purposes only. The size of the facility is determined only by the number of head.

1. Existing Programs

Waste Discharge License (38 MRSA § 411 et seq.)

A license is required for any direct or indirect discharge of any pollutant into the waters of the state. While an exemption is granted for agricultural lands if an erosion and sedimentation control plan is prepared, there is no requirement for a stormwater or waste water management system or plan.

Maine Strategy for Managing Nonpoint Source Pollution from Agricultural Sources and Best Management System Guidelines

This manual describes best management practices for agriculture which are combined to form a "best management system". It then describes the state strategy for implementation. This strategy emphasizes education and technical assistance, but also recognizes enforcement as a necessary backup to these efforts. This strategy includes a manure best management system which incorporates the best management practices developed by the U.S. Soil Conservation Service.

Nuisance Law (17 MRSA § 2701 et seq.)

The Department of Agriculture must investigate and report on complaints of improper manure handling and water pollution by farms. A farm which conforms to the best management practices, as determined by the Department of Agriculture, is not liable as a public or private nuisance. If the farmer does not adopt generally accepted manure handling practices and/or best management practices, the matter shall be referred to the Attorney General for consideration of an action to abate the nuisance. If the Department finds that a case of improper manure handling may have affected water quality, the Commissioner of Environmental Protection shall also be notified and may respond as appropriate.

A civil action for damages may be brought by any person injured by a nuisance. The Attorney General may also bring civil actions to abate public nuisances. A nuisance is defined in part as "corrupting or rendering unwholesome or impure the water of a river, stream, pond, or aquifer".

The Department of Agriculture has a system for receiving and investigating nuisance complaints. Of the approximately 150 complaints received, 90% are considered legitimate complaints about nuisance farming practices. The department has been able to remedy over 95% of these complaints through negotiations with the farmer on which BMP's should be implemented in a given situation. The remaining few complaints have been successfully remedied through further proceedings, either through an official letter from the department or a hearing to determine the legitimacy of the complaint and to determine a remedy. No complaints have ever needed to be sent to the Attorney General's Office for further enforcement.

Soil and Water Conservation Districts (12 MRSA § 2 et seq.)

State policy promotes soil and water conservation for agriculture; control and prevent soil erosion; control floods; protect navigability; and preserve natural resources. SWCD's have power to carry out measures to prevent flooding; to enter erosion control agreements with landowners; and to prepare and implement comprehensive plans to control and prevent soil erosion and flooding.

The SWCD's implement a federal comprehensive farm management program that includes confined animal facility wastewater and runoff management. This program is voluntary and is not limited to any size farm. Although it is not enforceable under state law, this program is enforceable through the cooperative agreements

between the farmers and the districts. It is generally considered to be an effective method for implementing these measures.

2. Management Issues

1. Consider implementing some standards for wastewater and stormwater runoff in the state BMP's. These standards should be a subset of the practices promoted by the Soil and Water Conservation Districts.

2. Consider an evaluation of whether the current mix of education/technical assistance/enforcement is reaching the goal of controlling wastewater and stormwater runoff.

3. Consider financial or regulatory incentives to promote the use of wastewater and stormwater best management practices.

4. Consider amending the agricultural nuisance shield law (i.e. "Right to Farm" law) to allow the application of site specific best management practices in response to complaints about wastewater and stormwater runoff problems. The present law only requires this for manure management.

B2. Facility Wastewater and Runoff from Confined Animal Facility Management (Small Units)

Design and implement systems that collect solids, reduce contaminant concentrations, and reduce runoff to minimize the discharge of contaminants in both facility wastewater and in runoff that is caused by storms up to and including a 25-year, 24-hour frequency storm. Implement these systems to substantially reduce significant increases in pollutant loadings to ground water.

Manage stored runoff and accumulated solids from the facility through an appropriate waste utilization system.

This measure applies to all **existing confined animal facilities that contain the following number of head**:

	Head	Animal Units[2]
Beef feedlots	50-299	50-299
Stables	100-199	200-399
Dairies	20-69	28-97
Layers	5000-14,999	50-149, if liquid manure system 165-494, if continuous overflowing water
Broilers	5000-14,999	50-149, if liquid manure system 165-494, if continuous overflowing water
Turkeys	5000-13,749	900-2,474
Swine	100-199	40-79

1. Existing Programs

Same as B1, above.

2. Management Issues

Same as B1, above.

[2] The calculations for Animal Units are for reference purposes only. The size of the facility is determined only by the number of head.

C. Nutrient Management

Develop, implement, and periodically update a nutrient management plan to (1) apply nutrients at rates necessary to achieve realistic crop yields, (2) improve the timing of nutrient application, and (3) use agronomic crop production technology to increase nutrient use efficiency. When the source of the nutrients is other than commercial fertilizer, determine the nutrient value and the rate of availability of the nutrients. Determine and credit the nitrogen contribution of any legume crop. Soil and plant tissue testing should be used routinely. Nutrient management plans contain the following core components:

(1) Farm and field maps showing acreage, crops, soils, and waterbodies.

(2) Realistic yield expectations for the crop(s) to be grown, based primarily on the producer's actual yield history, State Land Grant University yield expectations for the soil series, or SCS Soils-5 information for the soil series.

(3) A summary of the nutrient resources available to the producer, which at a minimum include:

- *Soil test results for Ph, phosphorus, nitrogen, and potassium;*
- *Nutrient analysis of manure, sludge, mortality compost (birds, pigs, etc.), or effluent (if applicable);*
- *Nitrogen contribution to the soil from legumes grown in the rotation (if applicable); and*
- *Other significant nutrient sources (e.g. irrigation water).*

(4) An evaluation of field limitations based on environmental hazards or concerns, such as:

- *Sinkholes, shallow soils over fractured bedrock, and soils with high leaching potential,*
- *Lands near surface water,*
- *Highly erodible soils, and*
- *Shallow aquifers.*

(5) Use of the limiting nutrient concept to establish the mix of nutrient sources and requirements for the crop based on a realistic yield expectations.

(6) Identification of timing and application methods for nutrients to: provide nutrients at rates necessary to achieve realistic crop yields; reduce losses to the environment; and avoid applications as much as possible to frozen soil and during periods of leaching or runoff.

(7) Provisions for the proper calibration and operation of nutrient application equipment.

This measure applies to agricultural activities associated with the **application of nutrients.**[3]

1. Existing Programs

Waste Discharge License (38 MRSA § 411 et seq.)

A license is required for any direct or indirect discharge of any pollutant into the waters of the state. While an exemption is granted for agricultural erosion if an erosion and sedimentation plan has been prepared, there is no requirement for a nutrient management plan.

Nuisance Law (17 MRSA § 2701 et seq.)

The Department of Agriculture must investigate and report on complaints of improper manure handling and water pollution by farms. A farm which conforms to the best management practices, as determined by the Department of Agriculture, is not liable as a public or private nuisance. If the farmer does not adopt generally accepted manure handling practices and/or best management practices, the matter shall be referred to the Attorney General for consideration of an action to abate the nuisance. If the Department finds that a case of improper manure handling may have affected water quality, the Commissioner of Environmental Protection shall also be notified and may respond as appropriate.

A civil action for damages may be brought by any person injured by a nuisance. The Attorney General may also bring civil actions to abate public nuisances. A nuisance is defined in part as "corrupting or rendering unwholesome or impure the water of a river, stream, pond, or aquifer".

The Department of Agriculture has a system for receiving and investigating nuisance complaints. Of the approximately 150 complaints received, 90% are considered legitimate complaints about nuisance farming practices. The department has been able to remedy over 95% of these complaints through negotiations with the farmer on which BMP's should be implemented in a given situation. The remaining few complaints have been successfully remedied through further proceedings, either through an official letter from the department or a hearing to determine the legitimacy of the complaint and to determine a remedy. No complaints have ever needed to be sent to the Attorney General's Office for further enforcement.

Mandatory Shoreland Zoning (38 MRSA § 483-A)

The guidelines promulgated by DEP to serve as model shoreland zoning ordinance include the following controls for agriculture in the shoreland zone (250 ft from the high water line):

1. Manure spreading in accordance with the Maine Guidelines for Manure and Manure Sludge Disposal on Land.

2. Manure may not be stored within 100 ft of great ponds classified as GPA or within 75 ft of other water bodies or wetlands. Within five (5) years of the adoption of the ordinance, all manure storage areas must be constructed or modified to produce no discharge of effluent or contaminated storm water.

3. Agriculture involving tillage of more than 40,000 sq ft, or the spreading, disposal or storage of

[3] There is a scientific issue as to the degree of threat which land based nutrient inputs pose to Maine's marine waters. Consequently, this management measure will not be needed if nutrients are not considered a threat to marine waters.

3. Agriculture involving tillage of more than 40,000 sq ft, or the spreading, disposal or storage of manure within the shoreland zone shall require a Soil and Water Conservation Plan to be filed with the local planning board.

Maine Strategy for Managing Nonpoint Source Pollution from Agricultural Sources and Best Management System Guidelines

This manual describes best management practices for agriculture which are combined to form a "best management system". It then describes the state strategy for implementation. This strategy emphasizes education and technical assistance, but also recognizes enforcement as a necessary backup to these efforts. This strategy includes a nutrient best management system which incorporates the best management practices developed by the U.S. Soil Conservation Service.

Nonpoint Source Program (38 MRSA § 410-H et seq.)

This program provides grants for best management practice demonstration projects. One of these projects involves preparing nutrient management plans for selected farms in Waldo County. The plans follow the same process outlined in this measure.

2. Management Issues

1. Consider reporting requirements for nutrient applications.

2. Consider requiring/promoting soil tests.

3. Consider requiring farmers to implement nutrient management plans as a condition for the water discharge license exemption.

4. Consider amending the agricultural nuisance shield law (i.e. "Right to Farm" law) to allow the application of site specific best management practices in response to complaints about nutrient problems in surface and groundwater. The present law only requires this for manure management.

D. Pesticide Management

To reduce contamination of surface water and ground water from pesticides:

(1) Evaluate the pest problems, previous pest control measures, and cropping history;

(2) Evaluate the soil and physical characteristics of the site including mixing, loading, and storage areas for potential leaching or runoff of pesticides. If leaching or runoff is found to occur, steps should be taken to prevent further contamination;

(3) Use integrated pest management (IPM) strategies that:

(a) apply pesticides only when an economic benefit to the producer will be achieved (i.e. applications based on economic thresholds); and

(b) apply pesticides efficiently and at times when runoff losses are unlikely;

(4) When pesticides applications are necessary and a choice of registered materials exists, consider the persistence, toxicity, runoff potential, and leaching potential of products in making a selection;

(5) Periodically calibrate pesticide spray equipment, and

(6) Use anti-backflow devices on hoses used for filling tank mixtures.

This measure applies to activities associated with **application of pesticides on agricultural land.**

1. Existing Programs

Pesticide Control Laws (7 MRSA § 601 et seq.; 22 MRSA § 1471-A et seq.)

It is state policy to regulate the sale and application of chemical insecticides, fungicides, herbicides and other chemical pesticides, and to regulate the return and disposal of limited and restricted use pesticide containers. It is unlawful to distribute any pesticide which has not been registered with the state, is not properly labeled or is not in the approved form and container. It is also unlawful for any person to:

- use a pesticide contrary to its approved labeling;

- handle, store, transport, display or distribute a pesticide in such a manner as to endanger man and his environment or endanger food, feed or any other products that may be transported, stored, displayed, or distributed with such pesticides.

- handle, store, transport, display or distribute a pesticide in such a manner as may cause injury to humans, vegetation, crops, livestock, wildlife, beneficial insects or pollute any water supply or waterway;

- fail or refuse to comply with state pesticide regulations; or

- apply a pesticide in any manner contrary to rules adopted by the state relating to pesticide drift.

The Board of Pesticides Control (BPC) has the authority to issue stop sale, use or removal orders if a pesticide is being distributed, transported, stored or used in violation of state law or BPC regulations. Commercial pesticide applicators, private pesticide applicators, restricted use pesticide dealers, spotters and monitors must be certified and licensed by the BPC. General Use Pesticide Dealers must obtain a license from the BPC. These certificates and licenses require compliance with standards of competency in the distribution and use of pesticides. A certification or license may be revoked of suspended by the BPC if, among other things, the licensee or certificate holder:

- used or supervised the use of a pesticide in a careless, negligent or faulty manner or in a manner which is potentially harmful to the public health, safety or welfare or the environment;

- stored, transported or otherwise distributed pesticides in a careless, faulty or negligent manner or in a manner which is potentially harmful to the environment or the public health, safety or welfare;

- violated state law or any rules or regulations of the BPC; or

- has made a pesticide recommendation, use or application, or has supervised the application such use or application, in consistent with the labelling or restrictions imposed by the BPC.

The licensing program for private applicators includes training on water resource protection, integrated pest management, and site specific pesticide evaluations and pesticide selection. In order to be relicensed, an applicator is required to attend a certain number of these training sessions. In addition, the University of Maine Cooperative Extension Service conducts many of these training sessions which include Integrated Pesticide Management techniques, sprayer calibration clinics and drift management techniques. Calibration of spray equipment and anti-siphoning devices are also required under BPC regulations.

No person may apply or cause to be applied a pesticide to the waters of the state without obtaining a waste discharge license from the Department of Environmental Protection. No person shall apply pesticides to any area of the state which is designated by the BPC as a critical area, except as directed by the BPC. The BPC may designate critical areas which shall include areas where pesticide use would jeopardize endangered species or critical wildlife habitat, present unreasonable threat to the quality of a water supply, be contrary to a master plan promulgated by a state or federal agency, or would otherwise result in unreasonable adverse effects on the public health, welfare or the environment.

The regulations require pesticide containers to returnable. They establish deposit amounts, sticker requirements, triple rinse or equivalent procedures, and refund places and procedures.

The pesticide regulations require equipment operation and maintenance measures to prevent "off target" discharges, including leaks and spills.

Pesticide dealers must maintain records of pesticide distribution for two years. Commercial applicators shall keep records for at least two years of the amount and type of pesticides used, the area of pesticide use, and such other information as the BPC may require. Private applicators applying pesticides with powered equipment must also keep similar records for the same two year time period.

The BPC may enter upon public or private property at reasonable times for the purpose of inspecting or investigating pesticide equipment or storage and use operations, investigating complaints of injury to persons or land from pesticides, or sampling pesticide residues on crops, foliage, soil, water or elsewhere in the environment.

Any person who violates these law or any rules, orders, decisions, certificates or licenses is subject to a

civil penalty of up to $1500 for the first violation and up to $4000 for every subsequent violation. However, private applicators who violate the law requiring return of limited and restricted use pesticide containers or any rule regarding record keeping for pesticide applications are only subject to a civil penalty of $500 for the first violation and $1000 for any subsequent violation. Any person who intentionally or knowingly violates this law or rules issued thereunder commits a crime punishable by a fine of up to $7000 and/or a prison term of up to 30 days. The BPC may also bring a legal action to enjoin the violation of pesticide registration laws and regulations.

Waste Discharge License (38 MRSA § 411 et seq.)

A license is required for any direct or indirect discharge of any pollutant into the waters of the state. While an exemption is granted for agricultural erosion if an erosion and sedimentation plan has been prepared, there is no requirement for a nutrient management plan.

Maine Strategy for Managing Nonpoint Source Pollution from Agricultural Sources and Best Management System Guidelines

This manual describes best management practices for agriculture which are combined to form a "best management system". It then describes the state strategy for implementation. This strategy emphasizes education and technical assistance, but also recognizes enforcement as a necessary backup to these efforts. This strategy includes a pesticide best management system which incorporates the best management practices developed by the U.S. Soil Conservation Service.

2. Management Issues

1. Consider expanding the reporting requirements for pesticides, as the State has limited information on the extent of pesticide use or impacts on waters of the state.

2. Consider expanding education or training programs for unlicensed general use pesticide users.

3. Consider ways of funding more technical assistance and education for all applicators in integrated pest management.

E. Grazing Management

Protect range, pasture and other grazing lands:

(1) By implementing one or more of the following to protect sensitive areas (such as streambanks, wetlands, estuaries, ponds, lake shores, and riparian zone):

(a) Exclude livestock;

(b) Provide stream crossings or hardened watering access for drinking,

(c) Provide alternative drinking water locations,

(d) Locate salt and additional shade, if needed, away from sensitive areas, or

(e) Use improved grazing management (e.g. herding)to reduce the physical disturbance and reduce direct leading of animal waste and sediment caused by livestock; and

(2) By achieving either of the following on all range, pasture, and other grazing lands NOT addressed under (1):

(a) Implement the range and pasture components of a Conservation Management System (CMS) as defined in the Field Office Technical Guide of the USDA-SCS by applying the progressive planning approach of the USDA-Soil Conservation Service (SCS) to reduce erosion, or

(b) Maintain range, pasture, and other grazing lands in accordance with activity plans established by either the Bureau of Land Management of the U.S. Dept. of the Interior or the Forest Service of USDA.

This measure applies to activities on **range, irrigated and non-irrigated pasture, and other grazing land used by domestic livestock.**

1. Existing Programs

Waste Discharge License (38 MRSA § 411 et seq.)

A license is required for any direct or indirect discharge of any pollutant into the waters of the state. While an exemption is granted for agricultural erosion if an erosion and sedimentation plan has been recommended by the local Soil and Water Conservation District and has been approved by the Commissioner of Environmental Protection, there is no specific requirement for pasture management.

Mandatory Shoreland Zoning (38 MRSA § 483-A)

The guidelines promulgated by DEP to serve as the minimum shoreland zoning ordinance include a requirement for agriculture in the shoreland zone (250 ft from the high water line) that new livestock grazing areas shall not be permitted within 100 ft of the high water line of great ponds classified GPA, within 75 ft of other water bodies, nor within 25 ft of tributary streams and wetlands. Existing nonconforming practices

excepted as long as in accordance with a Soil and Water Conservation Plan.

Maine Strategy for Managing Nonpoint Source Pollution from Agriculture: Best Management Practices

This manual describes best management practices for agriculture which are combined to form a "best management system". It then describes the state strategy for implementation. This strategy emphasizes education and technical assistance, but also recognizes enforcement as a necessary backup to these efforts. This strategy includes a manure best management system and a sediment best management system that incorporate best management practices developed by the U.S. Soil Conservation Service.

Nuisance Law (17 MRSA § 2701 et seq.)

The Department of Agriculture must investigate and report on complaints of improper manure handling and water pollution by farms. A farm which conforms to the best management practices, as determined by the Department of Agriculture, is not liable as a public or private nuisance. If the farmer does not adopt generally accepted manure handling practices and/or best management practices, the matter shall be referred to the Attorney General for consideration of an action to abate the nuisance. If the Department finds that a case of improper manure handling may have affected water quality, the Commissioner of Environmental Protection shall also be notified and may respond as appropriate.

A civil action for damages may be brought by any person injured by a nuisance. The Attorney General may also bring civil actions to abate public nuisances. A nuisance is defined in part as "corrupting or rendering unwholesome or impure the water of a river, stream, pond, or aquifer".

The Department of Agriculture has a system for receiving and investigating nuisance complaints. Of the approximately 150 complaints received, 90% are considered legitimate complaints about nuisance farming practices. The department has been able to remedy over 95% of these complaints through negotiations with the farmer on which BMP's should be implemented in a given situation. The remaining few complaints have been successfully remedied through further proceedings, either through an official letter from the department or a hearing to determine the legitimacy of the complaint and to determine a remedy. No complaints have ever needed to be sent to the Attorney General's Office for further enforcement.

Soil and Water Conservation Districts (12 MRSA § 2 et seq.)

State policy promotes soil and water conservation for agriculture; control and prevent soil erosion; control floods; protect navigability; and preserve natural resources. SWCD's have power to carry out measures to prevent flooding; to enter erosion control agreements with landowners; and to prepare and implement comprehensive plans to control and prevent soil erosion and flooding.

Part of the comprehensive farm management program administered by the districts includes grazing management, especially exclusion of animals from surface waters and providing alternative water systems.

2. Management Issues

1. Consider a study to determine whether the soil and water conservation plans required by Shoreland Zoning ordinance include best managemnt practices for grazing and whether these plans are being implemented.

2. Consider requiring grazing management standards or plans for areas outside the shoreland zone.

3. Consider amending the agricultural nuisance shield law (i.e. "Right to Farm" law) to allow the application of site specific best management practices in response to complaints about grazing problems in surface and groundwater. The present law only requires this for manure management.

4. Consider some grazing standards as a condition for the exemption to the waste discharge license.

F. Irrigation Water Management

To reduce nonpoint source pollution of surface waters caused by irrigation:

(1) Operate the irrigation system so that the timing and amount of irrigation water applied match crop water needs. This will require, as a minimum: (a) the accurate measurement of soil-water depletion volume and the volume of irrigation water applied, and (b) uniform application of water.

(2) When chemigation is used, include backflow preventers for wells, minimize the harmful amounts of chemigated waters that discharge from the edge of the field, and control deep percolation. In cases where chemigation is performed with furrow irrigation systems, a tailwater management system may be needed.

The following limitations and special conditions apply:

(1) In some locations, irrigation return flows are subject to other water rights or are required to maintain stream flow. In these special cases, on-site reuse could be precluded and would not be considered part of the management measure for such locations.

(2) By increasing the water use efficiency, the discharge volume from the system will usually be reduced. While the total pollutant load may be reduced somewhat, there is the potential for an increase in the concentration of pollutants in the discharge. In these special cases, where living resources or human health may be adversely affected and where other management measures (nutrients and pesticides) do not reduce concentrations in the discharge, increasing water use efficiency would not be considered part of the management measure.

(3) In some irrigation districts, the time interval between the order for and the delivery of irrigation water to the farm may limit the irrigator's ability to achieve the maximum on-farm application efficiencies that are otherwise possible.

(4) In some locations, leaching is necessary to control salt in the soil profile. Leaching for salt control should be limited to the leaching requirement for the root zone.

(5) Where leakage from delivery systems or return flows supports wetlands or wildlife refuges, it may be preferable to modify the system to achieve a high level of efficiency and then divert the "saved water" to the wetland or wildlife refuge. This will improve the quality of water delivered to wetlands or wildlife refuges by preventing the introduction of pollutants from irrigated lands to such diverted water.

(6) In some locations, sprinkler irrigation is used for frost or freeze protection, or for crop cooling. In these special cases, applications should be limited to the amount necessary for crop protection, and applied water should remain on-site.

This measure will not be included in the plan because irrigation is not widely used in Maine, due to the climate, and is thus irrigation activities are not considered a "significant" threat to marine waters.

FORESTRY

A. Preharvest Planning

Perform advance planning for forest harvesting that includes the following elements where appropriate:

(1) Identify the area to be harvested including location of waterbodies and sensitive areas such as wetlands, threatened or endangered aquatic species habitat areas, or high erosion hazard areas (landslide prone) within the harvest area.

(2) Time the activity for the season or moisture conditions when the least impact occurs.

(3) Consider potential water quality impacts and erosion and sedimentation control in the selection of silvicultural and regeneration systems, especially for harvesting and site preparation.

(4) Reduce the risk of occurrence of landslides and severe erosion by identifying high erosion hazard areas and avoiding harvesting in such areas to the extent practicable.

(5) Consider additional contributions from harvesting or roads to any known existing water quality impairments or problems in watersheds of concern.

Perform advance planning for forest road systems that includes the following elements where appropriate:

(1) Locate and design road systems to minimize, to the extent practicable, potential sediment generation and delivery to surface waters. Key components are:

- *locate roads, landings and skid trails to avoid to the extent practicable steep grades and steep hillslope areas, and to decrease the number of stream crossings;*
- *avoid to the extent practicable locating new roads and landings in Streamside Management Areas (SMA's); and*
- *determine road usage and select the appropriate road standard.*

Continued...

(2) Locate and design temporary and permanent stream crossings to prevent failure and control impacts from the road system. Key components are:

- *size and site crossing structures to prevent failure;*
- *for fish-bearing streams, design structures to facilitate fish passage.*

(3) Ensure that the design of road prism and the road surface drainage are appropriate to the terrain and that road surface design is consistent with the road drainage structures.

(4) Use suitable materials to surface roads planned for all weather use to support traffic.

(5) Design road systems to avoid high erosion or landslide hazard areas. Identify these areas and consult a qualified specialist for design of any roads that must be constructed through these areas.

Each state should develop a process (or utilize an existing process) that ensures that the management measures in this chapter are implemented. Such a process should include appropriate notification, compliance audits, or other mechanisms for forestry activities with the potential for significant adverse nonpoint source effects based on the type and size of operation and the presence of stream crossings or SMA's.

The **planning** components of this measure apply to **commercial harvesting** on lots **greater than 5 acres**. The **implementation** component of this measure applies to harvesting and road construction activities that are determined by the State to be of **sufficient size to potentially impact receiving waters or involve SMA's or stream crossings**.

1. Existing Programs

Forest Practices Act (12 MRSA § 8867 et seq.)

Any landowner who intends to harvest forest products for commercial purposes must file a notice with the Maine Forest Service prior to starting the harvesting operation. This notice describes the size and location of the harvest. Exceptions to this requirement include harvests for personal use; pre-commercial silvicultural practices; and harvesting of Christmas trees and boughs, maple syrup, cones and other seed products.

Clear cuts greater than 50 acres in size must have a forest management plan prepared by a professional forester that outlines the activities to regenerate, improve and harvest timber which conforms to the revegetation and clearcutting standards. This plan shall also include the location of water bodies and wildlife habitats identified by the Department of Inland Fish and Wildlife. A plan may also include schedules and recommendations for timber stand improvement, harvesting plans and recommendations for regeneration activities.

Tree Growth Tax Law (36 MRSA § 565 et seq.)

This law allows a landowner of more than 10 acres of forested land that is held for potential commercial use to obtain a revaluation of his property based upon the forest product value, rather than the development value. This results in a savings on the local property tax which acts as an incentive for landowners to protect the forest land base. One requirement for this program is that the landowner must file an affidavit with the tax

assessor that a forest management plan has been prepared by a licensed professional forester which outlines the intended activities to regenerate, improve and harvest timber. This plan must also include the location of water bodies and wildlife habitat.

The Guidelines for Forest Management and Harvest Management Plans require mapping the area to be harvested, including the location of waterbodies and wildlife habitat. They also require outlining the activities to regenerate, improve and harvest the timber. This outline is recommended to include site specific management actions for site preparation, tree planting, thinning, pruning, direct seeding, site conversion, weeding, cleaning, timber harvesting and timber salvage. A harvest plan is also required which shows the time schedule and approximate volume to be removed, and makes recommendations to insure regeneration after the harvest.

Land Use Regulation (12 MRSA § 681 et seq.)

The Land Use Regulation Commission (LURC) regulates timber harvesting activities in unorganized territories in the State. These areas are zoned into three districts: Development, Management and Protection. Timber harvesting is allowed in all Management districts without regulation. In certain subdistricts (P-FW, P-GP, P-SL, P-WL), timber harvesting must comply with certain standards. Finally, A permit is required for timber harvesting in Development districts and certain Protection subdistricts (P-MA, P-RR and P-SG). The permit application for forestry operations in the regulated areas requires, among other things, mapping and description of the harvest and existing and proposed roads.

Erosion and Sediment Control Handbook for Maine Timber Harvesting:
Best Management Practices (June 1991) and Best Management Practices Field Handbook (Sept. 1992)

These publications describe best management practices for timber harvesting. Among these practices is the universal recommendation that harvests and road construction activities should be planned according to the same principles set out in this management measure.

2. Management Issues

1. Consider an evaluation of these planning programs to determine whether plans are in fact being prepared by forest land owners and whether the plans include best management practices for preharvest planning.

2. Consider incorporating the General Planning section of the best management practices manual into the body of the manual, not just as part of the introduction.

3. Consider a planning requirement for commercial lots less than 50 acres.

4. Consider referring to the best management practices manual in the Notice of Intent to Cut.

5. Consider requiring some preharvest planning best management practices into the requirements for Management Plans required by the Forest Practices Act and the Tree Growth Tax law.

6. Consider ways of adding staff to educate/enforce best management practices.

B. Streamside Management Areas (SMAs)[1]

Establish and maintain a streamside management area along surface waters, which is sufficiently wide and which includes a sufficient number of canopy species to buffer against detrimental changes in the temperature regime of the waterbody, to provide bank stability, and to withstand wind damage. Manage the SMA in such a way as to protect against soil disturbance in the SMA and delivery to the stream of sediments and nutrients generated by forestry activities, including harvesting. Manage the SMA canopy species to provide a sustainable source of large woody debris needed for instream channel structure and aquatic species habitat.

This measure applies to surface waters **bordering or within** the area of operation. SMA's should be established for **perennial** waterbodies **and** for **intermittent** streams that flow during the time of operation.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-Q et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A state permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer; will not unreasonably interfere with the natural flow of the water; and will not violate any state water quality law including those governing classification of state waters. This permitting authority may be delegated to municipalities that meet certain requirements.

A permit is not required for forestry operations in forested wetlands if:

- the activity results in a forest stand that meets minimum stocking requirements;

- the activity meets permit-by-rule standards for soil disturbance and stream crossings;

- the forested wetland is not mapped as a significant wildlife habitat; and

- any road construction is used primarily for forestry operations and not development.

A Permit-by-Rule is available for activities that involve filling, excavating or scraping land 25-100 feet of a water body or wetland, except activities in sand dunes, if they comply with a number of standards. These standards require the following measures:

a. photographs of the site must be taken before and after the activity has commenced;

b. a vegetated buffer strip is maintained 25 ft from high-water mark and 100 ft on slopes greater than 20%, except for new road crossings and other activities that are governed by the standards for those specific

[1] A Streamside Management Area is generally considered to be a strip of land on either side of a stream that is managed to protect the values of the stream.

activities;

c. existing vegetation within the 25 ft setback shall remain undisturbed;

d. hay bales or silt fencing must be placed in setback areas which are not vegetated;

e. no soils shall be disturbed when saturated due to rain or snow;

f. erosion control measures shall be in place before starting work;

g. all disturbance activities must begin and end within a one month time frame;

h. disturbed soils shall be stabilized upon completion of work or suspensions longer than 1 week;

i. hay or straw mulch shall be applied at a rate of 1 bale per 500 sq. ft.;

j. mulch shall be anchored;

k. additional erosion and sediment control measures shall be taken when erosion or sedimentation occurs;

l. temporary stabilization measures shall continue until permanent stabilization measures are in place;

m. permanent revegetation shall occur immediately upon project completion or, if temporary measures were used, within 30 days;

n. lime and fertilizer shall be applied in limited amounts; and

o. erosion and sedimentation control measures should comply with Soil Conservation Service and/or Soil and Water Conservation District specifications.

Land Use Regulation (12 MRSA § 681 et seq.)

The Land Use Regulation Commission (LURC) regulates timber harvesting activities in unorganized territories in the State. These areas are zoned into three districts: Development, Management and Protection. Timber harvesting is allowed in all Management districts without regulation. In certain subdistricts (P-FW, P-GP, P-SL, P-WL), timber harvesting must comply with certain standards. Finally, A permit is required for timber harvesting in Development districts and certain Protection subdistricts (P-MA, P-RR and P-SG). The standards for timber harvesting include the following:

a. skid roads and trails may not use unfrozen stream beds in protection districts except to cross streams via culvert or bridge which complies with the stream crossing standards;

b. clearcuts are prohibited within 50 feet of the high water mark in P-SL1 and P-GP subdistricts and timber harvesting shall be limited within this area to protect water quality and "reasonably avoid sedimentation" of surface waters;

c. the size of clearcuts are limited in areas greater than 50 feet from the high water mark of streams;

d. total volume of harvesting is limited in ten year periods;

e. slash is prohibited within 50 ft. of high water in streams and great ponds in protection districts, and is limited to 4 ft above the ground;

f. vegetated filter strips must be maintained between machinery operations and water bodies;

g. slash may not be left below high water;

h. skid trail and roads may not use unfrozen stream channels in protection districts except to cross in the shortest possible route, unless the crossing uses a culvert or bridge in accordance with the requirements for stream crossings and then only in stream beds composed of gravel, rock or other hard surface;

i. skid roads and trails shall be located and designed to divert water and prevent direct runoff to streams;

j. timber harvests in shoreland protection subdistricts upstream from the point where they drain 300 acres or less may be excepted from erosion control requirements if they do not cause sedimentation in excess of 25 Jackson Turbidity Units measured where such stream drains one sq. mi. or more;

k. harvesting in shoreland protection subdistricts downstream from the point where they drain 300 acres or more and along standing bodies of water shall maintain shading of surface waters;

l. written notice of timber harvests shall be given to LURC prior to commencement; and

m. other measures shall be taken in order to "reasonably avoid sedimentation of surface waters".

Mandatory Shoreland Zoning (38 MRSA § 483-A)

All municipalities are required to adopt a shoreland zoning ordinance which regulates activities in the area 250 ft from the normal high-water line of great ponds, tidal waters wetlands, and 75 ft from streams. The guidance issued by DEP for the required minimum shoreland zoning ordinance includes the following controls on timber harvesting in the shoreland zone:

1. In a shoreland zone surrounding a great pond within a resource protection district, timber harvesting shall be limited to the following:

   a. no harvesting except to remove safety hazards within 75 ft of the high water mark.

   b. basal area requirements for areas between 75 ft and 250 ft from the high water mark.

2. In other shoreland zone areas, including coastal waters and wetlands, timber harvesting shall conform to the following provisions:

   a. Selective cutting of no more than 40% of the total volume of trees 4-in. in diameter at breast height (4.5 ft) within a 10 year period. In addition,

      i. within 100 ft of a great pond classified as GPA or a river flowing to a great pond classified GPA, and within 75 ft of other water bodies and wetlands, there shall be no clearcut openings and well distributed stand of trees shall be maintained; and

      ii. in shoreland areas outside those noted above, clearcut openings shall not be greater than 10,000 sq ft in the forest canopy. All clearcut openings greater than 5000 sq ft shall be at least

100 feet apart.

b. Timber harvest exceeding the 40% maximum above may be allowed upon application to the planning board including a forest management plan prepared by a licensed Maine professional forester.

***

f. Skid trail approaches to water crossings shall be located and designed so as to prevent water runoff from directly entering the water. Upon completion of the harvest, all temporary bridges and culverts shall be removed and areas of exposed soil revegetated.

g. Except for water crossings, all skid trails and other sites where the operation of timber harvest machinery exposes mineral soils, a 75 ft unscarified strip of vegetation shall be maintained on slopes of up to 10% between the exposed mineral soils and the upland edge of water bodies or wetlands. This strip shall increase by 20 ft for every increase in slope of 10%.

2. Management Issues

1. Consider increasing the 25 ft buffer on slopes less than 20% under the NRPA.

C. Road Construction/Reconstruction

(1)	*Follow preharvest planning (as described under Management Measure A) when constructing or reconstructing the roadway.*
(2)	*Follow designs planned under Management Measure A for road surfacing and shaping.*
(3)	*Install road drainage structures according to designs planned under Management Measure A and regional storm return period and installation specifications. Match these drainage structures with terrain features and with road surface and prism designs.*
(4)	*Guard against the production of sediment when installing stream crossings.*
(5)	*Protect surface waters from slash and debris material from roadway clearing.*
(6)	*Use straw bales, silt fences, mulching, or other favorable practices on disturbed soils on unstable cuts, fills, etc.*
(7)	*Avoid constructing new roads in SMAs to the extent practicable.*

This measure applies to **all** lands where **forestry operations are planned or conducted**. This includes the following road construction activities:

(1) Clearing phase: clearing to remove trees and woody vegetation from the road right-of-way

(2) Pioneering phase: excavating and filling the slope to establish the road centerline and approximate grade.

(3) Construction phase: final grade and road prism construction and bridge, culvert, and road drainage installation.

(4) Surfacing phase: placement and compaction of the roadbed, roadfill compaction, and surface placement and compaction.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-Q et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer; will not unreasonably interfere with the natural flow of the water; and will not violate any state water quality law including those governing classification of state waters. This permitting authority may be delegated to municipalities that meet certain requirements.

A permit is not required for forestry operations in forested wetlands if:

- the activity results in a forest stand that meets minimum stocking requirements;

- the activity meets permit-by-rule standards for soil disturbance and stream crossings;

- the forested wetland is not mapped as a significant wildlife habitat; and

- any road construction is used primarily for forestry operations and not development.

A Permit-by-Rule is available for activities that involve filling, excavating or scraping land 25-100 feet of a water body or wetland, except activities in sand dunes, if they comply with a number of standards. These standards require the following measures:

a. photographs of the site must be taken before and after the activity has commenced;

b. a vegetated buffer strip is maintained 25 ft from high-water mark and 100 ft on slopes greater than 20%, except for new road crossings and other activities that are governed by the standards for those specific activities;

c. existing vegetation within the 25 ft setback shall remain undisturbed;

d. hay bales or silt fencing must be placed in setback areas which are not vegetated;

e. no soils shall be disturbed when saturated due to rain or snow;

f. erosion control measures shall be in place before starting work;

g. all disturbance activities must begin and end within a one month time frame;

h. disturbed soils shall be stabilized upon completion of work or suspensions longer than 1 week;

i. hay or straw mulch shall be applied at a rate of 1 bale per 500 sq. ft.;

j. mulch shall be anchored;

k. additional erosion and sediment control measures shall be taken when erosion or sedimentation occurs;

l. temporary stabilization measures shall continue until permanent stabilization measures are in place;

m. permanent revegetation shall occur immediately upon project completion or, if temporary measures were used, within 30 days;

n. lime and fertilizer shall be applied in limited amounts; and

o. erosion and sedimentation control measures should comply with Soil Conservation Service and/or Soil and Water Conservation District specifications.

A permit is required for stream crossings in outstanding river segments; rivers subject to Shoreland Zoning; wetlands greater than 10 acres; and great ponds. Otherwise, a Permit-By-Rule is available for stream crossings via bridge or culvert for all streams, rivers or brooks. These standards require the following measures to be taken.

a. spans over navigable waters require a height of feet above high water for navigation;

b. for streambeds with a slope greater than 2%, a bridge or pipe arch is required in order to avoid disturbing the natural gradient;

c. sideslope gradients must be maintained between 3:1 and 1.5:1;

d. alteration of a wetland is allowed for road crossings up to 100 feet from the high water mark;

e. bridges and culverts must have a cross sectional size 2.5 times greater than the stream channel or big enough to allow for passage of 10 year flood waters, except these may be smaller if accompanied by techniques which mitigate erosion and sedimentation (e.g. water bars, road dips, or removal when frozen);

f. road surfaces shall be constructed to prevent erosion of sediment into the protected natural resource;

g. vegetated filter strips shall be used adjacent to crossing approaches;

h. stream fords shall be lined with natural or synthetic materials to prevent erosion;

i. stream fords shall allow fish passage and normal stream flow;

j. culverts shall be as short as possible, follow the alignment of the stream gradient, outflow at or below stream bed level, be seated on firm ground or synthetic material, covered by compacted soil, have stabilized inlet and outlets;

k. no soil shall be disturbed when saturated due to rain or snow;

l. erosion controls measures shall be installed and maintained prior to commencing an activity;

m. soil shall be stabilized immediately upon completion of the activity;

n. hay or straw mulch, when used, shall be applied at a rate of one bale per 500 sq. ft.;

o. mulch shall be anchored;

p. other techniques shall be used to prevent sedimentation where necessary (i.e. erosion occurs of water is discolored);

q. permanent revegetation of disturbed areas is required upon project completion (Note: erosion and sedimentation control measures should comply with the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices);

r. No wheeled or tracked equipment shall be operated in the water except to cross streams on rock, reaching into water from shore, pumps or boats;

s. no work shall be done during times of high water, except to protect work in progress;

t. diversions are required for work in streams less than 3 ft deep; and

u. lime and fertilizer application rates are limited.

Land Use Regulation (12 MRSA § 681 et seq.)

The Land Use Regulation Commission regulates road and water crossings and timber harvesting in unorganized territories. The LURC land use standards require road construction and maintenance activities in certain zoning districts (P-WL, P-SL, P-FP, P-GP and all Development Subdistricts) to comply with specified guidelines including:

a. soil stabilization within 75 feet of a waterbody;

b. slope limits;

c. roads and drainage ditch filter strips; and

d. drainage ditch specifications.

The following types of requirements apply to water crossings when surface waters are unfrozen:

a. Bridges and culverts size;

b. culvert design specifications;

c. ditch maintenance requirements; and

d. other measures which "reasonably avoid sedimentation of surface waters".

Erosion and Sediment Control Handbook for Maine Timber Harvesting:
Best Management Practices (June 1991) and Best Management Practices Field Handbook (Sept. 1992)

These publications describe best management practices for timber harvesting which include road construction. These manuals include the practices suggested by EPA for road construction.

2. Management Issues

1. Consider changing the best management practice for Hay Bales and/or silt fencing in ditches so that bales/fencing are no longer placed in the ditch, but rather are placed parallel to the uphill edge of the ditch.

2. Consider a best management practice for stabilizing dirt road intersections with improved roads.

3. Consider a best management practice to use slash as erosion control at the base of road fill.

4. Consider a best management practice for road ditch turnouts and establishing a maximum distance between ditch relief.

D. Road Management

(1) Avoid using roads where possible for timber hauling or heavy traffic during wet or thaw periods on roads not designed and constructed for these conditions.

(2) Evaluate the future need for a road and close roads that will not be needed. Leave closed roads and drainage channels in a stable condition to withstand storms.

(3) Remove drainage crossings and culverts if there is a reasonable risk of plugging of failure from lack of maintenance.

(4) Following completion of harvesting, close and stabilize temporary spur roads and seasonal roads to control and direct water away from the roadway. Remove all temporary stream crossings.

(5) Inspect roads to determine the need for structural maintenance. Conduct maintenance practices, when conditions warrant, including cleaning and replacement of deteriorated structures and erosion controls, grading or seeding of road surfaces, and, in extreme cases, slope stabilization or removal of road fills where necessary to maintain structural integrity.

(6) Conduct maintenance activities, such as dust abatement, so that chemical contaminants or pollutants are not introduced into surface waters to the extent practicable.

(7) Properly maintain permanent stream crossings and associated fills and approaches to reduce the likelihood (a) that stream overflow will divert onto roads, and (b) that fill erosion will occur if the drainage structures become obstructed.

This measure applies to **active and inactive** roads constructed for forestry purposes.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-Q et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer; will not unreasonably interfere with the natural flow of the water; and will not violate any state water quality law including those governing classification of state waters. This permitting authority may be delegated to municipalities that meet certain requirements.

A permit is not required for forestry operations in forested wetlands if:

- the activity results in a forest stand that meets minimum stocking requirements;

- the activity meets permit-by-rule standards for soil disturbance and stream crossings;

- the forested wetland is not mapped as a significant wildlife habitat; and

- any road construction is used primarily for forestry operations and not development.

A Permit-by-Rule is available for activities that involve filling, excavating or scraping land 25-100 feet of a water body or wetland, except activities in sand dunes, if they comply with a number of standards. These standards require the following measures:

a. existing vegetation within the 25 ft setback shall remain undisturbed;

b. disturbed soils shall be stabilized upon completion of work or suspensions longer than 1 week; hay or straw mulch shall be applied at a rate of 1 bale per 500 sq. ft.;

c. mulch shall be anchored;

d. additional erosion and sediment control measures shall be taken when erosion or sedimentation occurs;

e. temporary stabilization measures shall continue until permanent stabilization measures are in place;

f. permanent revegetation shall occur immediately upon project completion or, if temporary measures were used, within 30 days;

g. erosion and sedimentation control measures should comply with Soil Conservation Service and/or Soil and Water Conservation District specifications.

The Permit-by-Rule standards for stream crossings via bridge or culvert apply to all streams rivers or brooks, except outstanding river segments, rivers subject to Shoreland Zoning, freshwater wetlands greater than 10 acres and great ponds. These standards require the following measures to be taken.

a. erosion controls measures shall be installed and maintained prior to commencing an activity;

b. soil shall be stabilized immediately upon completion of the activity;

c. hay or straw mulch, when used, shall be applied at a rate of one bale per 500 sq. ft.;

d. mulch shall be anchored;

e. other techniques shall be used to prevent sedimentation where necessary (i.e. erosion occurs of water is discolored);

f. permanent revegetation of disturbed areas is required upon project completion (Note: erosion and sedimentation control measures should comply with the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices);

g. No wheeled or tracked equipment shall be operated in the water except to cross streams on rock, reaching into water from shore, pumps or boats;

h. no work shall be done during times of high water, except to protect work in progress;

Land Use Regulation (12 MRSA § 681 et seq.)

The Land Use Regulation Commission regulates road and water crossings and timber harvesting in unorganized territories. The LURC land use standards require road construction and maintenance activities in wetlands, shorelands and great pond zones and all Development Subdistricts) to comply with specified guidelines including:

- soil stabilization within 75 feet of a waterbody;

- slope limits;

- roads and drainage ditch filter strips; and

- drainage ditch specifications.

The following types of requirements apply to water crossings when surface waters are unfrozen:

- Bridges and culverts size;

- culvert design specifications;

- ditch maintenance requirements; and

- other measures which "reasonably avoid sedimentation of surface waters".

2. Management Issues

1. Consider developing a best management practice for dust control on roads near water bodies.

2. Consider developing a best management practice for emergency overflows for failed stormwater control structures in permanent roads.

3. Consider developing a best management practice for determining when a road should be closed.

E. Timber Harvesting

The Timber harvesting management measure consists of implementing the following:

(1) Timber harvesting operations with skid trails or cable yarding follow layouts determined under Management Measure A.
(2) Install landing drainage structures to avoid sedimentation to the extent practicable. Disperse landing drainage over sideslopes.
(3) Construct landings away from steep slopes and reduce the likelihood of fill slope failures. Protect landing surfaces used during wet periods. Locate landings outside of SMAs.
(4) Protect stream channels and significant ephemeral drainages from logging debris and slash material.
(5) Use appropriate areas for petroleum storage, dispensing. Establish procedures to contain and treat spills. Recycle or properly dispose of all waste materials.

For cable yarding:

(1) Limit yarding corridor gouge or soil plowing by properly locating cable yarding landings.

(2) Locate corridors for SMAs following Management Measure B.

For groundskidding:

(1) Within SMAs, operate groundskidding equipment only at stream crossings to the extent practicable. In SMAs, fell and endline trees to avoid sedimentation.

(2) Use improved stream crossings for skid trails which cross flowing drainages. Construct skid trails to disperse runoff and with adequate drainage structures.

(3) On steep slopes, use cable systems rather than groundskidding where groundskidding may cause excessive sedimentation.

This measure applies to all **harvesting, yarding, and hauling** conducted as part of normal forestry operations on harvest units **larger than 5 acres**. This measure does **NOT** apply to harvesting conducted for precommercial thinnings or noncommercial firewood cutting.

As cable yarding is not conducted in Maine, the components of this measure which address this activity are not applicable to this state.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-Q et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer; will not unreasonably interfere with the natural flow of the water; and will not violate any state water quality law including those governing classification of state waters. This permitting authority may be delegated to municipalities that meet certain requirements.

A permit is not required for forestry operations in forested wetlands if:

- the activity results in a forest stand that meets minimum stocking requirements;

- the activity meets permit-by-rule standards for soil disturbance and stream crossings;

- the forested wetland is not mapped as a significant wildlife habitat; and

- any road construction is used primarily for forestry operations and not development.

A Permit-by-Rule is available for activities that involve filling, excavating or scraping land 25-100 feet of a water body or wetland, except activities in sand dunes, if they comply with a number of standards. These standards require the following measures:

a. photographs of the site must be taken before and after the activity has commenced;

b. a vegetated buffer strip is maintained 25 ft from high-water mark and 100 ft on slopes greater than 20%, except for new road crossings and other activities that are governed by the standards for those specific activities;

c. existing vegetation within the 25 ft setback shall remain undisturbed;

d. hay bales or silt fencing must be placed in setback areas which are not vegetated;

e. no soils shall be disturbed when saturated due to rain or snow;

f. erosion control measures shall be in place before starting work;

g. all disturbance activities must begin and end within a one month time frame;

h. disturbed soils shall be stabilized upon completion of work or suspensions longer than 1 week;

i. hay or straw mulch shall be applied at a rate of 1 bale per 500 sq. ft.;

j. mulch shall be anchored;

k. additional erosion and sediment control measures shall be taken when erosion or sedimentation occurs;

l. temporary stabilization measures shall continue until permanent stabilization measures are in place;

m. permanent revegetation shall occur immediately upon project completion or, if temporary measures were used, within 30 days;

n. lime and fertilizer shall be applied in limited amounts; and

o. erosion and sedimentation control measures should comply with Soil Conservation Service and/or Soil and Water Conservation District specifications.

Land Use Regulation (12 MRSA § 681 et seq.)

The Land Use Regulation Commission (LURC) regulates timber harvesting activities in unorganized territories in the State. These areas are zoned into three districts: Development, Management and Protection. Timber harvesting is allowed in all Management districts without regulation. In certain subdistricts (P-FW, P-GP, P-SL, P-WL), timber harvesting must comply with certain standards. Finally, A permit is required for timber harvesting in Development districts and certain Protection subdistricts (P-MA, P-RR and P-SG). The standards for timber harvesting include the following:

a. skid roads and trails may not use unfrozen stream beds in protection districts except to cross streams via culvert or bridge which complies with the stream crossing standards;

b. clearcuts are prohibited within 50 feet of the high water mark in P-SL1 and P-GP subdistricts and timber harvesting shall be limited within this area to protect water quality and "reasonably avoid sedimentation" of surface waters;

c. the size of clearcuts are limited in areas greater than 50 feet from the high water mark of streams;

d. total volume of harvesting is limited in ten year periods;

e. slash is prohibited within 50 ft. of high water in streams and great ponds in protection districts, and is limited to 4 ft above the ground;

f. vegetated filter strips must be maintained between machinery operations and water bodies;

g. slash may not be left below high water;

h. skid trail and roads may not use unfrozen stream channels in protection districts except to cross in the shortest possible route, unless the crossing uses a culvert or bridge in accordance with the requirements for stream crossings and then only in stream beds composed of gravel, rock or other hard surface;

i. skid roads and trails shall be located and designed to divert water and prevent direct runoff to streams;

j. timber harvests in shoreland protection subdistricts upstream from the point where they drain 300 acres or less may be excepted from erosion control requirements if they do not cause sedimentation in excess of 25 Jackson Turbidity Units measured where such stream drains one sq. mi. or more;

k. harvesting in shoreland protection subdistricts downstream from the point where they drain 300 acres or more and along standing bodies of water shall maintain shading of surface waters;

l. written notice of timber harvests shall be given to LURC prior to commencement; and

m. other measures shall be taken in order to "reasonably avoid sedimentation of surface waters".

Mandatory Shoreland Zoning (38 MRSA § 483-A)

The guidance issued by DEP for the minimum shoreland zoning ordinance include the following controls on timber harvesting in the shoreland zone (250 ft from the high water line):

1. In a shoreland zone abutting a great pond in a resource protection district, timber harvesting shall be limited to the following:

a. no harvesting except to remove safety hazards within 75 ft of the high water mark.

b. basal area requirements for areas between 75 ft and 250 ft from the high water mark.

2. In other shoreland zone areas, timber harvesting shall conform to the following provisions:

a. selective cutting of no more than 40% of the total volume of trees of a certain size within a 10 year period. In addition,

i. within 100 ft of a great pond classified as GPA or a river flowing to a great pond classified GPA, and within 75 ft of other water bodies and wetlands, there shall be no clearcut openings and well distributed stand of trees shall be maintained.

ii. in shoreland areas outside those noted above, clearcut openings shall not be greater than 10,000 sq ft in the forest canopy. all clearcut openings greater than 5000 sq ft shall be at least 100 feet apart.

b. Timber harvest exceeding the 40% maximum above may be allowed upon application to the planning board including a forest management plan prepared by a licensed Maine professional forester.

c. No accumulation of slash shall be left within 50 ft of the high water mark of a water body. In all other areas, slash shall be removed to a height of 4 ft.

d. Timber harvesting equipment shall not use stream channels as travel routes except when the stream is frozen and the activity will not result in any ground disturbance.

e. All crossings of flowing water shall require a bridge or culvert, except in areas not easily eroded.

f. Skid trail approaches to water crossings shall be located and designed so as to prevent water runoff from directly entering the water. Upon completion of the harvest, all temporary bridges and culverts shall be removed and areas of exposed soil revegetated.

g. except for water crossings, all skid trails and other sites where the operation of timber harvest machinery exposes mineral soils, a 75 ft unscarified strip of vegetation shall be maintained on slopes of up to 10% between the exposed mineral soils and the upland edge of water bodies or wetlands. This strip shall increase by 20 ft for every increase in slope of 10%.

Forest Products Refuse (38 MRSA § 417)

No person may deposit or discharge forest refuse (i.e. slabs, edgings, sawdust, shavings, chips, bark, etc.) directly or indirectly on into any inland waters or tidal waters of the state or onto the banks thereof such that the refuse may flow or leach into these waters.

Erosion and Sediment Control Handbook for Maine Timber Harvesting:
Best Management Practices (June 1991) and Best Management Practices Field Handbook (Sept. 1992)

These publications describe the state's best management practices for Timber Harvesting which includes road construction. These manuals include the best management practices suggested by EPA for timber harvesting.

2. Management Issues

1. Consider a slope limit for groundskidding.

F. Site Preparation and Forest Regeneration

Confine on-site potential NPS pollution and erosion resulting from site preparation and the regeneration of forest stands. The components of the management measure for site preparation and regeneration are:

(1) Select a method of site preparation and regeneration suitable for the site conditions.
(2) Conduct mechanical tree planting and ground-disturbing site preparation activities on the contour of sloping terrain.
(3) Do not conduct mechanical site preparation and mechanical tree planting in streamside management areas.
(4) Protect surface waters from logging debris and slash material.
(5) Suspend operations during wet periods if equipment used begins to cause excessive soil disturbance that will increase erosion.
(6) Locate windrows at a safe distance from drainages and SMAs to control movement of the material during high runoff conditions.
(7) Conduct bedding operations in high-water-table areas during dry periods of the year. Conduct bedding in sloping areas on the contour.
(8) Protect small ephemeral drainages when conducting mechanical tree planting.

This measure applies to all site preparation and regeneration activities conducted as part of normal silvicultural activities on harvested units **larger than 5 acres**.

In Maine, mechanical site preparation is not widely used and regeneration is performed by hand, as opposed to mechanical seeding/planting. Thus, the components of this measure which address these activities do not apply to Maine.

1. Existing Programs

Forest Practices Act (12 MRSA § 8867 et seq.)

The Maine Forest Service in the Department of Conservation has established, by rule, standards for regeneration of vegetation after harvest and performance standards for clearcuts that will protect water quality and minimize soil erosion. The Regeneration standards require minimum stocking when 30 square feet of basal area per acre.

Clear cuts greater than 50 acres in size must have a forest management plan prepared by a professional forester that outlines the activities to regenerate, improve and harvest timber which conforms to the revegetation and clearcutting standards. This plan shall also include the location of water bodies and wildlife habitats identified by the Department of Inland Fish and Wildlife. A plan may also include, but not be limited to, schedules and recommendations for timber stand improvement, harvesting plans and recommendations for regeneration activities.

Forest Products Refuse (38 MRSA § 417)

No person may deposit or discharge forest refuse (i.e. slabs, edgings, sawdust, shavings, chips, bark, etc.) directly or indirectly on into any inland waters or tidal waters of the state or onto the banks thereof such that the refuse may flow or leach into these waters.

2. Management Issues

None.

G. Fire Management

Prescribe fire for site preparation and control or suppress wildfire in a manner which reduces potential nonpoint source pollution of surface waters:

(1) Intense prescribed fire should not cause excessive sedimentation due to the combined effect of removal of canopy species and the loss of soil-binding ability of subcanopy and herbaceous vegetation roots, especially in SMAs, in streamside vegetation for small ephemeral drainages, or on very steep slopes.

(2) Prescriptions for prescribed fire should protect against excessive erosion or sedimentation to the extent practicable.

(3) All bladed firelines, for prescribed fire and wildfire, should be plowed on contour or stabilized with water bars and/or other appropriate techniques if needed to control excessive sedimentation or erosion of the fireline.

(4) Wildfire suppression and rehabilitation should consider possible NPS pollution of watercourses, while recognizing the safety and operational priorities of fighting wildfires.

This measure applies to all prescribed burning conducted as a normal part of silvicultural activities on harvested units **larger than 5 acres** and to wildfire suppression and rehabilitation on forested lands.

Prescribed burning is seldom used in Maine, and chemical for fire suppression are not used. Thus, the components of this measure which address these activities are not applicable in Maine.

1. Existing Programs

Maine Forest Service Division of Fire Control

This Division coordinates all forest firefighting in Maine, including fire patrols, training and fire suppression. It also performs firefighting duties in unorganized territories.

2. Management Issues

1. Consider developing best management practices for wildfire suppression and rehabilitation.

H. Revegetation of Disturbed Areas

Reduce erosion and sedimentation by rapid revegetation of areas disturbed by harvesting operations or road construction:

(1) Revegetate disturbed areas (using seeding or planting) promptly after completion of the earth-disturbing activity. Local growing conditions will dictate the timing for establishing of vegetative cover.

(2) Use mixes of species and treatments developed and tailored for successful vegetation establishment for the region or area.

(3) Concentrate revegetation efforts initially on priority areas such as disturbed areas in SMAs or the steepest areas of disturbance near drainages.

This measure applies to **all disturbed areas** resulting from harvesting, road building, and site preparation. Disturbed areas are those localized areas within harvest units or road systems where mineral soil is exposed or agitated (e.g. road cuts, fill slopes, landing surfaces, cable corridors, or skid trail ruts).

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-Q et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer; will not unreasonably interfere with the natural flow of the water; and will not violate any state water quality law including those governing classification of state waters. This permitting authority may be delegated to municipalities that meet certain requirements.

A permit is not required for forestry operations in forested wetlands if:

- the activity results in a forest stand that meets minimum stocking requirements;

- the activity meets permit-by-rule standards for soil disturbance and stream crossings;

- the forested wetland is not mapped as a significant wildlife habitat; and

- any road construction is used primarily for forestry operations and not development.

A Permit-by-Rule is available for activities that involve filling, excavating or scraping land 25-100 feet of a water body or wetland, except activities in sand dunes, if they comply with a number of standards. These standards require the following measures:

a. photographs of the site must be taken before and after the activity has commenced;

b. a vegetated buffer strip is maintained 25 ft from high-water mark and 100 ft on slopes greater than 20%, except for new road crossings and other activities that are governed by the standards for those specific activities;

c. existing vegetation within the 25 ft setback shall remain undisturbed;

d. hay bales or silt fencing must be placed in setback areas which are not vegetated;

e. no soils shall be disturbed when saturated due to rain or snow;

f. erosion control measures shall be in place before starting work;

g. all disturbance activities must begin and end within a one month time frame;

h. disturbed soils shall be stabilized upon completion of work or suspensions longer than 1 week;

i. hay or straw mulch shall be applied at a rate of 1 bale per 500 sq. ft.;

j. mulch shall be anchored;

k. additional erosion and sediment control measures shall be taken when erosion or sedimentation occurs;

l. temporary stabilization measures shall continue until permanent stabilization measures are in place;

m. permanent revegetation shall occur immediately upon project completion or, if temporary measures were used, within 30 days;

n. lime and fertilizer shall be applied in limited amounts; and

o. erosion and sedimentation control measures should comply with Soil Conservation Service and/or Soil and Water Conservation District specifications.

Land Use Regulation (12 MRSA § 681 et seq.)

The Land Use Regulation Commission (LURC) regulates timber harvesting activities in unorganized territories in the State. These areas are zoned into three districts: Development, Management and Protection. Timber harvesting is allowed in all Management districts without regulation. In certain subdistricts (P-FW, P-GP, P-SL, P-WL), timber harvesting must comply with certain standards. Finally, A permit is required for timber harvesting in Development districts and certain Protection subdistricts (P-MA, P-RR and P-SG). Timber harvesting in the regulated areas must stabilize soils in accordance with the following soil stabilization guidelines:

1. Cover sterile soils with 2-4 inches of topsoil;

2. Seed disturbed areas between May 1 and September 15, when possible.

3. Mulch areas that cannot be seeded during this time frame (1 bale of hay per 500 sq. ft.). Secure mulching for over-wintering and reseed as soon as conditions allow.

4. Apply lime and fertilizer before seeding.

5. Lime applied at rate of 100 lbs per 1000 sq. ft.. this rate may vary according to the results of a recommended soil test.

6. In shoreland areas, fertilizers should be "quick release" (5-5-10 or 10-5-10). Apply at a rate of 24 lbs per 100 sq. ft.. Do not apply more than necessary around waterbodies. do not apply right before a storm.

7. Soil Conservation Mix seed is recommended. Apply at a rate of 1 lb per 1000 sq. ft.

Erosion and Sediment Control Handbook for Maine Timber Harvesting:
Best Management Practices (June 1991) and Best Management Practices Field Handbook (Sept. 1992)

These publications describe best management practices for timber harvesting. These manual includes the practices suggested by EPA for revegetation of disturbed areas.

2. Management Issues

1. Consider increasing the mulching standards under the NRPA and the best management practices manual.

I. Forest Chemical Management

Use chemicals when necessary for forest management in accordance with the following to reduce nonpoint source pollution impacts due to the movement of forest chemicals off-site during and after application:

(1) Conduct applications by skilled and, where required, licensed applicators according to the registered use, with special consideration given to impacts to nearby surface waters.

(2) Carefully prescribe the type and amount of pesticides appropriate for the insect, fungus, or herbaceous species.

(3) Prior to applications of pesticides and fertilizers, inspect the mixing and loading process and the calibration of equipment, and identify the appropriate weather conditions, the spray area, and buffer areas for surface waters.

(4) Establish and identify buffer areas for surface waters. (This is especially important for aerial applications.)

(5) Immediately report accidental spills of pesticides or fertilizers into surface waters to the appropriate State agency. Develop an effective spill contingency plan to contain spills.

This measure applies to **all fertilizer and pesticide applications** (including biological agents) conducted as part of **normal** silvicultural activities.

1. Existing Programs

Pesticide Control Laws (7 MRSA § 601 et seq.; 22 MRSA § 1471-A et seq.)

It is state policy to regulate the sale and application of chemical insecticides, fungicides, herbicides and other chemical pesticides, and to regulate the return and disposal of limited and restricted use pesticide containers. It is unlawful to distribute any pesticide which has not been registered with the state, is not properly labeled or is not in the approved form and container. It is also unlawful for any person to:

- use a pesticide contrary to its approved labeling;

- handle, store, transport, display or distribute a pesticide in such a manner as to endanger man and his environment or endanger food, feed or any other products that may be transported, stored, displayed, or distributed with such pesticides.

- handle, store, transport, display or distribute a pesticide in such a manner as may cause injury to humans, vegetation, crops, livestock, wildlife, beneficial insects or pollute any water supply or waterway;

- fail or refuse to comply with state pesticide regulations; or

- apply a pesticide in any manner contrary to rules adopted by the state relating to pesticide drift.

The Board of Pesticides Control (BPC) has the authority to issue stop sale, use or removal orders if a pesticide is being distributed, transported, stored or used in violation of state law or BPC regulations. Commercial pesticide applicators, private pesticide applicators, restricted use pesticide dealers, spotters and monitors must be certified and licensed by the BPC. General Use Pesticide Dealers must obtain a license from the BPC. These certificates and licenses require compliance with standards of competency in the distribution and use of pesticides. A certification or license may be revoked of suspended by the BPC if, among other things, the licensee or certificate holder:

- used or supervised the use of a pesticide in a careless, negligent or faulty manner or in a manner which is potentially harmful to the public health, safety or welfare or the environment;

- stored, transported or otherwise distributed pesticides in a careless, faulty or negligent manner or in a manner which is potentially harmful to the environment or the public health, safety or welfare;

- violated state law or any rules or regulations of the BPC; or

- has made a pesticide recommendation, use or application, or has supervised the application such use or application, in consistent with the labelling or restrictions imposed by the BPC.

The licensing program for private applicators includes training on water resource protection, integrated pest management, and site specific pesticide evaluations and pesticide selection. In order to be relicensed, an applicator is required to attend a certain number of these training sessions. In addition, the University of Maine Cooperative Extension Service conducts many of these training sessions which include Integrated Pesticide Management techniques, conduct sprayer calibration clinics and drift management techniques. Calibration of spray equipment and anti-siphoning devices are required under BPC regulations.

No person may apply or cause to be applied a pesticide to the waters of the state without obtaining a waste discharge license from the Department of Environmental Protection. No person shall apply pesticides to any area of the state which is designated by the BPC as a critical area, except as directed by the BPC. The BPC may designate critical areas which shall include areas where pesticide use would jeopardize endangered species or critical wildlife habitat, present unreasonable threat to the quality of a water supply, be contrary to a master plan promulgated by a state or federal agency, or would otherwise result in unreasonable adverse effects on the public health, welfare or the environment.

The regulations require pesticide containers to returnable. They establish deposit amounts, sticker requirements, triple rinse or equivalent procedures, and refund places and procedures.

The pesticide regulations require equipment operation and maintenance measures to prevent "off target" discharges, including leaks and spills.

Pesticide dealers must maintain records of pesticide distribution for two years. Commercial applicators shall keep records for at least two years of the amount and type of pesticides used, the area of pesticide use, and such other information as the BPC may require. Private applicators applying pesticides with powered equipment must also keep similar records for the same two year time period.

Public and private forest insect aerial spray pesticide applications require pre-application public notice. Waterbodies within 500 ft of the spray must be identified on a map. Weather conditions are to be considered when conducting aerial sprays, and these activities are prohibited when winds exceed 15 mph. Aerial sprays require spotters and monitors and a written report must be filed with the BPC by the spray monitor describing the spray activity.

The BPC may enter upon public or private property at reasonable times for the purpose of inspecting or

investigating pesticide equipment or storage and use operations, investigating complaints of injury to persons or land from pesticides, or sampling pesticide residues on crops, foliage, soil, water or elsewhere in the environment.

Pesticide spills must be reported to BPC which has adopted response procedures that vary depending on the size and severity of the contamination.

Any person who violates these law or any rules, orders, decisions, certificates or licenses is subject to a civil penalty of up to $1500 for the first violation and up to $4000 for every subsequent violation. However, private applicators who violate the law requiring return of limited and restricted use pesticide containers or any rule regarding record keeping for pesticide applications are only subject to a civil penalty of $500 for the first violation and $1000 for any subsequent violation. Any person who intentionally or knowingly violates this law or rules issued thereunder commits a crime punishable by a fine of up to $7000 and/or a prison term of up to 30 days. The BPC may also bring a legal action to enjoin the violation of pesticide registration laws and regulations.

Land Use Regulation (12 MRSA § 681 et seq.)

The Land Use Regulation Commission (LURC) regulates timber harvesting activities in unorganized territories in the State. These areas are zoned into three districts: Development, Management and Protection. Timber harvesting is allowed in all Management districts without regulation. In certain subdistricts (P-FW, P-GP, P-SL, P-WL), timber harvesting must comply with certain standards. Finally, A permit is required for timber harvesting in Development districts and certain Protection subdistricts (P-MA, P-RR and P-SG).

As noted above, there are harvesting prohibitions and limitations around waterbodies under the LURC rules which creates a vegetated buffer for pesticide applications because the need for pesticide spraying in these areas is eliminated.

Mandatory Shoreland Zoning (38 MRSA § 483-A)

All municipalities are required to adopt a shoreland zoning ordinance which regulates activities in the area 250 ft from the normal high-water line of great ponds, tidal waters, wetlands, and 75 ft from streams. The guidance issued by DEP for the required minimum shoreland zoning ordinance includes harvesting prohibitions and limitations around waterbodies under the LURC rules which creates a vegetated buffer for pesticide applications because the need for pesticide spraying in these areas is eliminated.

Hazardous Matter Control (38 MRSA § 1317 et seq.)

This law requires reporting of hazardous waste spills, including pesticide spills, to the DEP. The DEP responds to pesticide spills under this authority and may recover its response costs from the person responsible for the spill.

2. Management Issues

1. Consider adopting setbacks for aerial pesticide spraying near water bodies.

2. Consider designating mixing/loading areas away from surface waterbodies and rotating these areas to protect groundwater.

3. Consider establishing general contingency plans, or adopting specific standards for spill containment and cleanup.

J. Wetlands Forest

Plan, operate, and manage normal, ongoing forestry activities (including harvesting, road design and construction, site preparation and regeneration, and chemical management) to adequately protect the aquatic functions of forested wetlands.

1. Existing Programs

Forestry operations in wetlands are governed by same programs described above:

1. Land Use Regulation

2. Natural Resources Protection Act

3. Model Shoreland Zoning Ordinance, Timber Harvesting standards

2. Management Issues

1. Consider developing a best management practice for using fabrics under road beds in wetlands.

URBAN SOURCES

I. URBAN RUNOFF

A. New Development

(1) By Design or performance:

(a) After construction has been completed and the site is permanently stabilized, reduce the average annual total suspended solid (TSS) loadings by 80 per cent. For the purposes of this measure, an 80 per cent TSS reduction is to be determined on an annual average basis, or

(b) reduce the post-development loadings of TSS so that the average annual Tss loadings are no greater than pre-development loadings, and

(2) To the extent practicable, maintain post-development peak runoff rate and average volume at levels that are similar to pre-development levels.

Sound watershed management requires that both structural and nonstructural measures be employed to mitigate the adverse impacts of storm water. Nonstructural Management Measures II.B and II.C can be effectively used in conjunction with Management Measures II.A to reduce both the short- and long-term costs of meeting the treatment goals of this management measure.

This Management Measure applies to **new development, redevelopment, and new or relocated roads, highways and bridges.**

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer; will not unreasonably interfere with the natural flow of the water; and will not violate any state water quality law including those governing classification of state waters. This permitting authority may be delegated to municipalities that meet certain requirements.

A Permit-by-Rule is available for land disturbance activities within 25-100 feet from water bodies and wetlands, except activities in sand dunes, if they comply with a number of standards. With regard to stormwater management, these standards include a 25 ft undisturbed buffer (vegetated filter strip) for slopes less than 20%, and a 100 ft buffer for steeper slopes. The regulations also note that these activities should comply with the erosion and sedimentation control measures specified by the U.S. Soil Conservation Service and Soil and Water Conservation Districts.

Mandatory Shoreland Zoning law (38 MRSA § 435 et seq.)

To aid in the prevention and control of water pollution, all municipalities must enact zoning ordinances to protect shoreland areas 250 feet from the normal high-water line of rivers, great ponds and tidal waters; 250 feet from the upland edge of coastal and freshwater wetlands; and 75 feet from streams. The Board of Environmental Protection has approved guidelines to serve as a minimum for municipalities preparing these ordinances. These guidelines address structure setback and location; minimum lot sizes; and establish districts within the shoreland zone. The statute also requires towns to adopt agriculture guidelines, timber harvesting guidelines, and limits on clearing of shoreline vegetation.

With regard to stormwater controls, the municipal shoreland zoning ordinance must include stormwater control provisions for new development in order to minimize stormwater flow, retain natural drainage features and to maintain stormwater control structures. There are also buffer requirements for all new structures which range as follows:

- 25 ft vegetated buffer for structures in General Development districts;

- 75 ft vegetated buffer for structures around water bodies and wetlands; and

- 100 ft vegetated buffer for structures near great ponds classified as GPA, and rivers flowing to these great ponds.

- There is no buffer required for water dependent structures in the Commercial Fisheries/Maritime Activities district

Parking areas must meet the same setback requirements. However, the setbacks may be reduced to 50 ft from the high water line or upland edge of a wetland, if no other reasonable alternative exists. Parking areas in Commercial Fisheries/Maritime Activity districts are set back 25 ft. In terms of design criteria, parking areas must be adequately sized for the proposed use and designed to "prevent stormwater runoff from flowing directly into a water body, and where feasible, to retain all runoff on-site."

Roads and driveways must be set back 100 feet from great ponds classified as GPA and 75 ft from other water bodies and wetlands. This buffer may be reduced by the local planning board to 50 ft, if no reasonable alternative exists and the applicant shows that appropriate techniques will be used to prevent sedimentation of an adjacent water body. On slopes greater than 20%, the buffer shall be increased 10 ft for every 5% increase in slope above 20%. No new roads are permitted in Resource Protection districts and designated Significant River segments except to provide access to permitted uses in the zone, and such access shall be set back as far as practicable from the normal high water line or upland edge of a wetland. Roads shall be designed with an unscarified buffer strip 50 ft plus two times the average slope in width between the outflow of a ditch or culvert and the normal high water line or upland edge of a wetland. The drainage to this buffer must be diffused to prevent channelization. All stormwater controls must be maintained on a regular basis.

Subdivision Regulation (30-A MRSA § 4401 et seq.)

This law requires review of proposed subdivisions by municipal authorities. To approve the subdivision, this review must find that the proposed subdivision will not cause "undue water pollution" or "unreasonable soil erosion". A proposed subdivision within a watershed of a lake or pond, or within 250 feet of a wetland, great pond or river, must not adversely affect the water quality or unreasonably affect the shoreline of that water body. In addition, a subdivision must not adversely affect the quality or quantity of groundwater. Finally, the subdivision plan must provide for adequate stormwater management.

The application of this law varies in different municipalities. Some have adopted standards for stormwater plans and require review of stormwater plans by the local soil and water conservation district, while others simply review the site plans and use their best judgement to assess its adequacy.

Site Location of Development (38 MRSA § 481 et seq.)

The purpose of this law is to protect public health and the environment by locating certain large scale activities so that surface and ground water resources are protected. A state permit is required for the following activities:

- developments occupying a land or water area greater than 20 acres;
- drilling or excavating for natural resources in an area greater than 60,000 square feet;
- mining activities removing more than 1000 cubic feet or overburden or product within one year;
- hazardous activities (i.e. consumes, generates, or handles hazardous waste or matter, oil and low-level radioactive waste storage and disposal);
- development or conversion of a structure with ground area in excess of 60,000 sq. ft. or floor area of 100,000 or more;
- Parking lots, roads, paved areas, wharves or areas to be stripped or graded and not to be revegetated which causes a total project, including any buildings to occupy a ground area in excess of 3 acres;
- certain subdivisions of 5 lots or more and greater than 20 acres; and
- multi-unit housing developments (10 or more units) located within a shoreland zone.

The statute provides for a number of detailed exemptions from these categories as well.

Permits are reviewed on a case-by-case basis. The standards for review include that the project shall not have an "unreasonable adverse impact on the environment". The DEP regulations interpreting and applying this standard require the applicant to prepare a stormwater management plan which must be approved by DEP. The stormwater management system must infiltrate, detain or retain the peak runoff flow of a 25-year, 24-hour storm at pre-development levels. Developments which convey stormwater into the ocean (excluding estuarine tidal waters) exclusively in manmade pipe or open drainage systems are exempt form this requirement. The physical, biological and chemical properties of the receiving waters shall not be degraded by the stormwater runoff. The peak discharge of the receiving waters will not be increased as a result of the stormwater runoff up to the intensity of a 25-year, 24-hour storm.

Land Use Regulation (12 MRSA § 681 et seq.)

The Land Use Regulation Commission (LURC) regulates development activities in unorganized territories in the State. Land Use districts and standards have been adopted by LURC. Under these standards, proposed development must "fit harmoniously into the existing natural environment". As for stormwater controls, an application for proposed subdivision or large lot development must include a stormwater management plan, but there are no specific requirements for the substance of this plan.

Comprehensive Planning and Land Use Regulation Act (30-A MRSA § 4311 et seq.)

This law establishes requirements for the development of a local growth management program, which includes a comprehensive plan and an implementation program (i.e. zoning and other land use ordinances; capital improvements program). Under the Act, municipalities that want to regulate land uses beyond the mandatory shoreland zoning requirements must ensure that their land use ordinances are consistent with a local comprehensive plan that is consistent with the minimum requirements of the Act. All local land use ordinances that do not conform to an approved comprehensive plan are void after January 1, 1998 for municipalities that received planning and implementation grants from the State prior to December 1991; and after January 1, 2003 for all other municipalities.

Comprehensive plans and zoning ordinances are reviewed by the Department of Economic and Community Development for consistency with the Act. Comprehensive plans must include the following elements:

1. an inventory and analysis of various resources in the municipality, including significant water resources (such as estuaries and coastal waters) and their vulnerability to degradation;

2. a policy development section which promotes 10 state planning goals, one of which is to protect water quality and manage the quantity of the state's water resources, and promotes the state's 9 coastal policies, one of which is to protect coastal water quality;

This law provides towns with an opportunity to adopt ordinances that control stormwater discharges in conformity with this management measure.

2. Management Issues

1. Adopt a standard for stormwater quality (e.g. 80% TSS reduction) in these programs.

2. Develop statewide stormwater best management practices that can be implemented through existing permit programs.

3. Consider including some specific best management practices, other than buffer strips, as universal standards in all these regulatory programs.

4. Consider ways to fund further technical assistance to municipalities for developing and adopting local stormwater ordinances, and for reviewing proposed stormwater control plans.

5. Consider developing a model stormwater control ordinance that includes water quality and quantity criteria.

B. Watershed Protection

Develop a watershed protection program to:

(1) Avoid conversion, to the extent practicable, of areas that are particularly susceptible to erosion and sediment loss;

(2) Preserve areas that provide important water quality benefits and/or are necessary to maintain riparian and aquatic biota; and

(3) Site development, including roads, highways, and bridges, to protect, to the extent practicable, the natural integrity of water bodies and natural drainage systems.

This measure applies to **new development and redevelopment**.

1. Existing Programs

Comprehensive Planning and Land Use Regulation Act (30-A MRSA § 4311 et seq.)

Watershed management is largely addressed through state and regional planning efforts to facilitate and coordinate municipal comprehensive planning and zoning ordinances. This law establishes requirements for the development of a local growth management program, which includes a comprehensive plan and an implementation program (i.e. zoning and other land use ordinances; capital improvements program). Under the Act, municipalities that want to regulate land uses beyond the mandatory shoreland zoning requirements must ensure that their land use ordinances are consistent with a local comprehensive plan that is consistent with the minimum requirements of the Act. All local land use ordinances that do not conform to an approved comprehensive plan are void after January 1, 1998 for municipalities that received planning and implementation grants from the State prior to December 1991; and after January 1, 2003 for all other municipalities.

Comprehensive plans and zoning ordinances are reviewed by the Department of Economic and Community Development for consistency with the Act. Comprehensive plans must include the following elements:

1. an inventory and analysis of various resources in the municipality, including significant water resources (such as estuaries and coastal waters) and their vulnerability to degradation;

2. a policy development section which promotes 10 state planning goals, one of which is to protect water quality and manage the quantity of the state's water resources, and promotes the state's 9 coastal policies, one of which is to protect coastal water quality;

3. an implementation strategy that designates of growth and rural areas (i.e. a future land use plan), ensures protection of water bodies, and specifies a capital investment plan (i.e. public facilities and services needed to meet projected growth and development); and

4. a regional coordination program for resources shared with other municipalities.

The implementation program, including the local zoning ordinance, must be consistent with the implementation strategy developed in the comprehensive plan.

Land Use Regulation (12 MRSA § 681 et seq.)

The Land Use Regulation Commission (LURC) implements a comprehensive plan and regulates all development in unorganized territories in the State. Watershed management in unorganized territories is accomplished through segregating development activities into three zoning districts:

- Protection districts: areas where development would jeopardize significant natural, recreational and historic resources, including but not limited to, flood plains, precipitous slopes, wildlife habitat, and other areas critical to the ecology of the region or state.

- Management districts: areas which are appropriate for commercial forest product or agricultural uses and for which plans for additional development are not presently formulated nor additional development anticipated.

- Development districts: areas discernible as having patterns of intensive residential, recreational, commercial, or industrial use, or commercial removal of minerals or other natural resources, and areas appropriate for designation as development districts when measured against the purpose, intent and provisions of this chapter.

These districts are divided into subdistricts which further help to locate development activities away from sensitive water resources. LURC also has a lake management program which applies additional standards to projects proposed in lake watershed areas.

Site Location of Development (38 MRSA § 481 et seq.)

Watershed management is achieved under this law by directing development away from sensitive areas. The purpose of this law is to protect public health and the environment by locating certain large scale activities so that surface and ground water resources are protected. A state permit is required for the following activities:

- developments occupying a land or water area greater than 20 acres;
- drilling or excavating for natural resources in an area greater than 60,000 square feet;
- mining activities removing more than 1000 cubic feet or overburden or product within one year;
- hazardous activities (i.e. consumes, generates, or handles hazardous waste or matter, oil and low-level radioactive waste storage and disposal);
- development or conversion of a structure with ground area in excess of 60,000 sq. ft. or floor area of 100,000 or more;
- Parking lots, roads, paved areas, wharves or areas to be stripped or graded and not to be revegetated which causes a total project, including any buildings to occupy a ground area in excess of 3 acres;
- certain subdivisions of 5 lots or more and greater than 20 acres; and
- multi-unit housing developments (10 or more units) located within a shoreland zone.

The statute provides for a number of detailed exemptions from these categories as well. Permits are reviewed on a case-by-case basis and allow the State to impose a variety of pollution control requirements on the proposed activity.

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer; will not unreasonably interfere with the natural flow of the water; and will not violate any state water quality law including those governing classification of state waters. This permitting authority may be delegated to municipalities that meet certain requirements.

Some degree of watershed management is achieved through this statute by requiring review of proposed development near these water resources in order to impose setbacks and performance standards.
will not violate any state water quality law including those governing classification of state waters.

Mandatory Shoreland Zoning (38 MRSA § 435 et seq.)

A certain degree of watershed management is achieved under this law which requires all municipalities to enact a zoning ordinance to protect shoreland areas 250 feet from the normal high-water line of rivers, great ponds and tidal waters; 250 feet from the upland edge of coastal and freshwater wetlands; and 75 feet from streams. The Board of Environmental Protection has developed guidelines to serve as a minimum for municipalities preparing these ordinances. These guidelines address structure setback and location, minimum lot sizes, and establish Resource Protection, General Development, Limited Residential, Limited Commercial, Commercial Fisheries/Maritime Activity, and Stream Protection districts.

The Resource Protection District must include areas within 250 ft of wetlands designated as "moderate" or "high" value waterfowl habitat designated by the Department of Inland Fisheries and Wildlife; 100 year flood plains of rivers; two (2) contiguous acre lots with sustained slopes of 20% or greater; two (2) contiguous acres of isolated wetlands; and areas subject to severe erosion. Municipalities may also include habitats for endangered or threatened species; high and moderate deer wintering yards and travel corridors; high and moderate value habitat for waterfowl and wading birds; critical spawning and nursery areas for Atlantic sea run salmon; shorebird nesting, feeding and staging areas and seabird nesting islands; and other areas of local significance.

Nonpoint Source Pollution Program (38 MRSA § 410-H et seq.)

This law directs state agencies to cooperate in a coordinated approach to nonpoint source water pollution and to identify priority water bodies for remedial action. Best management practice manuals have been, and continue to be, developed by working groups formed for each source category. In addition, this program conducts watershed demonstration projects which focus on remedying all nonpoint source problems in a particular watershed.

Public Water Supply (22 MRSA § 2647-A et seq.)

Water utilities, municipalities and the Department of Human Services (Bureau of Health) are authorized to take reasonable steps to protect public water sources from pollution, including the entry upon land within 1000 feet of the source to inspect and remedy suspected sources of pollutants. As this law only applies to drinking water, it does not apply directly to marine waters.

Coastal Watershed Districts (38 MRSA § 2021 et seq.)

Coastal Watershed Districts may be created by application of municipalities to the Department of Environmental Protection. The district is empowered to conduct research; plan coastal restoration projects; coordinate enact and enforcement of municipal ordinances; adopt and implement coastal protection, management and restoration plans; and adopt and implement plans and programs to coordinate water level management.

No coastal watershed districts have been created as yet.

River Corridor Commissions (30-A MRSA § 4461 et seq.)

State policy encourages the formation of river corridor commissions which are authorized to develop, through rulemaking, comprehensive plans to manage resources and problems in the river corridor. The Commissioner of Conservation is authorized to approve the formation of commissions and to grant them powers and duties. Only the Saco River Commission exists at this time.

2. Management Issues

1. Consider the use of coastal watershed districts to coordinate watershed management.

2. Consider conducting watershed management conferences for municipalities that share a watershed.

C. Site Development

Plan, design and develop sites to:

(1) Protect areas that provide important water quality benefits and/or particularly susceptible to erosion and sediment loss;

(2) Limit increases of impervious areas, except where necessary;

(3) Limit land disturbance activities such as clearing and grading, and cut and fill to reduce erosion and sediment loss; and

(4) Limit disturbance of natural drainage features and vegetation.

This measure applies to **all site development activities** including roads, highways and bridges.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer; will not unreasonably interfere with the natural flow of the water; and will not violate any state water quality law including those governing classification of state waters. This permitting authority may be delegated to municipalities that meet certain requirements.

This permitting authority allows the State to impose limitations on impervious surface, disturbance of soils and destruction natural drainage. A Permit by-Rule is available for certain activities within 25-100 feet of these protected resources. These activities must comply with standards which limit land disturbance and disturbance of natural drainage features.

Site Location of Development (38 MRSA § 481 et seq.)

The purpose of this law is to protect public health and the environment by locating certain large scale activities so that surface and ground water resources are protected. A state permit is required for the following activities:

- developments occupying a land or water area greater than 20 acres;
- drilling or excavating for natural resources in an area greater than 60,000 square feet;
- mining activities removing more than 1000 cubic feet or overburden or product within one year;
- hazardous activities (i.e. consumes, generates, or handles hazardous waste or matter, oil and low-level radioactive waste storage and disposal);

- development or conversion of a structure with ground area in excess of 60,000 sq. ft. or floor area of 100,000 or more;

- Parking lots, roads, paved areas, wharves or areas to be stripped or graded and not to be revegetated which causes a total project, including any buildings to occupy a ground area in excess of 3 acres;

- certain subdivisions of 5 lots or more and greater than 20 acres; and

- multi-unit housing developments (10 or more units) located within a shoreland zone.

The statute provides for a number of detailed exemptions from these categories as well.

Permits are reviewed on a case-by-case basis. The standards for granting these permits include no adverse affect on water quality; no unreasonable erosion or sediment transfer; no unreasonable risk to groundwater and no unreasonable risk of flood. The regulations interpreting these standards require an erosion and sedimentation control plan and protection of natural drainage ways. The DEP uses the Maine Erosion and Sedimentation Control Handbook for Construction to review these applications.

Subdivision Regulation (30-A MRSA § 4401 et seq.)

This law requires a site plan review by municipal authorities for proposed subdivisions. To approve the subdivision, this review must find that the proposed subdivision will not cause "undue water pollution" or "unreasonable soil erosion". A proposed subdivision within a watershed of a lake or pond, or within 250 feet of a wetland, great pond or river, must not adversely affect the water quality or unreasonably affect the shoreline of that water body. In addition, a subdivision must not adversely affect the quality or quantity of groundwater. Finally, the subdivision plan must provide for adequate stormwater management.

Mandatory Shoreland Zoning law (38 MRSA § 435 et seq.)

To aid in the prevention and control of water pollution, all municipalities must enact zoning ordinances to protect shoreland areas 250 feet from the normal high-water line of rivers, great ponds and tidal waters; 250 feet from the upland edge of coastal and freshwater wetlands; and 75 feet from streams. The Board of Environmental Protection has approved guidelines to serve as a minimum for municipalities preparing these ordinances. These guidelines address structure setback and location; minimum lot sizes; and establish districts within the shoreland zone. The statute also requires towns to adopt agriculture guidelines, timber harvesting guidelines, and limits on clearing of shoreline vegetation.

The DEP guidance for the minimum requirements for municipal shoreland zoning ordinances includes a Resource Protection district which precludes development in certain areas, as well as standards which limit structures to 20% of the lot; limit clearing of vegetation to 40%; require erosion and sedimentation control plans; and require maintenance of natural drainage features.

Land Use Regulation (12 MRSA § 681 et seq.)

LURC reviews all proposed development in unorganized territories. The LURC land use standards require and sedimentation control; limitation of land disturbance; lot coverage limit of 30%; and natural drainage protection.

Comprehensive Planning and Land Use Regulation Act (30-A MRSA § 4311 et seq.)

This law establishes requirements for the development of a local growth management program, which includes a comprehensive plan and an implementation program (i.e. zoning and other land use ordinances; capital improvements program). Under the Act, municipalities that want to regulate land uses beyond the mandatory shoreland zoning requirements must ensure that their land use ordinances are consistent with a local comprehensive plan that is consistent with the minimum requirements of the Act. All local land use ordinances that do not conform to an approved comprehensive plan are void after January 1, 1998 for municipalities that received planning and implementation grants from the State prior to December 1991; and after January 1, 2003 for all other municipalities.

Comprehensive plans and zoning ordinances are reviewed by the Department of Economic and Community Development for consistency with the Act. Comprehensive plans must include the following elements:

1. an inventory and analysis of various resources in the municipality, including significant water resources (such as estuaries and coastal waters) and their vulnerability to degradation;

2. a policy development section which promotes 10 state planning goals, one of which is to protect water quality and manage the quantity of the state's water resources, and promotes the state's 9 coastal policies, one of which is to protect coastal water quality;

This law provides towns with an opportunity to adopt ordinances that protect sensitive areas from development, limit land disturbance and impervious surface, and protect natural drainages, all in conformity with this management measure.

2. Management Issues

1. Consider adding a limit on impervious surface for new development in the Site Location of Development law and the Natural Resources Protection Act.

2. Consider adding standards to protect natural drainage features in the Natural Resources Protection Act.

3. Consider ways to fund technical assistance to towns to adopt ordinances that protect sensitive areas from development, limit land disturbance and impervious surface, and protect natural drainages, all in conformity with this management measure.

4. Consider developing model ordinances for towns that protect sensitive areas from development, limit land disturbance and impervious surface, and protect natural drainages, all in conformity with this management measure.

II. CONSTRUCTION ACTIVITIES

A. Construction Site Erosion and Sediment Control

(1) Reduce erosion and, to the extent practicable, retain sediment onsite during and after construction; and

(2) Prior to land disturbance, prepare and implement an approved erosion and sediment control plan or similar administrative document that contains erosion and sediment control provisions.

This measure applies to construction activities on sites **less than five (5) acres** that do NOT have an NPDES permit. This does **NOT** apply to: (1) construction of a single family residence on 1/2 acre or more; or (2) construction that does not disturb more than 5,000 sq ft. of land.

1. Existing Programs

Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices

This handbook sets out the Best Management Practices (BMP's) that should be used on all construction sites in Maine. State and local permit reviewers use this handbook as a reference for reviewing erosion and sediment control plans. The BMP's included in this handbook are the following:

NONSTRUCTURAL MEASURES

1. Temporary mulching
2. Temporary grass and legume cover
3. Permanent grass and legume cover
4. Sodding
5. Trees, shrubs, vines and ground covers
6. Permanent mulching
7. Tree protection
8. Vegetative sand dune and tidal bank protection
9. Vegetated filter strip
10. Gravel pit reclamation
11. Vegetative streambank stabilization
12. Topsoiling
13. Topsoil substitutes and soil amendments
14. Sediment barriers
15. Temporary check dams
16. Storm drain inlet protection
17. Dust control
18. Stabilized construction entrance

STRUCTURAL MEASURES

1. Water conveyance conduits
2. Pipe inlet protection

3. Pipe outlet protection
4. Land grading and slope protection
5. Temporary slope drain
6. Paved flume
7. Vegetated waterway
8. Lined waterway
9. Road ditch turnout
10. Level spreader
11. Temporary diversion
12. Diversion
13. Temporary stream crossing
14. Permanent stream crossing
15. Temporary stream diversion
16. Streambank stabilization
17. Sediment trap
18. Sediment basin
19. Pond construction
20. Subsurface drain

MATERIALS SPECIFICATION

1. Riprap
2. Gabions
3. Geotextiles
4. Retaining walls

Site Location of Development (38 MRSA § 481 et seq.)

The purpose of this law is to protect public health and the environment by locating certain large scale activities so that surface and ground water resources are protected. A state permit is required for the following activities:

- developments occupying a land or water area greater than 20 acres;
- drilling or excavating for natural resources in an area greater than 60,000 square feet;
- mining activities removing more than 1000 cubic feet or overburden or product within one year;
- hazardous activities (i.e. consumes, generates, or handles hazardous waste or matter, oil and low-level radioactive waste storage and disposal);
- development or conversion of a structure with ground area in excess of 60,000 sq. ft. or floor area of 100,000 or more;
- Parking lots, roads, paved areas, wharves or areas to be stripped or graded and not to be revegetated which causes a total project, including any buildings to occupy a ground area in excess of 3 acres;
- certain subdivisions of 5 lots or more and greater than 20 acres; and
- multi-unit housing developments (10 or more units) located within a shoreland zone.

The statute provides for a number of detailed exemptions from these categories as well.

Permits are reviewed on a case-by-case basis. The standards for granting these permits include no adverse affect on water quality, no unreasonable erosion or sediment transfer, no unreasonable risk to groundwater and no unreasonable risk of flood. The regulations interpreting these standards require an erosion and sedimentation control plan and protection of natural drainage ways. The DEP uses the Maine Erosion and Sedimentation Control Handbook to review these applications.

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer; will not unreasonably interfere with the natural flow of the water; and will not violate any state water quality law including those governing classification of state waters. This permitting authority may be delegated to municipalities that meet certain requirements.

This permitting authority allows the State to impose erosion and sedimentation control requirements, including a plan, on a case-by-case basis. Construction projects that require a full permit must prepare and implement an erosion and sedimentation control plan which must reflect the practices described in the Erosion and Sedimentation Control Handbook. A Permit-By-Rule is available for land disturbance activities within 25-100 ft of water bodies or wetlands. These activities must comply with specific erosion and sedimentation control standards and follow the Erosion and Sedimentation Control Handbook.

Subdivision Regulation (30-A MRSA § 4401 et seq.)

This law requires a site plan review of proposed subdivisions by municipal authorities. To approve the subdivision, this review must find that the proposed subdivision will not cause "undue water pollution" or "unreasonable soil erosion". A proposed subdivision within a watershed of a lake or pond, or within 250 feet of a wetland, great pond or river, must not adversely affect the water quality or unreasonably affect the shoreline of that water body. In addition, a subdivision must not adversely affect the quality or quantity of groundwater. Finally, the subdivision plan must provide for adequate stormwater management.

Mandatory Shoreland Zoning law (38 MRSA § 435 et seq.)

To aid in the prevention and control of water pollution, all municipalities must enact zoning ordinances to protect shoreland areas 250 feet from the normal high-water line of rivers, great ponds and tidal waters; 250 feet from the upland edge of coastal and freshwater wetlands; and 75 feet from streams. The Board of Environmental Protection has approved guidelines to serve as a minimum for municipalities preparing these ordinances. These guidelines address structure setback and location; minimum lot sizes; and establish districts within the shoreland zone. The statute also requires towns to adopt agriculture guidelines, timber harvesting guidelines, and limits on clearing of shoreline vegetation.

The DEP guidance for municipal shoreland zoning ordinances requires an erosion and sedimentation control plan that is approved by the local planning board; land clearing limits for commercial and residential development; and vegetated buffer strips for new development.

Land Use Regulation (12 MRSA § 681 et seq.)

LURC reviews construction projects and subdivisions in unorganized territories. The land use standards require a vegetated buffer strip to be maintained around water bodies and wetlands. Applications for construction require preparation of an erosion and sedimentation control plan according to the following guidelines for soil stabilization:

1. Cover sterile soils with 2-4 inches of topsoil;

2. Seed disturbed areas between May 1 and September 15, when possible.

3. Mulch areas that cannot be seeded during this time frame (1 bale of hay per 500 sq. ft.). Secure mulching for over-wintering and reseed as soon as conditions allow.

4. Apply lime and fertilizer before seeding.

5. Lime applied at rate of 100 lbs per 1000 sq. ft.. this rate may vary according to the results of a recommended soil test.

6. In shoreland areas, fertilizers should be "quick release" (5-5-10 or 10-5-10). Apply at a rate of 24 lbs per 100 sq. ft.. Do not apply more than necessary around waterbodies. do not apply right before a storm.

7. Soil Conservation Mix seed is recommended. Apply at a rate of 1 lb per 1000 sq. ft.

Comprehensive Planning and Land Use Regulation Act (30-A MRSA § 4311 et seq.)

This law establishes requirements for the development of a local growth management program, which includes a comprehensive plan and an implementation program (i.e. zoning and other land use ordinances; capital improvements program). Under the Act, municipalities that want to regulate land uses beyond the mandatory shoreland zoning requirements must ensure that their land use ordinances are consistent with a local comprehensive plan that is consistent with the minimum requirements of the Act. All local land use ordinances that do not conform to an approved comprehensive plan are void after January 1, 1998 for municipalities that received planning and implementation grants from the State prior to December 1991; and after January 1, 2003 for all other municipalities.

Comprehensive plans and zoning ordinances are reviewed by the Department of Economic and Community Development for consistency with the Act. Comprehensive plans must include the following elements:

1. an inventory and analysis of various resources in the municipality, including significant water resources (such as estuaries and coastal waters) and their vulnerability to degradation;

2. a policy development section which promotes 10 state planning goals, one of which is to protect water quality and manage the quantity of the state's water resources, and promotes the state's 9 coastal policies, one of which is to protect coastal water quality;

This law provides towns with an opportunity to adopt ordinances that minimize erosion and require erosion and sedimentation control plans in conformity with this management measure.

2. Management Issues

1. Consider including or referencing the Erosion and Sedimentation Control Handbook in the Shoreland Zoning Ordinance guidance.

2. Consider including or referencing the Erosion and Sedimentation Control Handbook in LURC land use standards.

3. Consider ways to fund technical assistance to towns to adopt ordinances that minimize erosion and require an erosion and sedimentation control plan, in conformity with this management measure.

4. Consider developing model ordinances for towns that minimize erosion and require an erosion and sedimentation control plan, in conformity with this management measure.

B. Construction Site Chemical Control

(1) Limit application, generation, and migration of toxic substances;

(2) Ensure the proper storage and disposal of toxic materials; and

(3) Apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters.

This measure applies to construction activities on sites **less than five (5) acres** that do not have an NPDES permit. This does **NOT** apply to: (1) construction of a single family residence on 1/2 acre or more; or (2) construction that does not disturb more than 5,000 sq ft. of land.

1. Existing Programs

Site Location of Development (38 MRSA § 481 et seq.)

The purpose of this law is to protect public health and the environment by locating certain large scale activities so that surface and ground water resources are protected. A state permit is required for the following activities:

- developments occupying a land or water area greater than 20 acres;
- drilling or excavating for natural resources in an area greater than 60,000 square feet;
- mining activities removing more than 1000 cubic feet or overburden or product within one year;
- hazardous activities (i.e. consumes, generates, or handles hazardous waste or matter, oil and low-level radioactive waste storage and disposal);
- development or conversion of a structure with ground area in excess of 60,000 sq. ft. or floor area of 100,000 or more;
- Parking lots, roads, paved areas, wharves or areas to be stripped or graded and not to be revegetated which causes a total project, including any buildings to occupy a ground area in excess of 3 acres;
- certain subdivisions of 5 lots or more and greater than 20 acres; and
- multi-unit housing developments (10 or more units) located within a shoreland zone.

The statute provides for a number of detailed exemptions from these categories as well.

Permits are reviewed on a case-by-case basis. The standards for granting these permits include no adverse affect on water quality, no unreasonable erosion or sediment transfer, no unreasonable risk to groundwater and no unreasonable risk of flood. Permit applications must include an oil spill prevention control and containment plan for chemicals used during construction.

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer; will not unreasonably interfere with the natural flow of the water; and will not violate any state water quality law including those governing classification of state waters. This permitting authority may be delegated to municipalities that meet certain requirements.

This permitting authority allows the State to impose limitations on nutrient and chemical applications on a case-by-case basis. Land disturbance activities must use a specified "quick release" fertilizer at specified fertilizer application rates. This law also prohibits the use of creosote and pentachlorophenol on structures as wood preservatives.

Land Use Regulation (12 MRSA § 681 et seq.)

The Land Use Regulation Commission reviews construction projects and subdivisions in unorganized territories. The applications for construction require preparation of an erosion and sedimentation control plan according to guidelines for soil stabilization. The guidelines include recommended "quick release" fertilizer and application rates.

2. Management Issues

1. Consider encouraging or requiring limits on the use of toxic substances at construction sites.

2. Consider designating toxics handling/storage areas for construction sites.

IV. EXISTING DEVELOPMENT

Develop and implement watershed management programs to reduce runoff pollutant concentrations and volumes from existing development:

(1) Identify priority local and/or regional watershed pollutant reduction opportunities (e.g. improvements to existing urban runoff control structures);

(2) Contain a schedule for implementing appropriate controls;

(3) Limit destruction of natural conveyance systems;

(4) Where appropriate, preserve, enhance or establish buffers along surface water bodies and their tributaries.

This measure applies to all urban areas and existing development.

1. Existing Programs

Comprehensive Planning and Land Use Regulation Act (30-A MRSA § 4311 et seq.)

This law establishes requirements for the development of a local growth management program, which includes a comprehensive plan and an implementation program (i.e. zoning and other land use ordinances; capital improvements program). Under the Act, municipalities that want to regulate land uses beyond the mandatory shoreland zoning requirements must ensure that their land use ordinances are in accordance with a local comprehensive plan that is consistent with the minimum requirements of the Act. All local land use ordinances that do not conform to an approved comprehensive plan are void after January 1, 1998 for municipalities that received planning and implementation grants from the State prior to December 1991; and after January 1, 2003 for all other municipalities.

Comprehensive plans and zoning ordinances are reviewed by the Department of Economic and Community Development for consistency with the Act. Comprehensive plans must include an implementation strategy that designates of growth and rural areas (i.e. a future land use plan), ensures protection of water bodies, and specifies a capital investment plan (i.e. public facilities and services needed to meet projected growth and development); and The implementation program, including the local zoning ordinance, must be consistent with the implementation strategy developed in the comprehensive plan.

Nonpoint Source Pollution Program (38 MRSA § 410-H et seq.)

This program provides ongoing technical assistance and grants to towns who wish to retrofit urban areas to minimize or eliminate NPS pollution. This program has identified priority water bodies which require attention based upon water quality. Priority retrofit opportunities are scheduled on yearly basis in accordance with the State NPS Management Plan.

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer; will not unreasonably interfere with the natural flow of the water; and will not violate any state water quality law including those governing classification of state waters. This permitting authority may be delegated to municipalities that meet certain requirements.

This permitting authority protects natural drainage systems by limiting the expansion of existing development and specifying buffers around water bodies.

Land For Maine's Future Program

This is a statewide land acquisition program administered by the State Planning Office and is funded by $35 million bond issue. The state has purchased 48,907 acres of priority lands. This includes eight coastal properties totaling 4,826 acres and over 19 shoreline miles, over and 7,000 acres of wetlands statewide..

2. Management Issues

1. Consider ways to fund retrofitting controls for urban sources.

2. Consider increased funding for preserving open space, including Land for Maine's Future Board and local land trusts.

3. Develop a prioritization system to identify watersheds that require retrofit projects.

V. ONSITE DISPOSAL SYSTEMS

A. New Onsite Disposal Systems

(1) Ensure that new Onsite Sewage Disposal Systems (OSDS) are located, designed, installed operated, inspected and maintained to prevent the discharge of pollutants to the surface of the ground and to the extent practicable reduce the discharge of pollutants into the ground waters that are closely hydrologically connected to surface waters. Where necessary to meet these objectives: (a) discourage the installation of garbage disposals to reduce hydraulic and nutrient loadings; and (b) where low-volume plumbing fixtures have not been installed in new developments or redevelopments, reduce total hydraulic loadings to the OSDS by 25 per cent. Implement OSDS inspection schedules for pre-construction, construction and post-construction.

(2) Direct placement of OSDS away from unsuitable areas. Where OSDS placement in unsuitable areas is not practicable, ensure that the OSDS is designed or sited at a density so as not to adversely affect surface waters or ground water that is closely hydrologically connected to surface water. Unsuitable areas include, but are not limited to, areas with poorly or excessively drained soils; areas with shallow water tables or areas with high seasonal water tables; areas overlaying fractured bedrock that drain directly to ground water; areas within floodplain; or areas where nutrient and/or pathogen concentrations in the effluent cannot be sufficiently treated or reduced before the effluent reaches sensitive water bodies.

(3) Establish protective setbacks from surface waters, wetlands, and floodplain for conventional as well as alternative OSDS. The lateral setbacks should be based on soil type, slope, hydrologic factors, and type of OSDS. Where uniform protection setbacks cannot be achieved, site development with OSDS so as not to adversely affect water bodies and/or contribute to a public health nuisance.

(4) Establish protective separation distances between OSDS system components and groundwater which is closely hydrologically connected to surface waters. The separation distances should be based on soil type, distance to ground water, hydrologic factors, and type of OSDS.

(5) Where conditions indicate that nitrogen-limited surface waters may be adversely affected by excess nitrogen loadings from ground water, require the installation of OSDS that reduce total nitrogen loadings by 50 per cent to ground water that is closely hydrologically connected to surface water.

This measure applies to **all new OSDS** including package plants and small-scale or regional treatment facilities not covered by NPDES regulations in order to manage the siting, design, installation, operation and maintenance of all such OSDS. There are no known nitrogen limited marine waters in Maine, so nitrogen reducing septic systems are not required.

1. Existing Programs

Minimum Lot Size (12 MRSA § 4807 et seq.)

This law requires a minimum 20,000 sq. ft. lot for installing a residential subsurface waste disposal system. Multiple housing units must also have a minimum lot size in proportion to their size (number of bedrooms). All such lots abutting water bodies must also have a minimum of 100 ft. of frontage. Exemptions may be granted by

application to the Department of Human Services.

Plumbing Code (22 MRSA § 42)

The Department of Human Services issues and administers Subsurface Wastewater Disposal Rules. Enforcement of these rules is delegated to municipalities which must appoint at least one certified plumbing inspector. The Department also has rules for licensing soil evaluators for new septic systems.

The Subsurface Wastewater Disposal Rules, which are currently under revision, include the following:

- an inspection requirement during construction;

- general maintenance requirements;

- setbacks from water bodies and wetlands which vary according to slope;

- design requirements which vary according to soil type and system type;

- design requirements for disposal fields, including additional requirements for those in shoreland areas;

- alternative systems for nitrogen limited waters

Water Pollution Control (38 MRSA § 361-A; 411 et seq.)

No person may install, operate, or maintain a surface or subsurface wastewater disposal system without a license from DEP, except for systems installed in accordance with the plumbing code adopted by the Department of Human Services.

Mandatory Shoreland Zoning law (38 MRSA § 435 et seq.)

The mandatory municipal shoreland zoning ordinance must have a setback for new subsurface wastewater disposal systems of 100 feet from water bodies.

Land Use Regulation (12 MRSA § 681 et seq.)

The Land Use Regulation Commission reviews construction projects and subdivisions in unorganized territories. The land use standards include a minimum lot size for installation of new subsurface wastewater disposal systems that varies according to soil type.

Site Location of Development (38 MRSA § 481 et seq.)

This law requires a nitrate study before the installation of a OSDS for large scale developments. Nitrogen reducing systems are an option if shown to be needed by this study.

2. Management Issues

1. Consider discouraging or prohibiting the use of in-sink garbage disposals.

2. Consider requiring low-volume plumbing fixtures for new construction.

B. Operating Onsite Disposal Systems

(1) Establish and implement policies and systems to ensure that existing OSDS are operated and maintained to prevent the discharge of pollutants to the surface of the ground and to the extent practicable reduce the discharge of pollutants into ground waters that are closely hydrologically connected to surface waters. Where necessary to meet these objectives, encourage the reduced use of garbage disposals, encourage the use of low-volume plumbing fixtures, and reduce total phosphorous loadings to the OSDS by 15 per cent (if the use of low-level phosphate detergents has not been required or widely adopted by OSDS users). Establish and implement policies that require an OSDS to be repaired, replaced, or modified where the OSDS fails, or threatens or impairs surface waters.

(2) Inspect OSDS at a frequency adequate to ascertain whether OSDS are failing.

(3) Consider replacing or upgrading OSDS to treat influent so that nitrogen loadings in the effluent are reduced by 50 per cent. This provision applies only:

(a) where conditions indicate that nitrogen-limited surface waters may be adversely affected by significant ground water nitrogen loadings from OSDS; and

(b) where nitrogen loadings from OSDS are delivered to ground water that is closely connect hydrologically to surface water.

This measure applies to **all operating OSDS.**

1. Existing Programs

Water Pollution Control (38 MRSA § 361-A; 411 et seq.)

No person may install, operate, or maintain a surface or subsurface wastewater disposal system without a license from DEP, except for systems installed in accordance with the plumbing code adopted by the Department of Human Services.

DEP shall inspect all licensed year-round overboard discharge systems at least twice per year. At least once per year, DEP shall inspect all licensed overboard discharges used more than 6 months per year. A variable annual fee is charged to pay for these inspections according to the income level of the licensee. Licensees may be granted a waiver from the inspection fee if they are allowed by DEP to perform their own inspections and report their findings to DEP.

Existing licenses for overboard discharges are phased out according to a schedule. Overboard discharges may be relicensed if the DEP finds that there is no technologically proven alternative methods of wastewater disposal consistent with the plumbing code that will not result in an overboard discharge. DEP may not require a holding tank as the "technologically proven alternative method of wastewater disposal" except for a seasonal overboard discharge located on the mainland or on an island connected by a bridge or scheduled car ferry service and overboard discharges located within a sanitary district which has agreed to service the tank.

Plumbing Code (22 MRSA § 42)

The Department of Human Services issues and administers Subsurface Wastewater Disposal Rules. Enforcement of these rules is delegated to municipalities which must appoint at least one certified plumbing inspector. The Subsurface Wastewater Disposal Rules, which are currently under revision, include the following:

- general maintenance requirements;

- optional inspection requirements and a model ordinance for municipalities that wish to adopt an inspection ordinance.

Overboard Discharge Elimination Program (38 MRSA § 411-A)

This program is designed to eliminate licensed local overboard discharges which are impacting redeemable shellfish areas. The Department of Marine Resources (DMR) identifies priority redeemable shellfish areas. DEP then establishes grant opportunities in towns adjacent to these areas.

Small Community Facilities Program (38 MRSA § 411-412)

DEP makes construction grants to eliminate leaking or malfunctioning septic systems, unlicensed overboard discharges, or provide funding for local pollution abatement construction programs. The priority of the site is based on a point system which values protection of ground and surface waters highest, shellfishing protection second, and correction of public nuisance conditions third.

2. Management Issues

1. Consider ways to increase funds to remove the remaining overboard discharges.

2. Consider specific mandatory inspection and maintenance requirements for surface and subsurface OSDS, similar to those for licensed overboard discharges.

VI. POLLUTION PREVENTION

Implement pollution prevention and education programs to reduce nonpoint source pollutants generated from the following activities, where applicable:

- *The proper storage, use and disposal of household chemicals, including automobile fluids, pesticides, paints, solvents, etc.;*
- *Lawn and garden activities, including the application and disposal of lawn and garden care products, and the improper disposal of leaves and yard trimmings;*
- *Turf management on golf courses, parks and recreational areas;*

  Improper operation and maintenance of onsite disposal systems;
- *Discharge of pollutants into storm drains including floatables, waste oil and litter;*
- *Commercial activities including parking lots, gas stations, and other entities not under NPDES purview; and*
- *Improper disposal of pet excrement.*

This Management Measure does **not** require an enforceable policy or mechanism. This measure applies to all areas where nonpoint source pollution exists.

1. Existing Programs

Nonpoint Source Pollution Program (38 MRSA § 410-H et seq.)

This program provides technical assistance and education to towns, trade groups and the public on all aspects of NPS pollution.

Maine Pollution Prevention Program (38 MRSA § 342, 358; 5 MRSA § 12004-I)

The Maine Pollution Prevention Fund is established as a nonlapsing fund administered by DEP for the purpose of strengthening environmental protection in the State through pollution prevention activities and methods. The fund may receive money from contributions from other entities, both public and private; and registration and associated fees for pollution prevention workshops held by DEP.

The fund may be used to establish and support pollution prevention programs and activities. This fund may support the Toxics Use and Hazardous Waste Reduction Program established and support functions and activities of the Office of Pollution Prevention.

The Office of Pollution Prevention at DEP coordinates programs which implement pollution prevention techniques at large industrial operations. The program also offers some technical assistance to smaller business that wish to adopt some of these techniques. There seems to have been a recent surge of interest among the business community in Maine in these methods of pollution control as they are in many cases cheaper than the traditional

regulatory/technical controls.

2. Management Issues

1. Consider ways to increase funding for these programs.

2. Consider putting more attention into homeowner and small business pollution prevention programs, rather than large industrial sources.

VII. ROADS, HIGHWAYS AND BRIDGES

A. Planning, Siting and Developing Roads and Highways

Plan, site and develop roads and highways to:

(1) Protect areas that provide important water quality benefits or are particularly susceptible to erosion and sediment loss;

(2) Limit land disturbance such as clearing and grading and cut and fill to reduce erosion and sediment loss; and

(3) Limit disturbance of natural drainage features and vegetation.

This measure applies to **all new, relocated and reconstructed roads and highways**, including residential streets.

1. Existing Programs

Department of Transportation, Road and Highway Design Review

The Water Resources section of the DOT reviews plans for road and highway design in order to implement any applicable best management practices to protect water quality. The DOT has developed its own manual or best management practices which it uses in this review. The practices that are enforced through road construction contracts that vary according to the size and location of the project.

Best Management Practices for Erosion and Sediment Control

This Manual was created by the Department of Transportation in 1992 to specifically address road and bridge construction. it includes descriptions of the following measures:

1. Temporary mulching
2. Temporary grass and legume cover
3. Permanent grass and legume cover
4. Sodding
5. Trees, shrubs, Vines and ground covers
6. Permanent mulching
7. Tree protection
8. [reserved]
9. Vegetated filter strip
10. Pit reclamation
11. Vegetated streambank stabilization
12. Loam
13. Loam substitutes and soil amendments
14. Sediment barriers
15. Temporary check dams
16. Storm drain inlet protection

17. Dust control
18. Disposal of toxic dredge disposal
19. Cofferdam sedimentation Basin
20 - 29. [reserved]
30. Culverts
31. Pipe inlet protection
32. Pipe outlet protection
33. [reserved]
34. Temporary slope drain
35. [reserved]
36. Vegetated waterway (ditch)
37. Stone ditch protection (riprap)
38. Road ditch turnout
39. Level spreader
40. Temporary diversion
41. Diversion
42. Temporary stream crossing
43. Permanent stream crossing
44. Temporary stream diversion
45. Streambank stabilization
46. Sediment trap
47. Cofferdam sedimentation basin
48. Disposal of toxic dredge spoils.

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources, including coastal wetlands, freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks. A state permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer; will not unreasonably interfere with the natural flow of the water; and will not violate any state water quality law including those governing classification of state waters. This permitting authority may be delegated to municipalities that meet certain requirements.

Proposed road construction is reviewed by DEP under this statute. Limitations on grading and clearing, and disturbance of natural drainage are addressed on a case-by-case basis. A Permit-by-Rule is available for projects that are 25-100 ft from the protected resource. This rule some standards for clearing. In addition, some road construction projects proposed by the Department of Transportation may also qualify for a Permit-by-Rule which imposes performance standards to reduce erosion and sedimentation and protect natural drainage.

Site Location of Development (38 MRSA § 481 et seq.)

Local or private road construction that disturbs more than 3 acres of land requires a permit from DEP. The standards for granting these permits include no adverse affect on water quality, no unreasonable erosion or sediment transfer, no unreasonable risk to groundwater and no unreasonable risk of flood. The regulations interpreting these standards require an erosion and sedimentation control plan and protection of natural drainage ways. The DEP uses the Maine Erosion and Sedimentation Control Handbook to review these applications.

Mandatory Shoreland Zoning law (38 MRSA § 435 et seq.)

To aid in the prevention and control of water pollution, all municipalities must enact zoning ordinances to protect shoreland areas 250 feet from the normal high-water line of rivers, great ponds and tidal waters; 250 feet from the upland edge of coastal and freshwater wetlands; and 75 feet from streams. The Board of Environmental Protection has developed guidelines to serve as a minimum for municipalities preparing these ordinances. These guidelines address structure setback and location; minimum lot sizes; and establish districts within the shoreland zone. The statute also requires towns to adopt agriculture guidelines, timber harvesting guidelines, and limits on clearing of shoreline vegetation.

The mandatory shoreland zoning ordinance must include the following standards for road construction in the shoreland zone:

a. Roads and driveways must be setback at least 100 feet from the normal high-water line of great ponds classified as GPA and rivers flowing to these ponds, and 75 from the normal high-water line for other water bodies and wetlands, unless no other reasonable alternative exists in which case the local planning board may reduce the setback to 50 feet and impose other erosion and sediment control measures;

b. On slopes greater than 20%, the setback shall be increased by 10% for every 5% increase in slope;

c. Existing public roads may be expanded within the legal right-of-way regardless of its setback from the waterway.

d. New permanent roads are not permitted within the shoreland zone along Significant River Segments, except to provide access to structures or if no reasonable alternative route exists;

e. New roads and driveways are prohibited in Resource Protection district except to provide access to permitted uses or if no reasonable alternative exists;

f. Road banks shall be no steeper than 2:1 and shall be graded and stabilized according to required erosion and sediment control measures;

g. Road grades shall be no greater than 10% except for segments less than 200 feet;

h. roads shall be designed, constructed and maintained to empty onto an unscarified buffer strip at least 50 feet plus two time the average slope and runoff onto the strip shall be diffused to increase infiltration and decrease channelization;

i. Ditch relief shall be installed to direct drainage to an unscarified buffer strip before the flow gains sufficient volume or head to erode the road, including size and spacing requirements;

j. Ditches, culverts, bridges, dips and other stormwater control structures shall be maintained on a regular basis.

Land Use Regulation (12 MRSA § 681 et seq.)

The Land Use Regulation Commission reviews proposals for road and bridge construction in unorganized territories. Applications for these projects require three site plans (overhead, cross section and profile); soils information; and a drainage, stabilization and erosion control plan. These plans are reviewed by LURC using the Maine Erosion and Sedimentation Control Handbook.

Comprehensive Planning and Land Use Regulation Act (30-A MRSA § 4311 et seq.)

This law establishes requirements for the development of a local growth management program, which includes a comprehensive plan and an implementation program (i.e. zoning and other land use ordinances; capital improvements program). Under the Act, municipalities that want to regulate land uses beyond the mandatory shoreland zoning requirements must ensure that their land use ordinances are consistent with a local comprehensive plan that is consistent with the minimum requirements of the Act. All local land use ordinances that do not conform to an approved comprehensive plan are void after January 1, 1998 for municipalities that received planning and implementation grants from the State prior to December 1991; and after January 1, 2003 for all other municipalities.

Comprehensive plans and zoning ordinances are reviewed by the Department of Economic and Community Development for consistency with the Act. Comprehensive plans must include the following elements:

1. an inventory and analysis of various resources in the municipality, including significant water resources (such as estuaries and coastal waters) and their vulnerability to degradation;

2. a policy development section which promotes 10 state planning goals, one of which is to protect water quality and manage the quantity of the state's water resources, and promotes the state's 9 coastal policies, one of which is to protect coastal water quality;

This law provides towns with an opportunity to adopt ordinances that protect sensitive areas from development, limit land disturbance and impervious surface, and protect natural drainages, all in conformity with this management measure.

2. Management Issues

1. Consider marking water bodies on all DOT site plans.

2. Consider including road and bridge construction best management practices as a formal DOT policy for road construction projects.

3. Consider adding limitations on land disturbance for clearing or grading to the NRPA and LURC standards.

B. Bridges

Site, design and maintain bridge structures so that sensitive and valuable aquatic ecosystems and areas providing important water quality benefits are protected from adverse effects.

1. Existing Programs

Bridges are designed and reviewed under the same programs for roads, above.

2. Management Issues

See above.

C. Erosion and Sediment Control at Construction Projects

(1) Reduce erosion and, to the extent practicable, retain sediment during and after construction, and
(2) Prior to land disturbance, prepare and implement an approved erosion control plan or similar administrative document that contains erosion and sediment control provisions.

This measure applies to **all new, replaced, restored, and rehabilitated road, highway and bridge construction** projects in order to control erosion and offsite movement of sediment.

1. Existing Programs

Best Management Practices for Erosion and Sediment Control

This Manual was created by the Department of Transportation in 1992 to specifically address road and bridge construction. it includes descriptions of the following measures:

1. Temporary mulching
2. Temporary grass and legume cover
3. Permanent grass and legume cover
4. Sodding
5. Trees, shrubs, Vines and ground covers
6. Permanent mulching
7. Tree protection
8. [reserved]
9. Vegetated filter strip
10. Pit reclamation
11. Vegetated streambank stabilization
12. Loam
13. Loam substitutes and soil amendments
14. Sediment barriers
15. Temporary check dams
16. Storm drain inlet protection
17. Dust control
18. Disposal of toxic dredge disposal
19. Cofferdam sedimentation Basin
20 - 29. [reserved]
30. Culverts
31. Pipe inlet protection
32. Pipe outlet protection
33. [reserved]
34. Temporary slope drain
35. [reserved]
36. Vegetated waterway (ditch)
37. Stone ditch protection (riprap)
38. Road ditch turnout
39. Level spreader
40. Temporary diversion

41. Diversion
42. Temporary stream crossing
43. Permanent stream crossing
44. Temporary stream diversion
45. Streambank stabilization
46. Sediment trap
47. Cofferdam sedimentation basin
48. Disposal of toxic dredge spoils.

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources, including coastal wetlands, freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks. A state permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer; will not unreasonably interfere with the natural flow of the water; and will not violate any state water quality law including those governing classification of state waters. This permitting authority may be delegated to municipalities that meet certain requirements.

Proposed road construction is reviewed by DEP under this statute. Erosion and sedimentation controls are applied on a case-by-case basis using the DOT Erosion and Sediment Control Handbook and the State Erosion and Sediment Control Handbook. A Permit-by-Rule is available for projects that are 25-100 ft from the protected resource. This rule requires implementation of erosion and sediment control measures. In addition, some road construction projects proposed by the Department of Transportation may also qualify for a Permit-by-Rule which imposes performance standards to reduce erosion and sedimentation and protect natural drainage.

Site Location of Development (38 MRSA § 481 et seq.)

Local or private road construction that disturbs more than 3 acres of land requires a permit from DEP. The standards for granting these permits include no adverse affect on water quality; no unreasonable erosion or sediment transfer, no unreasonable risk to groundwater; and no unreasonable risk of flood. The regulations interpreting these standards require an erosion and sedimentation control plan and protection of natural drainage ways. The DEP uses the Maine Erosion and Sedimentation Control Handbook to review these applications.

Land Use Regulation (12 MRSA § 681 et seq.)

The Land Use Regulation Commission reviews proposals for road and bridge construction in unorganized territories. Applications for these projects require three site plans (overhead, cross section and profile); soils information; and a drainage, stabilization and erosion control plan. These plans are reviewed by LURC using the Maine Erosion and Sedimentation Control Handbook.

This law establishes requirements for the development of a local growth management program, which includes a comprehensive plan and an implementation program (i.e. zoning and other land use ordinances; capital improvements program). Under the Act, municipalities that want to regulate land uses beyond the mandatory shoreland zoning requirements must ensure that their land use ordinances are consistent with a local comprehensive plan that is consistent with the minimum requirements of the Act. All local land use ordinances that do not conform to an approved comprehensive plan are void after January 1, 1998 for municipalities that received planning and implementation grants from the State prior to December 1991; and after January 1, 2003 for all other municipalities.

Comprehensive Planning and Land Use Regulation Act (30-A MRSA § 4311 et seq.)

Comprehensive plans and zoning ordinances are reviewed by the Department of Economic and Community Development for consistency with the Act. Comprehensive plans must include the following elements:

1. an inventory and analysis of various resources in the municipality, including significant water resources (such as estuaries and coastal waters) and their vulnerability to degradation;

2. a policy development section which promotes 10 state planning goals, one of which is to protect water quality and manage the quantity of the state's water resources, and promotes the state's 9 coastal policies, one of which is to protect coastal water quality;

This law provides towns with an opportunity to adopt ordinances that minimize erosion and require erosion and sedimentation control plans in conformity with this management measure.

2. Management Issues

1. Develop best management practices for bridge maintenance/rehabilitation for cleaning and painting structural steel.

2. Consider ways to expand training of local road crews.

D. Construction Site Chemical Control

(1) Limit the application, generation and migration of toxic substances;

(2) Ensure the proper storage and disposal of toxic materials; and

(3) Apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface water.

This measure applies to construction activities on sites **less than five (5) acres** that do **not** have an NPDES permit. This does **NOT** apply to: (1) construction of a single family residence on 1/2 acre or more; or (2) construction that does not disturb more than 5,000 sq ft. of land.

1. Existing Programs

Site Location of Development (38 MRSA § 481 et seq.)

Local or private road construction that disturbs more than 3 acres of land requires a permit from DEP. The standards for granting these permits include no adverse affect on water quality; no unreasonable erosion or sediment transfer, no unreasonable risk to groundwater; and no unreasonable risk of flood. Permit applications must include an oil spill prevention control and containment plan for chemicals used during construction.

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources, including coastal wetlands, freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks. A state permit from DEP is required for dredging, draining, filling and construction in or around these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer; will not unreasonably interfere with the natural flow of the water; and will not violate any state water quality law including those governing classification of state waters. This permitting authority may be delegated to municipalities that meet certain requirements.

Road construction projects which require fertilization are subject to limitations of the type and amount of fertilizer on a case-by-case basis. A Permit-By-Rule is available for projects that are 25-100 feet of a protected resource. This rule requires the use of "quick release" fertilizer and limits fertilizer application rates.

Land Use Regulation (12 MRSA § 681 et seq.)

The Land Use Regulation Commission reviews proposals for road and bridge construction in unorganized territories. Applications for these projects require three site plans (overhead, cross section and profile); soils information; and a drainage, stabilization and erosion control plan. These plans are reviewed by LURC using the Maine Erosion and Sedimentation Control Handbook. The Handbook and the LURC guidelines for soil stabilization suggest the use of "quick release" fertilizer and suggest fertilizer application rates.

DOT Standard Specifications for Highways and Bridges

The specifications for every road construction contract issued by the DOT require the application of certain types fertilizers and limit application rates. There is also an ongoing DOT study to determine specifications for controlling hazardous materials used for bridge construction.

2. Management Issues

1. Consider encouraging or requiring limits on the use of toxic substances at construction sites.

2. Consider designating areas for handling and storing toxic chemicals.

E. Operation and Maintenance

Incorporate pollution prevention procedures into the operation and maintenance of roads, highways and bridges to reduce pollutant loadings to surface waters.

This measure applies to **existing, restored and rehabilitated roads, highways and bridges.**

1. Existing Programs

Department of Transportation Training Programs

The DOT operation and maintenance program trains employees in the use of the BMP's listed in the BMP Manual for Erosion and Sediment Control. Thus, all state maintained transportation facilities are operated and maintained under this policy. DOT also sponsors a training program for local road maintenance which has been well attended.

Road Salt/Sand Storage Regulation (38 MRSA § 451-A)

This law requires salt and sand piles to be covered in order to prevent leaching.

2. Management Issues

1. Consider ways to increase staff for training and supervision of maintenance crews.

2. Consider ways to increase funding for additional training of local road crews.

3. Consider developing best management practices for bridge maintenance.

F. Existing Road, Highway, and Bridge Runoff Systems

Develop and implement runoff management systems for existing roads, highways and bridges to reduce runoff pollutant concentrations and volumes entering surface waters.

1. Existing Programs

Comprehensive Planning and Land Use Regulation Act (30-A MRSA § 4311 et seq.)

This law establishes requirements for the development of a local growth management program, which includes a comprehensive plan and an implementation program (i.e. zoning and other land use ordinances; capital improvements program). Under the Act, municipalities that want to regulate land uses beyond the mandatory shoreland zoning requirements must ensure that their land use ordinances are consistent with a local comprehensive plan that is consistent with the minimum requirements of the Act. All local land use ordinances that do not conform to an approved comprehensive plan are void after January 1, 1998 for municipalities that received planning and implementation grants from the State prior to December 1991; and after January 1, 2003 for all other municipalities.

Comprehensive plans and zoning ordinances are reviewed by the Department of Economic and Community Development for consistency with the Act. Comprehensive plans must include an implementation strategy that designates of growth and rural areas (i.e. a future land use plan), ensures protection of water bodies, and specifies a capital investment plan (i.e. public facilities and services needed to meet projected growth and development); and The implementation program, including the local zoning ordinance, must be consistent with the implementation strategy developed in the comprehensive plan.

Nonpoint Source Pollution Program (38 MRSA § 410-H et seq.)

This program provides ongoing technical assistance and grants to towns who wish to retrofit urban areas to decrease NPS pollution. This program has identified priority water bodies which require attention based upon water quality. Priority retrofit opportunities are addressed on yearly basis in accordance with the State NPS Management Plan.

2. Management Issues

1. Consider ways to increase funding for retrofitting roads that are nonpoint source pollution problems.

2. Consider ways of identifying specific roads and bridges that require retrofits.

MARINAS

Under the federal Clean Water Act, a federal permit is required from EPA for stormwater discharges from certain marinas. These include marinas which offer a range of marine services including, boat and slip rentals, boat maintenance and repair, and boat storage. Marinas which do not offer these services (e.g. fueling only without maintenance and repair services) do not need a stormwater permit. These Management Measures apply only to those marinas that do not need a stormwater permit, including:

- Any facility with 10 or more slips, piers where 10 or more boats may tie up, or any facility where a boat for hire is docked;
- Boat maintenance or repair yards adjacent to the water;
- Any federal, state or local facility that involves recreational boat maintenance or repair that is on or adjacent to the water;
- Public or commercial boat ramps;
- Any residential or planned community marina with 10 or more slips; and
- Any mooring field where 10 or more boats are moored.

I. Siting and Design

A. Marina Flushing Management

Site and design marinas such that tides and/or currents will aid in flushing of the site or review its water regularly.

This measure applies to all **new and expanding** marinas.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitats. A state permit from DEP is required for dredging, draining, filling in or around these areas, as well as construction, reconstruction or expansion of "permanent structures" (e.g., piers, docks, causeways, bridges, marinas, buildings) that are in, on or over the water for any period exceeding 7 months. To grant a permit, DEP must make certain findings, including:

- The activity will not unreasonably interfere with existing scenic, aesthetic, recreational or navigational uses; and
- the activity will not unreasonably interfere with the natural flow of surface or subsurface water;

Siting and design of marinas are considered under this authority on a case-by-case basis.

2. Management Issues

1. Consider better defining the term "expanding" marina. This includes a determination of: (1) activities that change the physical configuration or construction of the marina; (2) activities that significantly change the number of vessels accommodated; or (3) the operational changes that significantly change the potential impact of the marina. This determination will most likely be done on a case-by-case basis, and may allow smaller marinas to rebuild after natural catastrophes without being subject to all the siting and design management measures.

2. Develop best management practices for marine related industries to be used by permit applicants for designing a marina and by DEP during the review of permit applications for marinas.

3. Consider using modeling to predict flushing and circulation of semi-enclosed marinas.

B. Water Quality Assessment

Assess water quality as part of marina siting and design.

This measure applies to all **new and expanding** marinas.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitats. A state permit from DEP is required for dredging, draining, filling that will impact these areas, as well as construction, reconstruction or expansion of "permanent structures" (e.g., piers, docks, causeways, bridges, marinas, buildings) that are in, on or over the water for any period exceeding 7 months. To grant a permit, DEP must make certain findings, including:

- the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer from the terrestrial environment to the marine or freshwater environment;
- the activity will not violate any state water quality law including those governing classification of state waters; and
- if the activity involves dredging, dredge spoils disposal or transporting dredge spoils by water, the transportation route minimizes the adverse impacts on the fishing industry and the disposal site is geologically suitable.

A Permit-by-Rule is available for the construction or expansion of pile supported piers and wharves and installations of pilings in coastal wetlands. The standards for this rule are designed to insure that these activities will not unreasonably interfere with existing scenic, aesthetic or navigational uses or will not unreasonably harm estuarine or marine fisheries. These standards include the following water quality protection:

1. No wood treated with creosote or pentachlorophenol shall be used below the mean high water line.

2. Lumber pressure-treated with materials such as chromated copper arsenate (CCA) shall be cured on dry land in such a manner as to expose all surfaces to the air for a period of at least 21 days prior to construction.

2. Management Issues

1. Consider requiring water quality monitoring as a permit condition for new marinas.

2. Consider using water quality modeling to predict impacts from proposed marinas.

C. Habitat Assessment

Site and design marinas to protect against adverse effects on shellfish resources, wetlands, submerged aquatic vegetation, or other important riparian and aquatic habitat areas as designated by local, State, or Federal governments.

This measure applies to all **new and expanding** marinas.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitats. A state permit from DEP is required for dredging, draining, filling that will impact these areas, as well as construction, reconstruction or expansion of "permanent structures" (e.g., piers, docks, causeways, bridges, marinas, buildings) that are in, on or over the water for any period exceeding 7 months. To grant a permit, DEP must make certain findings, including:

- the activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, aquatic habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life; and
- if the activity involves dredging, dredge spoils disposal or transporting dredge spoils by water, the transportation route minimizes the adverse impacts on the fishing industry and the disposal site is geologically suitable.

A Permit-by-Rule is available for the construction or expansion of pile supported piers and wharves and installations of pilings in coastal wetlands. The standards for this rule are designed to insure that these activities will not unreasonably interfere with existing scenic, aesthetic or navigational uses or will not unreasonably harm estuarine or marine fisheries. These standards include the following habitat protection measures:

1. Take photographs of the site before construction.

2. Take photographs of the site within 20 days after construction is complete and revegetation of disturbed areas.

3. Submit a copy of the site design plan to DEP.

4. Submit a copy of the site design plan to the Army Corps of Engineers.

5. Structures shall not be located in, on or over emergent marsh vegetation.

6. Structures shall not located in an area containing significant wildlife habitat.

7. Commercial or public piers shall have a maximum width of 12 feet and shall be limited to the minimum size necessary to provide access to boats intended to use the facility.

8. Non-commercial, private piers shall have a maximum width of 6 feet and shall be limited to the minimum size necessary to accomplish their purpose.

9. No wood treated with creosote or pentachlorophenol shall be used below the mean high water line.

10. Lumber pressure-treated with materials such as chromated copper arsenate (CCA) shall be cured on dry land in such a manner as to expose all surfaces to the air for a period of at least 21 days prior to construction.

11. Piers, wharves and pilings shall be set back at least 25 feet from property lines, or 50 feet from other structures that are fixed in place below the normal high water line and not owned or controlled by the applicant, whichever is greater, unless a letter of permission is granted by the abutting or other controlling property owner.

Mandatory Shoreland Zoning (38 MRSA § 435 et seq.)

To aid in the prevention and control of water pollution, all municipalities must enact zoning ordinances to protect shoreland areas 250 feet from high water line and coastal wetlands. The Board of Environmental Protection has approved guidelines to serve as a minimum for municipalities preparing these ordinances. These guidelines must address structure setback and location; minimum lot size; and establishment of districts within the shoreland zone. Coastal towns must also address coastal management policies defined in 38 MRSA § 1801.

If a municipality fails to adopt an acceptable shoreland zoning ordinance, the Board of Environmental Protection may impose an ordinance which is binding in that town. Municipalities are also required to appoint a code enforcement officer to enforce the provisions of the shoreland zoning ordinance.

The guidance establishes four districts within the shoreland zone which may be further supplemented by the towns. Under this zoning system, marinas are sited only in certain districts and important wildlife habitats are protected from development by other districts.

(1) Resource Protection District -- includes areas within 250 ft of wetlands designated as "moderate" or "high" habitat value by the Department of Inland Fisheries and Wildlife; habitats for endangered or threatened species; high and moderate deer wintering yards and travel corridors; high and moderate value habitat for waterfowl and wading birds; critical spawning and nursery areas for Atlantic sea run salmon; and shorebird nesting, feeding and staging areas and seabird nesting islands. In addition, this district includes 100 year flood plains of rivers; two (2) contiguous acre lots with sustained slopes of 20% or greater; two (2) contiguous acres of isolated wetlands; and areas subject to severe erosion. Towns may also include other areas of local significance.

(2) Limited Residential District -- areas suitable for residential and recreational use.

(3) Limited Commercial District -- areas of mixed, light commercial and residential use. Industrial uses are prohibited.

(4) General Development District -- areas of two or more contiguous acres devoted to commercial, industrial or intensive recreational activities.

(5) Commercial Fisheries/Marine Activities District -- areas where there is an existing pattern water dependent uses and areas suitable for functionally water dependent uses.

2. Management Issues

1. Consider including habitat assessment as a regular part of the permit application (e.g., rapid assessment; historic habitat functions)

2. Identify habitat areas that have been impacted in the past but may be restored.

D. Shoreline Stabilization

Where shoreline erosion is a nonpoint source pollution problem, shorelines should be stabilized. Vegetative methods are strongly preferred unless structural methods are more cost effective, considering the severity of wave and wind erosion, offshore bathymetry, and the potential adverse impact on other shorelines and offshore areas.

This measure applies to all **new and expanding** marinas.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A state permit from DEP is required for dredging, draining, filling in or around these areas, as well as construction, reconstruction or expansion of "permanent structures" (e.g., piers, docks, causeways, bridges, marinas, buildings) that are in, on or over the water for any period exceeding 7 months.To grant a permit, DEP must make certain findings, including:

- the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer from the terrestrial environment to the marine or freshwater environment;

This permitting authority allows DEP to impose limitations on disturbance of soils and destruction streambanks on a case-by-case basis. There is a preference for vegetated controls over structural controls whenever feasible. The DEP also controls streambank erosion by requiring best management practices included in the Erosion and Sediment Control Handbook.

Erosion and Sediment Control Handbook

This manual describes a number of best management practices that can be applied to any project , including marinas. These include methods of shoreline stabilization, both vegetated and structural.

2. Management Issues

None.

E. Storm Water Runoff Management

Implement effective runoff control strategies which include the use of pollution prevention activities and the proper design of hull maintenance areas.

Reduce the average annual loadings of total suspended solids (TSS) in runoff from hull maintenance areas by 80 percent. For the purposes of this measure, an 80 percent reduction of TSS is to be determined on an average annual basis.

This measure applies to all **new and expanding** marinas. This measure also applies to areas in existing marinas used for **hull maintenance** (i.e. scraping, sanding and painting). This measure does NOT apply to runoff that enters marina property from upland sources.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A state permit from DEP is required for dredging, draining, filling that will impact these areas, as well as construction, reconstruction or expansion of "permanent structures" (e.g., piers, docks, causeways, bridges, marinas, buildings) that are in, on or over the water for any period exceeding 7 months. To grant a permit, DEP must make certain findings, including:

- the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer from the terrestrial environment to the marine or freshwater environment; and
- the activity will not violate any state water quality law including those governing classification of state waters.

This permitting authority allows DEP to impose stormwater controls on a case-by-case basis. A Permit-by-Rule is available for land disturbance activities that are 25-100 feet from a protected resource. The standards for this rule include a minimum 25 ft buffer (vegetated filter strip) on slopes less than 20%, and a 100 foot buffer on steeper slopes.

Mandatory Shoreland Zoning (38 MRSA § 435 et seq.)

To aid in the prevention and control of water pollution, all municipalities must enact zoning ordinances to protect shoreland areas 250 feet from the normal high-water line of rivers, great ponds and tidal waters; 250 feet from the upland edge of coastal and freshwater wetlands; and 75 feet from streams. The Board of Environmental Protection has approved guidelines to serve as a minimum for municipalities preparing these ordinances. These guidelines address structure setback and location; minimum lot sizes; and establish districts within the shoreland zone. The statute also requires towns to adopt agriculture guidelines, timber harvesting guidelines, and limits on clearing of shoreline vegetation.

If a municipality fails to adopt an acceptable shoreland zoning ordinance, the Board of Environmental Protection may impose an ordinance which is binding in that town. Municipalities are also required to appoint a code

enforcement officer to enforce the provisions of the shoreland zoning ordinance.

With regard to stormwater controls, the municipal shoreland zoning ordinance must include stormwater control provisions for new development in order to minimize stormwater flow, retain natural drainage features and to maintain stormwater control structures. There are also buffer requirements for all new structures which range as follows:

- no buffer for water dependent structures in Commercial Fisheries/Maritime Activity districts;

- 25 ft vegetated buffer for structures in General Development districts;

- 75 ft vegetated buffer for structures around waterbodies and wetlands; and

- 100 ft vegetated buffer for structures near great ponds classified as GPA, and rivers flowing to these great ponds.

Parking areas must meet the same setback requirements. However, the setbacks may be reduced to 50 ft from the high water line or upland edge of a wetland, if no other reasonable alternative exists. Parking areas in Commercial Fisheries/Maritime Activity districts are set back 25 ft. In terms of design criteria, parking areas must be adequately sized for the proposed use and designed to "prevent stormwater runoff from flowing directly into a water body, and where feasible, to retain all runoff on-site."

2. Management Issues

1. Adopt standards for stormwater retention or treatment for new or expanding marinas.

2. Consider requiring/referencing best management practices, other than buffer strips, in these authorities.

3. Adopt stormwater requirements for hull maintenance areas in existing marinas.

F. Fueling Station Design

Design fueling stations to allow for ease in cleanup of spills.

This measure applies to all **new and expanding** marinas where fueling stations will be installed.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A state permit from DEP is required for dredging, draining, filling in or around these areas, as well as construction, reconstruction or expansion of "permanent structures" (e.g., piers, docks, causeways, bridges, marinas, buildings) that are in, on or over the water for any period exceeding 7 months.To grant a permit, DEP must make certain findings, including:

- the activity will not violate any state water quality law including those governing classification of state waters.

This law allows DEP to impose requirements for oil spill prevention and cleanup at new and expanding marinas on a case-by-case basis.

2. Management Issues

1. Consider adopting specific requirements for fuel station designs and siting, including spill contingency plans and spill containment equipment.

G. Sewage Facility

Install pumpout, dump station, and restroom facilities where needed at new and expanding marinas to reduce the release of sewage to surface waters. Design these facilities to allow ease of access and post signage to promote use by the boating public.

This measure applies to **new and expanding** marinas in areas where adequate marine sewage collection facilities do not exist. Marinas that do not provide services for vessels that have marine sanitation devices do NOT have to have pumpouts, although dump stations for portable toilets and restrooms should be available.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A state permit from DEP is required for dredging, draining, filling in or around these areas, as well as construction, reconstruction or expansion of "permanent structures" (e.g., piers, docks, causeways, bridges, marinas, buildings) that are in, on or over the water for any period exceeding 7 months.To grant a permit, DEP must make certain findings, including:

- the activity will not violate any state water quality law including those governing classification of state waters.

This law allows DEP to impose requirements for sewage pump out facilities at new and expanding marinas on a case-by-case basis.

Watercraft Sewage Pumpout Facilities at Marinas (38 MRSA § 423-B)

By June 1, 1990, marinas serving coastal waters shall provide or provide through contractual agreements facilities to remove sanitary wastes from watercraft holding tanks. "Marina" is defined as any commercial facility that provides supplies and services and has the capacity to provide slip space or mooring for 18 or more vessels which exceed 24 feet in length.

2. Management Issues

1. Consider amending the definition of "marina" to reduce the number of vessels serviced from 18 to 10.

II. Marina and Boat Operation and Maintenance

A. Solid Waste Management

Properly dispose of solid wastes produced by the operation, cleaning, maintenance, and repair of boats to limit entry of solid wastes to surface waters.

This measure applies to all **new and expanding** marinas where fueling stations will be installed.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A state permit from DEP is required for dredging, draining, filling that will impact these areas, as well as construction, reconstruction or expansion of "permanent structures" (e.g., piers, docks, causeways, bridges, marinas, buildings) that are in, on or over the water for any period exceeding 7 months.To grant a permit, DEP must make certain findings, including:

- the activity will not violate any state water quality law including those governing classification of state waters.

This law allows DEP to impose requirements for solid waste disposal at new and expanding marinas on a case-by-case basis.

Waste Discharge from Watercraft (38 MRSA § 423)

This law prohibits the discharge of any pollutant from any vessel in state waters.

Portland Harbor Marine Debris Council

This is a non-profit organization which was formed to address marine debris in Portland Harbor. The council funds dumpsters and used oil collection facilities along the waterfront and provides public education on this issue.

2. Management Issues

1. Consider designating areas for hull maintenance.

2. Consider promoting or requiring measures to control sanding residue and measures to clean these areas after use.

3. Consider initiating and providing seed money to expand local marine debris collection programs in other ports.

B. Fish Waste Management

Promote sound fish waste management through a combination of fish-cleaning restrictions, public education, and proper disposal of fish waste.

This measure applies to marinas **where fish waste is determined to be a source of water pollution**. No such areas have been identified in Maine as yet.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A state permit from DEP is required for dredging, draining, filling in or around these areas, as well as construction, reconstruction or expansion of "permanent structures" (e.g., piers, docks, causeways, bridges, marinas, buildings) that are in, on or over the water for any period exceeding 7 months.To grant a permit, DEP must make certain findings, including:

- the activity will not violate any state water quality law including those governing classification of state waters.

This law allows DEP to impose requirements for fish waste disposal at new and expanding marinas on a case-by-case basis.

2. Management Issues

1. Identify areas where fish waste is a pollution problem.

2. Consider designating fish cleaning areas and promoting proper fish cleaning practices.

3. Consider expanding fish composting operations.

C. Liquid Material Management

Provide and maintain appropriate storage, transfer, containment, and disposal facilities for liquid material, such as oil, harmful solvents, antifreeze, and paints, and encourage recycling of these materials.

This measure applies to marinas where liquid materials used in **maintenance, repair or operation of boats** is stored.

1. Existing Programs

There are no state programs which address the handling and storage of hazardous liquid materials, other than hazardous waste.

Oil Discharge Prevention and Pollution Control (38 MRSA § 541)

The discharge of oil into or upon any coastal waters, estuaries, tidal flats, beaches and lands adjoining the seacoast of the State, or into or upon any lake, pond, river, stream, sewer, surface water drainage, ground water or other waters of the State or any public or private water supply or onto lands adjacent to, on, or over such waters of the State is prohibited.

Notwithstanding the prohibition, the DEP may license the discharge of waste, refuse or effluent, including natural drainage contaminated by oil into or upon any coastal waters if, and only if, it finds that such discharge will be receiving the best available treatment and that such discharge will not degrade existing water quality nor perceptibly violate the classification of the receiving waters, nor create any visible sheen upon the receiving waters.

2. Management Issues

1. Consider promoting or requiring standards for the installation of curbs, berms or other barriers around areas used for regular storage of hazardous liquids (i.e. not waste).

2. Consider a public education program to encourage boaters to use proper facilities for disposing of liquids.

D. Petroleum Control Management

Reduce the amount of fuel and oil from boat bilges and fuel tank air vents entering marina and surface waters.

This measure applies to boats that have **inboard fuel tanks**.

1. Existing Programs

There are no state laws or programs which implement measures to reduce petroleum discharges from boats.

2. Management Issues

1. Consider requiring automatic shut-off nozzles for fuel stations.

2. Consider requiring air/fuel separators on air vents for new boats sold in Maine.

3. Consider ways to promote the use of oil absorbing materials for bilges.

E. Boat Cleaning Management

For boats that are in the water, perform cleaning operations to minimize, to the extent practicable, the release to surface waters of (a) harmful cleaners and solvents and (b) paint from in-water hull cleaning.

This measure applies to marinas where boat topsides are cleaned and where hull scrubbing in the water has **shown to result in water sediment quality problems**.

1. Existing Programs

There are no state laws or programs which require specific measures to minimize the release of boat cleaning materials into marine waters.

2. Management Issues

1. Identify areas where boat maintenance is contributing to a marine sediment quality problem.

2. Consider requiring phosphate-free and biodegradable detergents for boat cleaning.

3. Consider banning the practice of scraping boat hulls in the water or in areas where the paint/hull scrapings will enter the water.

F. Public Education

Public education/outreach/training programs should be instituted for boaters, as well as marina owners and operators, to prevent improper disposal of polluting material.

This measure applies to all environmental control authorities where marinas are located, it does **not** require an enforceable mechanism.

1. Existing Programs

Maine Coastal Program

This program administered by the State Planning Office distributes signs and booklets promoting the use of pumpout facilities.

2. Management Issues

1. Consider a public education program for boaters to promote various pollution prevention practices.

G. Maintenance of Sewage Facilities

Ensure that sewage pumpout facilities are maintained in operational condition and encourage their use.

This measure applies to marinas that have marine **sewage disposal facilities**.

1. Existing Programs

Watercraft Sewage Pumpout Facilities at Marinas (38 MRSA § 423-B)

By June 1, 1990, marinas serving coastal waters shall provide or provide through contractual agreements facilities to remove sanitary wastes from watercraft holding tanks. "Marina" is defined as any commercial facility that provides supplies and services and has the capacity to provide slip space or mooring for 18 or more vessels which exceed 24 feet in length.

2. Management Issues

1. Consider promoting/requiring pumpout station inspections and maintenance schedules.

2. Consider distributing dye tablets to test boats for illegal disposal.

H. Boat Operation

Restrict boating activities where necessary to decrease turbidity and physical destruction of shallow-water habitat.

This measure applies to **non-marina surface waters** where boating activities are impacting shallow water habitats.

1. Existing Programs

Watercraft, Snowmobiles and Airmobiles (12 MRSA § 7791 et seq.)

The Commissioner of Inland Fisheries and Wildlife has the power to designate areas off limits to watercraft during time periods critical for wildlife protection.

A "water safety zone" is established 200 feet from the mainland or islands in coastal and inland waters. Any person who operates a watercraft at greater than headway speed in this zone, or in a marina or approved anchorage, is subject to a fine.

2. Management Issues

None.

HYDROMODIFICATION

I. Channelization and Channel Modification

A. Physical and Chemical Characteristics of Surface Waters

(1) Evaluate the potential effects of proposed channelization and channel modification on the physical and chemical characteristics of surface waters in coastal areas;

(2) Plan and design channelization and channel modification to reduce undesirable impacts; and

(3) Develop an operation and maintenance program for existing modified channels that includes identification and implementation of opportunities to improve physical and chemical characteristics of surface waters in those channels.

This measure applies to **public and private channelization and channel modification** activities in order to prevent the degradation of physical and chemical characteristics of surface waters from such activities.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitats. A state permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including:

- the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer;
- the activity will not unreasonably interfere with the natural flow of the water;
- the activity will not violate any state water quality law including those governing classification of state waters; and
- the activity will not cross an "outstanding" river section, unless no other alternative having a less adverse impact exists.

The Permit-By-Rule regulations allow maintenance dredging of up to 7500 cubic yards to occur without a full permit application if the area was dredged within the last ten years and the proposed dredging will not exceed the limits of the last project and will conform to the permit conditions of the last project.

Dredging Management Subcommittee of the State Marine Policy Committee

This committee consists of representatives of the various state agencies that are concerned with dredging activities in the State. The goal of this subcommittee is to develop a state strategy for dredging activities in the state. This includes an ongoing inventory of dredging projects in cooperation with the Army Corps of Engineers, and a

method of prioritizing proposed dredging projects.

2. Management Issues

1. Consider using models to evaluate the effects of proposed channelization projects.
2. Consider identifying best management practices for designing and conducting channelization projects.

B. Instream and Riparian Habitat Restoration

(1) Evaluate the potential effects of proposed channelization and channel modification on instream and riparian habitat in coastal areas;

(2) Plan and design channelization and channel modification to reduce undesirable impacts; and

(3) Develop an operation and maintenance program with specific timetables for existing modified channels that includes identification of opportunities to restore instream and riparian habitat in those channels.

This measure applies to all proposed channelization projects and to areas where past channelization projects have altered the instream habitat such that historical aquatic populations are adversely affected.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitats. A state permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including:

- the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer;
- the activity will not unreasonably interfere with the natural flow of the water;
- the activity will not unreasonably harm wildlife or aquatic habitat;
- the activity will not violate any state water quality law including those governing classification of state waters; and
- the activity will not cross an "outstanding" river section, unless no other alternative having a less adverse impact exists.

The Permit-By-Rule regulations allow maintenance dredging of up to 7500 cubic yards to occur without a full permit application if the area was dredged within the last ten years and the proposed dredging will not exceed the limits of the last project and will conform to the permit conditions of the last project.

DEP Nonpoint Source Program

This program identifies opportunities to restore instream and riparian habitat as part of its watershed management projects.

2. Management Issues

1. Funding for more habitat restoration projects.

2. Consider using models to evaluate the effects of proposed channelization projects on instream and riparian habitat.

3. Consider habitat assessments as regular or required elements of a channelization project.

II. DAMS MANAGEMENT MEASURES

A. Erosion and Sediment Control

(1) Reduce erosion and, to the extent practicable, retain sediment onsite during and after construction, and

(2) Prior to land disturbance, prepare and implement an approved erosion and sediment control plan or similar administrative document that contains erosion and sediment control provisions.

This measure applies to construction of **new dams and maintenance of existing dams** that do **not** have a NPDES permit. The size of the dams to which this measure applies are:

(1) **25 feet** or more in height **and** greater than **15 acre-feet** in capacity; **or**

(2) **6 feet** or more in height **and** greater than **50 acre-feet** in capacity.

1. Existing Programs

Waterway Development and Conservation Act (38 MRSA § 630 et seq.)

No person may construct or structurally alter a hydropower facility without a permit from the Department of Environmental Protection (DEP). Normal operations and maintenance of existing hydropower dams are exempted as long as it does not involve dredging or filling. This permit is based in part upon a showing that the project will not violate water quality standards of the impounded waters and downstream waters. The Department shall also consider whether the project will result in significant benefit or harm to soil stability, coastal and inland wetlands or the natural environment of any surface waters and their shorelands. The permit may be issued upon terms and conditions which address water levels in the impoundment and minimum flows for waters affected by the project. Permit applications must include an erosion and sedimentation control plan as part of a larger environmental mitigation plan. The permit review by DEP uses the NRPA Permit-By-Rule standards for land disturbance as guidelines.

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitats. A state permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer. The permits for these activities require erosion and sedimentation control plans that implement the state BMP's.

The Permit-By-Rule regulations allow land disturbances within 100 ft of a protected resource to occur without a permit if it conforms to standards which apply BMP's for erosion and sedimentation control.

2. Management Issues

None.

B. Chemical and Pollutant Control

(1) Limit application, generation, and migration of toxic substances;

(2) Ensure the proper storage and disposal of toxic materials; and

(3) Apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters.

This measure applies to the **construction of new dams** and construction activities related to **maintenance** of existing dams.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitats. A state permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer.

Land disturbance activities must use a specified "quick release" fertilizer at specified fertilizer application rates. This law also prohibits the use of creosote and pentachlorophenol on structures as wood preservatives.

Land Use Regulation (12 MRSA § 681 et seq.)

The Land Use Regulation Commission reviews large scale development, including dams, in unorganized territories. The applications for construction require preparation of an erosion and sedimentation control plan according to guidelines for soil stabilization. The guidelines include recommended "quick release" fertilizer and application rates.

2. Management Issues

1. Consider encouraging or requiring limits on the use of toxic substances at construction sites.

2. Consider requiring spill contingency plans as a permit condition for construction projects .

3. Consider designating toxic substance control areas for handling and storage as a permit condition for proposed dam construction.

4. Consider designating staging areas for vehicle fueling and maintenance as a permit condition for construction projects.

5. Consider permits requirements to cover, store and isolate construction materials, garbage, sewage, debris, oil, topsoil etc. in order to avoid contaminated runoff.

C. Protection and Surface Water Quality and Instream and Riparian Habitat

Develop and implement a program to manage the operation of dams in coastal areas that includes an assessment of:

(1) Surface water quality and instream and riparian habitat and potential for improvement and

(2) Significant nonpoint source pollution problems that result from excessive surface water withdrawals.

This measure applies to **dam operations** that result in loss of instream and riparian habitat. The size of the dams to which this measure applies are:

(1) **25 feet** or more in height **and** greater than **15 acre-feet** in capacity; **or**

(2) **6 feet** or more in height **and** greater than **50 acre-feet** in capacity.

1. Existing Programs

Waterway Development and Conservation Act (38 MRSA § 630 et seq.)

No person may construct or structurally alter a hydropower facility without a permit from the Department of Environmental Protection (DEP). Normal operations and maintenance of existing hydropower dams are exempted as long as it does not involve dredging or filling. This permit is based in part upon a showing that the project will not violate water quality standards of the impounded waters and downstream waters. The Department shall also consider whether the project will result in significant benefit or harm to soil stability, coastal and inland wetlands or the natural environment of any surface waters and their shorelands. The permit may be issued upon terms and conditions which address water levels in the impoundment and minimum flows for waters affected by the project. Permit applications must include an erosion and sedimentation control plan as part of a larger environmental mitigation plan. The permit review by DEP uses the NRPA Permit-By-Rule standards for land disturbance as guidelines.

Dam Registration, Abandonment and Water Level Act (38 MRSA § 815)

This law requires all dams that are 2 feet in height or impound 15 acre-feet of water to be registered by the owner every 5 years with the DEP. Dams that are not registered are considered abandoned and the state assumes ownership. DEP then reviews petitions and awards the dam to the person best qualified to own and control the dam.

DEP will hold a hearing to determine water levels upon petition of 25% of the upstream or downstream riparian owners or by request of the dam owner, Department of Inland Fisheries and Wildlife, Department of Marine Resources or a chartered public water company possessing withdrawal rights. Evidence at this hearing may be admitted concerning the following:

- public rights of access and use of state waters;
- safety of shoreline owners and the general;
- maintaining fish and wildlife habitat and water quality;

- preventing excessive shoreline erosion;
- accommodating rainfall and runoff;
- public and private water supplies; and
- any use of the dam in power generation.

Any water level order issued by the DEP Commissioner is appealable to the Board of Environmental Protection.

Water Pollution Control (38 MRSA § 418-A)

No person may erect, operate, maintain or use any dam on the portion of the Penobscot River downstream from the Bangor Hydroelectric Company dam at Veazie to the southernmost point of Verona Island, unless specifically authorized by the Legislature.

Coastal Watershed Districts (38 MRSA § 2021 et seq.)

Coastal Watershed Districts may be created by application of municipalities to the Department of Environmental Protection. The district is empowered to conduct research; plan coastal restoration projects; coordinate enact and enforcement of municipal ordinances; adopt and implement coastal protection, management and restoration plans; and adopt and implement plans and programs to coordinate water level management.

River Corridor Commissions (30-A MRSA § 4461 et seq.)

State policy encourages the formation of river corridor commissions which are authorized to develop comprehensive plans to manage the resources and problems cited by rulemaking. The Commissioner of Conservation is authorized to approve formation of commissions and to grant them powers and duties.

Maine's Rivers Act (12 MRSA § 401-407)

The State Planning Office, with assistance from the Department of Inland Fisheries and Wildlife, the Department of Marine Resources, the Department of Environmental Protection and other state agencies as needed, shall develop a comprehensive river resource management plan for each watershed with a hydropower project licensed under the Federal Power Act or to be licensed under the Federal Power Act. These plans shall provide the basis for state agency comments, recommendations and permitting decisions and shall at a minimum include, as applicable, minimum flows, impoundment level regimes, upstream and downstream fish passage, maintenance of fish habitat and habitat productivity, public access and recreational opportunities.

2. Management Issues

1. Consider ways to fund further comprehensive river management plans.

III. STREAMBANK AND SHORELINE EROSION MANAGEMENT MEASURES

A. Management Measure for Eroding Streambanks and Shorelines

(1) Where streambank or shoreline erosion is a nonpoint source pollution problem, streambanks and shorelines should be stabilized. Vegetative methods are strongly preferred unless structural methods are more cost-effective, considering the severity of wave and wind erosion, offshore bathymetry, and the potential adverse impact on other streambanks, shorelines, and offshore areas.

(2) Protect streambank and shoreline features with the potential to reduce NPS pollution.

(3) Protect streambanks and shorelines from erosion due to uses of either the shorelands or adjacent surface waters.

This measure applies to eroding shorelines in coastal bays, and to eroding streambanks in coastal rivers and creeks. This measure does not apply to all eroding shores, **only those that are considered a pollution problem.**

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources--coastal wetlands and sand dunes; freshwater wetlands greater than 10 acres; great ponds; rivers, streams and brooks; fragile mountain areas; and significant wildlife habitat. A state permit from DEP is required for dredging, draining, filling and construction in or around these areas. To grant a permit, DEP must make certain findings, including that the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer; will not unreasonably interfere with the natural flow of the water; and will not violate any state water quality law including those governing classification of state waters. This permitting authority allows the State to impose limitations on disturbance of soils and destruction streambanks. Streambank stabilization measures are imposed on a case-by-case basis, and there is a preference for vegetated controls over structural controls whenever feasible.

DEP Nonpoint Source Program

This program provides technical assistance and grants for shoreline and streambank erosion control projects.

DEP Land Bureau "Green Solutions" Project

This project is funded through the Maine Coastal Program and conducts some demonstration projects for streambank protection using methods that have less adverse environmental impact than traditional engineered solutions.

2. Management Issues

1. Identify coastal shorelines that are pollution problems.

2. Consider a program to fund stabilization projects in these areas using methods developed under the "Green Solutions" project.

WETLANDS PROTECTION

A. Management Measure for Protection of Wetlands and Riparian Areas

Protect from adverse effects wetlands and riparian areas that are serving a significant NPS abatement function and maintain this function while protecting the other existing functions of these wetlands and riparian areas as measured by characteristics such as vegetative composition and cover, hydrology of surface water and ground water, geochemistry of the substrate, and species composition.

This measure is intended to protect wetlands and riparian areas from nonpoint source pollution.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources including all coastal wetlands, freshwater wetlands of 10 acres or more, as well as wetlands associated with great ponds, rivers, streams and brooks. A state permit from DEP is required for dredging, draining, filling and construction that will impact these areas. To grant a permit, DEP must make certain findings, including:

- the activity will not cause unreasonable soil erosion or inhibit natural sediment transfer;
- the activity will not unreasonably interfere with the natural flow of the water; and
- the activity will not violate any state water quality law including those governing classification of state waters.
- the activity will not unreasonably harm freshwater wetland plant habitat or aquatic habitat.

The statute provides for a number of exemptions for specific activities in certain locations. These include forestry activities, maintenance and repair of structures, and maintenance and repair of public works. To qualify for the exemption, however, these activities must still employ some standard erosion control measures. Moreover, a number of smaller scale activities are granted a permit-by-rule if they comply with performance standards outlined in the regulations.

The wetland regulations adopted under this statute divide wetlands into three classifications:

- Class I wetlands are those with the highest wetland values due to their biological functions. This class includes endangered species habitat; unique natural communities; or significant wildlife habitat.

- Class II wetlands are those which do not exhibit the biological functions of Class I wetlands but are important for their value in water quality protection and flood control. This class is defined by its proximity to water bodies.

- Class III wetlands encompass all other wetlands that do not exhibit the characteristics of Class I or II wetlands. These generally include upland wetlands not located near open water.

Applicants are required to perform alternatives analysis and to provide compensation for unavoidable losses of wetland values. The degree of wetland protection varies according to the classification of the wetland. Finally, the regulations allow future applicants to engage in "mitigation banking" to offset future losses of wetlands values.

Mandatory Shoreland Zoning Ordinance (38 MRSA § 435 et seq.)

To aid in the prevention and control of water pollution, all municipalities must enact zoning ordinances to protect shoreland areas 250 feet from the normal high-water line of rivers, great ponds and tidal waters; 250 feet from the upland edge of coastal and freshwater wetlands; and 75 feet from streams. The Board of Environmental Protection has approved guidelines to serve as a minimum for municipalities preparing these ordinances. These guidelines address structure setback and location, minimum lot sizes, and establish Resource Protection, General Development, Limited Residential, Limited Commercial, Commercial Fisheries/Maritime Activity, and Stream Protection districts. The statute also requires towns to adopt shoreline setbacks, agriculture guidelines, timber harvesting guidelines, and limits on clearing of shoreline vegetation.

DEP Wetlands Classification Study

Under a grant from EPA, the DEP is evaluating the effectiveness of Maine's wetland protection program. This study involves classifying 100 wetlands using Maine's current wetland classification system. The study will assess whether the classification system is providing adequate protection to each type of wetland. Specifically, functions and values for each Class 1 wetland are more valuable than Class 2 wetlands which are in turn more valuable than Class 3 wetlands. In addition, it will be determined whether regulated wetlands are valuable than unregulated wetlands. A second phase of this study will develop a data base to document permitted wetlands alterations. This will aid in tracking the extent of wetland loss in the state.

Maine Wetlands Conservation Plan

Under a grant from EPA, the State Planning Office, in cooperation with other state agencies and a diverse task force,will be developing a State Wetland Conservation Plan by July, 1994. This process will include an inventory and assessment of state wetland resources; an evaluation of public and private wetlands protection and restoration programs; development and implementation of a comprehensive state strategy; and a monitoring program to assess the effectiveness of the strategy.

2. Management Issues

There are no Management issues concerning wetlands protection at this time. Any such issues will be identified and addressed in the development of the State Wetlands Conservation Plan.

B. Management Measure for Restoration of Wetland and Riparian Areas

Promote the restoration of the preexisting functions in damaged and destroyed wetlands and riparian systems in areas where the systems will serve a significant NPS pollution abatement function.

This measure is intended to restore the full range of wetland and riparian functions in **areas that have been degraded or destroyed** and would, if restored, serve a pollution abatement function. This measure does **not** require an enforceable mechanism.

1. Existing Programs

Natural Resources Protection Act (38 MRSA § 480-A et seq.)

This law provides protection for certain significant natural resources including coastal wetlands, freshwater wetlands of 10 acres or more, and wetlands associated with great ponds, rivers, streams and brooks. A state permit from DEP is required for dredging, draining, filling and construction in or around these areas. Applications which seek to alter or eliminate wetland must provide some level of mitigation for the lost wetlands functions. restoration of previously degraded wetlands is considered a form of mitigation and is encouraged by DEP.

2. Management Issues

These Management issues may be addressed in the development of the state Wetlands Conservation Plan.

1. Consider developing a state (i.e. non-federal) program to restore degraded wetlands through either public funds or public-private partnerships.

2. Consider developing an inventory of possible wetland restoration sites for use in future mitigation/compensation efforts.

C. Management Measure for Vegetated Treatment Systems

Promote the use of engineered vegetated treatment systems such as constructed wetlands or vegetated filter strips where these systems will serve a significant NPS pollution abatement function.

This measure applies to places where an engineered vegetated treatment system would treat nonpoint source pollution. This measure does **not** require an enforceable mechanism.

1. Existing Programs

Mandatory Shoreland Zoning Ordinance (38 MRSA § 435 et seq.)

To aid in the prevention and control of water pollution, all municipalities must enact zoning ordinances to protect shoreland areas 250 feet from the normal high-water line of rivers, great ponds and tidal waters; 250 feet from the upland edge of coastal and freshwater wetlands; and 75 feet from streams. The Board of Environmental Protection has approved guidelines to serve as a minimum for municipalities preparing these ordinances. These guidelines address structure setback and location, minimum lot sizes, and establish Resource Protection, General Development, Limited Residential, Limited Commercial, Commercial Fisheries/Maritime Activity, and Stream Protection districts. The statute also requires towns to adopt shoreline setbacks, agriculture guidelines, timber harvesting guidelines, and limits on clearing of shoreline vegetation. Vegetated buffer strips are used throughout this ordinance requirement.

Maine Nonpoint Source Program

This non-regulatory program promotes the use of vegetated treatment systems for stormwater runoff by offering technical assistance to towns and performing demonstration projects.

2. Management Issues

Management issues concerning the use of vegetated treatment systems will be addressed in the development of the state Wetlands Conservation Plan.

1. Identify coastal areas that could use vegetated treatment systems for pollution control.

2. Consider promoting constructed wetlands for stormwater or wastewater treatment.

APPENDIX A

MAINE COASTAL NONPOINT SOURCE PROGRAM

KEY ELEMENTS

I. Plan for Implementation of Management Measures for identified NPS Sources

A. Identify categories of sources to be covered, including justification for excluding sources.

- Focus implementation on significant contributors to particular coastal water quality problems or pose an unacceptable risk AND for which EPA has issued guidance (i.e. agriculture, forestry, urban runoff, marinas, hydromodification, wetlands).

B. Describe management measures to be implemented for each category.

- Existing programs may meet the requirements of the statute.
- State must review existing program to determine whether it is in conformity with the NOAA/EPA guidance in terms of substance and enforceability.
- If not, state must decide which new management measures to include and how they are to be enforced.

C. Provide technical documentation for any alternative management measures.

- If state uses, or is going to use, management measures which are different from the guidance, it must assemble the technical support for those measures.

II. Plan for Additional Management Measures to be Implemented in certain areas

A. Identify coastal waters not maintaining water quality standards.

- Impaired of threatened coastal waters identified in the 1992 CWA § 305(b) Report;
- Coastal waters identified in the CWA § 303(d)(1)(a) list as requiring Total Maximum Daily Load (TMDL) calculations in part due to nonpoint source pollution;

- Coastal waters identified in the state CWA § 304(l) list as impaired by nonpoint source pollution;

- Coastal waters for which dilution calculations or models indicate non-attainment of state water quality standards;

- Coastal waters identified in the CWA § 319 nonpoint assessment as impaired or threatened;

- Coastal waters with identified problems by federal, state, local government, private research groups or the public;

- Describe the validity of the data (i.e. monitored or evaluated; limited availability of data);

- Consider adopting water quality standards for specific common nonpoint source pollutants;

B. Identify land uses contributing to water quality degradation in those areas.

- Review source categories and land maps to identify potential sources in the watershed serving the threatened waterbody.

- Analyze the biological and physical impacts of these activities as well as the physical characteristics of the environment.

- Determine whether these land uses require additional management measures.

C. Identify critical coastal areas.

- Define critical areas -- land areas adjacent to threatened waters which require further controls. Critical areas may also be focused on waters that have acceptable water quality, but deserve more protection (e.g., parks or preserves).

- Critical areas may either be strips of shoreline around the protected waters or site specific areas based on monitoring and land use evaluation.

D. Describe state-developed additional management measures.

- If information shows that base line management measures will not be adequate to bring coastal water up to the water quality standard, implement additional measures immediately.

- Otherwise, establish monitoring for effectiveness of base line management measures to determine whether they are sufficient to bring coastal water within the standard (i.e. whether additional measures are needed).

E. Provide for a process to review and change additional management measures.

- Monitor water quality to determine effectiveness of additional management measures.

F. Develop and describe a technical assistance program to local governments and public for additional management measures.

III. Coastal Zone Boundary

A. Develop a proposal to modify coastal zone boundary or describe authorities within coastal NPS boundary (watershed).

- State must review the coastal boundary and analyze whether it contains all significant sources of NPS pollution to coastal waters.

- If a modification is necessary, a proposal to change the boundary must be made, or the state must show that it has the necessary authorities to control NPS pollution within this boundary.

IV. Implementation of all Management Measures

A. Describe the scope, structure and coverage of the state implementation program.

B. Describe organization, structure and authorities of lead agencies.

C. Provide a schedule for full implementation of management measures.

D. Submit copies of legislative and administrative authorities for implementation, including enforceable policies and mechanisms.

E. Describe mechanisms for coordination with state agencies and local governments.

F. Provide for operation and maintenance of management measures.

G. Describe inspection procedures.

H. Describe monitoring procedures.

V. Coordinate with state agencies and existing Clean Water Act Programs.

- State agencies must work in conjunction with each other in developing and implementing the plan.

VI. Describe provisions for public participation.

- State must decide when and how to involve the public during the planning and implementation processes.

APPENDIX B

PARTICIPANTS IN THE REVIEW OF MAINE NONPOINT SOURCE PROGRAMS

Agriculture

Peter Mosher
Department of Agriculture, Food and Rural Resources
Bureau of Production and Marketing

David Rocque
Department of Agriculture, Food and Rural Resources
Soil and Water Conservation Commission

Craig Leonard
Department of Agriculture, Food and Rural Resources
Bureau of Production and Marketing

Randy Doak
U.S. Department of Agriculture
Soil Conservation Service

Tammy Gould
Department of Agriculture, Food and Rural Resources
Board of Pesticides Control

Scott Cowger
Department of Environmental Protection
Bureau of Water Quality Control
Division of Environmental Evaluation and Lake Studies

Bill Ferdinand
State Planning Office
Natural Resources Policy Division
Maine Coastal Program

Forestry

Ancyl Thurston
Department of Conservation
Maine Forest Service

Will Johnston
Department of Conservation
Land Use Regulation Commission

Bill LaFlemme
Department of Environmental Protection
Bureau of Land Quality Control
Natural Resources Division

Scott Cowger
Department of Environmental Protection
Bureau of Water Quality Control
Division of Environmental Evaluation and Lake Studies

Bill Ferdinand
State Planning Office
Natural Resources Policy Division
Maine Coastal Program

Urban

Bill LaFlemme
Department of Environmental Protection
Bureau of Land Quality Control
Natural Resources Protection section

Red Robbins
Department of Environmental Protection
Bureau of Land Quality Control
Site Location Division

Rich Baker
Department of Environmental Protection
Bureau of Land Quality Control
Natural Resources Division
Shoreland Zoning section

Will Johnston
Department of Conservation
Land Use Regulation Commission

Christine Olson
Department of Transportation
Office of Environmental Services
Water Resources section

Fran Rudoff
Department of Economic and Community Development
Office of Community Development

Scott Cowger
Department of Environmental Protection
Bureau of Water Quality Control
Division of Environmental Evaluation and Lake Studies

Bill Ferdinand
State Planning Office
Natural Resoures Policy Division
Maine Coastal Program

Marinas

Bill LaFlemme
Department of Environmental Protection
Bureau of Land Quality Control
Natural Resources Division

Scott Cowger
Department of Environmental Protection
Bureau of Water Quality Control
Division of Environmental Evaluation and Lake Studies

Bill Ferdinand
State Planning Office
Natural Resoures Policy Division
Maine Coastal Program

Hydromodification

Dana Murch
Department of Environmental Protection
Bureau of Land Quality Control

Bill LaFlemme
Department of Environmental Protection
Bureau of Land Quality Control
Natural Resources Division

Scott Cowger
Department of Environmental Protection
Bureau of Water Quality Control
Division of Environmental Evaluation and Lake Studies

Bill Ferdinand
State Planning Office
Natural Resoures Policy Division
Maine Coastal Program

Wetlands

Bill LaFlemme
Department of Environmental Protection
Bureau of Land Quality Control
Natural Resources Division

Scott Cowger
Department of Environmental Protection
Bureau of Water Quality Control
Division of Environmental Evaluation and Lake Studies

Bill Ferdinand
State Planning Office
Natural Resoures Policy Division
Maine Coastal Program

APPENDIX C

MAINE COASTAL NONPOINT PROGRAM

MANAGEMENT MEASURE WORKSHEET

SOURCE CATEGORY

MANAGEMENT MEASURE/PROPOSED ALTERNATIVE

I. NEED TO ADDRESS SOURCE? **YES** **NO** **LIMITED** **UNKNOWN**

II. EXISTING PROGRAM

A. PROGRAM(S)

B. LEGISLATION

C. REGULATION(S)

III. PROGRAM DESCRIPTION

A. GEOGRAPHIC EXTENT

B. IMPLEMENTATION OF MANAGEMENT MEASURE

C. LEGAL AUTHORITY

D. AGENCIES WITH AUTHORITY/RESPONSIBILITY

E. NATURE OF PROGRAM (Regulatory/Non-regulatory)

F. STATE LEVEL ENFORCEMENT MECHANISM

G. MONITORING and ENFORCEMENT

H. FINANCIAL RESOURCES (Current and future needs)

I. TECHNICAL RESOURCES (Current and future needs)

J. LENGTH OF TIME IN EXISTENCE

K. OVERALL PROGRAM EFFECTIVENESS (Any evaluations? Data?)