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# **Improving the Effectiveness of Stormwater Management in Maine**



**A Report to the 121<sup>st</sup> Maine Legislature**

Submitted by

**The Maine Department of Environmental  
Protection**

**February 2, 2004**

## **Improving the Effectiveness of Stormwater Management in Maine**

### **CONTENTS**

<b>Executive Summary .....</b>	<b>3</b>
<b>Introduction .....</b>	<b>6</b>
<b>Stakeholder Process .....</b>	<b>8</b>
<b>Stormwater Management Issues .....</b>	<b>9</b>
<b>Guiding Principles for Management Strategy .....</b>	<b>12</b>
<b>Recommendations .....</b>	<b>12</b>
<b>Appendix 1: Stakeholder Participants .....</b>	<b>20</b>
<b>Appendix 2: Rationale for Using Imperviousness for Most at Risk Designation.....</b>	<b>22</b>
<b>Appendix 3 List of Proposed “Most at Risk” Streams ...</b>	<b>24</b>
<b>Appendix 4. Draft Statutory Changes.....</b>	<b>27</b>
<b>Appendix 5. Options for Managing Stormwater.....</b>	<b>30</b>
<b>Appendix 6 Overview of Current Total Maximum Daily Load - TMDL - Program and Regulations .....</b>	<b>31</b>

## **Executive Summary**

The Maine Department of Environmental Protection (Department) has administered the Maine Stormwater Management Law (Stormwater Law) since 1996. The Stormwater Law includes requirements that the Department develop a list of watersheds of bodies of water most at risk from new development, as well as sensitive or threatened regions or watersheds. The Department is required to adopt rules specifying quantity and quality standards for stormwater to apply in those watersheds. In 1997, the Department established lists of lakes and coastal waters, and rivers and streams with public water supplies, along with the quantity and quality standards, but did not develop lists for other rivers and streams due to a lack of data. By 2002, the Department had sufficient data to begin rulemaking, but in the meantime, had identified a number of issues with respect to the stormwater program.

In 2003, the Maine Department of Environmental Protection (Department) introduced a bill to the Maine Legislature, which led to a mandate that the Department report back to the Legislature by February 1, 2004 with recommendations for improving stormwater management in Maine. The mandate required the Department to consult with state and federal agencies and representatives of interested stakeholder groups. The Joint Standing Committee on Natural Resources is authorized to report out legislation based on the recommendations related to storm water management to the Second Regular Session of the 121st Legislature.

A stakeholder group was convened in May 2003, and met monthly thereafter through January 2004. A number of issues were discussed at the meetings. To help guide the development of recommendations, the following guiding principles were agreed to:

1. Stormwater standards should result in meaningful protection. They should accomplish protection without unnecessary requirements; they should be achievable, cost-effective and based on good science.
2. Stormwater standards should not foster an unintended consequence of sprawl, as defined by state policy.
3. Stormwater standards should be understandable. They should be comprehensible and written in plain English. They should not be unnecessarily complex.
4. Stormwater standards should not conflict with other major environmental initiatives.

Department Recommendations

- Enact statutory changes to:
  - Require that all projects subject to the Maine Stormwater Law meet basic water quality protection standards;
  - Set the permit threshold at one acre of disturbance;
  - Allow “license by rule” for infiltration of stormwater; and
  - Regulate existing sources in the watersheds of impaired waters where they are identified as significant contributors to the cause of impairment.
  
- Enact rule changes to:
  - Define and designate “most at risk” watersheds and “sensitive or threatened” regions or watersheds as directed in the Maine Stormwater Law;
  - Revise the quantity and quality standards in the stormwater rules (Chapter 500) to provide more meaningful protection, and to provide applicants with options where on-site treatment of stormwater is not feasible, such as compensation fees or off-site mitigation;
  - Allow for flexible standards for development proposed in an impaired watershed that is also in a municipally designated growth zone if a Local Watershed Management Plan has been developed to address the causes of impairment;
  - Develop improved maintenance requirements for stormwater treatment practices by requiring periodic inspections of those practices by an engineer or other qualified person and certification by the owner or owner’s agents;
  - Resolve problems that have come to light through administering the program since 1997; and
  - Allow for the use of innovative approaches to meeting stormwater standards.
  
- Through the establishment of Total Maximum Daily Loads (TMDLs) , if the Department should identify impaired urban streams where the Department determines it would be infeasible to restore water quality to meet designated uses, then the Department should conduct a Use Attainability Analysis (UAA) for the water resource.
  
- Take the following non-regulatory actions:
  - Continue its education campaign to build the public’s knowledge base on stormwater issues.

- Continue to offer training to a variety of audiences (developers, contractors, consultants, and municipal officials) on proper erosion and sedimentation controls.
- Provide municipalities with tools for developing local stormwater management programs.
- Develop a list of financial assistance options, including bonds, for municipalities or watershed districts seeking to develop and/or implement local management programs.
- Develop information for the regulated community to improve their understanding of what they need to do to comply with state and federal program requirements. This information should also describe ways to minimize stormwater impacts through the use of Low Impact Development measures.

The Department is recommending four statutory changes. These are the only changes the Legislature is being asked to act on at this time. However, to understand the context of those revisions, it is important to become familiar with the nature of the changes the Department is contemplating in rule, particularly with respect to the establishment of a list of streams most at risk from new development. The statute and rule changes are to a large degree inter-dependent. For instance, what the Department will propose for new development standards in the watersheds of impaired streams will depend on whether or not a mechanism is put into place to eventually bring significant existing sources of stormwater into regulation. A less stringent standard for new development could be allowed in rule if existing sources will be included. This is why the Department is not recommending that statutory changes be delayed until after the rules are revised.

## A. Introduction

Stormwater management has become a topic of increasing concern in Maine, both environmentally and politically. As progress has been made in cleaning up our State's waters from end-of-pipe wastewater discharges, the Department is now finding that some of the most significant water quality problems are not from these discharges, but from the cumulative effect of a number of activities ranging from agriculture to development to household management. Pollutants from these activities include toxins, bacteria, sediment and nutrients, and they are often conveyed to lakes, rivers, streams and coastal waters via stormwater runoff.

The Department has been working on stormwater management issues for many years. Much has been learned about the effectiveness of different stormwater treatment practices, known as Best Management Practices (BMPs), through both in-state and national studies. This field of study continues to expand and the Department continues to support research through its Nonpoint Source (NPS) Program, funded through Section 319 of the Federal Clean Water Act. The NPS Program has also allowed the Department to invest in the identification and elimination of pollution sources, as well as conduct education and outreach activity.

The Department has also been managing stormwater through regulatory programs. Controlling erosion and sedimentation from land use activities as well as the control of stormwater, have been provisions of the Site Location Law since the early 1970's. However, standards to treat the quality of stormwater, not just the quantity, did not exist until the passage of the Stormwater Management Law in 1996, and the subsequent rules adopted in 1997. In addition, an Erosion and Sedimentation Control Law (ESC Law) applicable to all organized area of the State was passed in 1996. In recognition of the importance of riparian buffers along our water resources in protecting water quality, the Natural Resources Protection Act (NRPA) was amended in 2001 to regulate removal of vegetation adjacent to those resources. And, in 2003, new federal requirements went into effect under the National Pollutant Discharge Elimination System (NPDES) stormwater program.

The Department's experience administering the Stormwater Law, coupled with the added responsibility of administering the federal program requirements, led Department staff to conclude that we need to re-think how stormwater management should be conducted. The Department introduced a bill to the Legislature in 2003, which led to the following mandate:

**Sec. 5. Report.** By February 1, 2004, the Department of Environmental Protection shall report to the Joint Standing Committee on Natural Resources with recommendations for improving the effectiveness of

storm water management in this State. These recommendations may include draft rules pursuant to the Maine Revised Statutes, Title 38, sections 413 and 420-D to regulate storm water discharges to impaired waters from existing development where necessary to allow restoration of water quality and from new development both during and after construction. The department may also make recommendations concerning other issues such as encouraging the creation of local or regional storm water utility districts and funding storm water management programs at the state and local level, including long-term efforts to inspect, maintain and upgrade or retrofit storm water management systems in impaired or at-risk watersheds or sensitive or threatened regions or watersheds.

The department shall consult with state and federal agencies as well as representatives of interested stakeholder groups, including business and environmental groups and the Maine Municipal Association, when developing these recommendations. The Joint Standing Committee on Natural Resources may report out legislation based on the recommendations related to storm water management to the Second Regular Session of the 121st Legislature.

The Stormwater Management Law requires the Department to “establish by rule a list of watersheds of bodies of water most at risk from new development,” as well as a list of sensitive or threatened regions or watersheds that include “the watersheds of surface waters that are susceptible to degradation of water quality or fisheries because of the cumulative effect of reasonably foreseeable levels of development activity within the watershed of the affected surface waters.” The Department is required to adopt rules specifying quantity and quality standards for stormwater to apply in those watersheds. In 1997, the Department did develop lists of most at risk lakes, coastal waters and streams with public water supplies, and sensitive or threatened watersheds for lakes, and rivers with public water supplies. Quantity and quality standards were also established. However complete lists of most at risk and sensitive rivers and streams were not established due to lack of needed data to support what should be included on the lists. While data became available in 2002, the Department held off on rulemaking

because of the desire of many interested parties to have the Department’s proposal reviewed through a stakeholder process.

The stakeholder process began in the summer of 2002 to help the Department develop language for a general permit for discharges from construction activities, in accordance with Federal stormwater requirements from the National Pollutant Discharge Elimination System (NPDES) Program. The stakeholder group completed that work in December 2002, and then was reconvened in May 2003 to provide input to the Department for this report.

In addition to this report, the Department has developed draft revisions to Chapter 500 of the Stormwater. These revisions address some of the issues and recommendations that appear below, including a proposed list of most at risk streams. A technical sub-group of the current stakeholder group provided



extensive input into the development of the draft revisions, and the draft revisions built upon work done by a previous stakeholder group. A draft is available on the Department's website. However, members of the current stakeholder group have not, as a group, had the opportunity to fully discuss the proposed revisions. The Department intends to continue work on the both Chapters 500 and 502 and to continue to seek input from stakeholders, before initiating rulemaking later in 2004.

## **B. Stakeholder Process**

In 2002, the Department convened two separate stakeholder groups on stormwater management. The groups were convened to provide guidance on how we should implement new federal stormwater requirements from the National Pollutant Discharge Elimination System (NPDES) Program. The NPDES Program includes requirements that 28 municipalities, located in four urban areas of the state (southern border and Portland, Lewiston and Bangor and vicinities) develop and implement stormwater management programs. One stakeholder group provided input on how the state should administer this program with the affected municipalities.

The NPDES Program also requires that the Department regulate all construction activities that create at least one acre of disturbed land and result in a point source stormwater discharge from the site. A second stakeholder group was convened to provide input on how this requirement should be administered, including input on the feasibility of integrating this part of the NPDES Program with the Maine Stormwater Law requirements. Because of a March 2003 deadline for implementing the federal NPDES requirements and the number of issues that the Department raised concerning the state program, the group and the Department concurred that developing an integrated program was not feasible within that timeframe. However, the stakeholders and Department also agreed that discussions should continue on how to address stormwater issues.

The second stakeholder group was reconvened in May 2003 and has met monthly since that time to assist in developing this report. Participants included representatives from the groups identified in the Legislative mandate above. A professional facilitator was hired to run the meetings. A list of participants appears in Appendix 1. A significant amount of time in meetings was spent providing information on how water quality is managed in Maine. Presentations were given on how water quality in streams is assessed, how waters are classified, and the relationship between stream water quality and the amount of development in a watershed.

### **C. Stormwater Management Issues**

Through discussions between Department staff and stakeholders, the following issues were identified that need to be addressed:

1. In recent years, the Department has been monitoring small urban streams and has found many with water quality impacts that are attributed to pollutants in runoff. However, Streams have not yet been added to the “most at risk” or “sensitive or threatened” lists under the Stormwater Law. Department staff has proposed that 64 streams be listed as most at risk based on the percentage of impervious area (7%) in their watersheds. Eighteen of those streams have been monitored and found to be impaired (not meeting their water quality classification; see Appendices 2 and 3). More than 40 of the proposed “most at risk” streams have not yet been monitored, so the list of impaired streams is expected to grow as new bio-monitoring data becomes available. Another 8 streams are also proposed for listing not because of the amount of imperviousness in their watersheds, but because they have also been determined to be impaired due to urban runoff. The Department has only proposed to list a stream as impaired if monitoring data exists that documents the impairment. Stormwater quantity and quality standards have been proposed (to be included in draft rule) that development proposals in these watersheds would have to meet. There is disagreement among stakeholders as to whether it is appropriate to use a single threshold of imperviousness for designating “most at risk” streams, and as to what that level should be.
2. The Classification of Maine Waters law, Title 38 MRSA Section 464 (4)(F)(3) provides that “[t]he department may issue a discharge license ... for a project affecting a water body in which the standards of classification are not met if the project does not cause or contribute to the failure of the water body to meet the standards of classification.” To meet this requirement, applicants under the NPDES Program proposing to discharge stormwater to waters impaired due to urban development will need to take measures to show that there is no net contribution to the impairment. The Department has proposed that applicants for permits issued pursuant to the Stormwater Law also be required to meet this standard. Stakeholders have raised concerns about the cost and technical feasibility for meeting this requirement.
3. Imposing stricter standards on “most at risk” or “sensitive or threatened” watersheds, which in most cases will be located in urban areas, will increase development costs in these areas. This has led to a concern that the rules would create an incentive for a developer to relocate to outlying or undeveloped areas, thereby contributing to more sprawl.

Even if strict standards are imposed on new development in watersheds of impaired waters, water quality will not meet standards, unless discharges

from existing development are reduced. Under the authority of the federal Clean Water Act, DEP is assessing causes of impairment through development of Total Maximum Daily Loads (TMDL) for impaired waters, including those impaired due to nonpoint sources typically entering the resource through stormwater runoff. The process for identifying these sources is a time-consuming one that will take department staff many years to complete (Appendix 3), making it difficult to know, in the short term, who should be included as an existing source for the purposes of regulation. See Appendix 6 for a discussion of the TMDL program.

4. A. Current quantity and quality standards in Department rules have not been viewed as effective by Department staff, nor by consulting engineers. The engineering community is still learning about the efficiencies and effectiveness of Best Management Practices. The existing “peak flow” standard for controlling the quantity of runoff leaving a development is seen as insufficient in that it does not protect a water resource from damage due to an increase in the total volume of runoff leaving a site. In addition, the heavy reliance on percentage removal of total suspended solids (TSS) for protecting water quality is seen as insufficient in that the resulting discharge of sediment will be highly variable depending on the grain size distribution of the sediment load being treated. While it is easier to treat a sediment load that has a high percentage of coarse sand, it is the fine particles, silts and clays not removed, that are the greatest concern for impacting water quality.  
  
B. The use of infiltration practices to treat stormwater has also raised concerns about potential ground water impacts. Infiltration of stormwater from some sources may need pre-treatment prior to infiltration, or may not be appropriate for infiltration. Other sources that are relatively clean, such as rooftop runoff, are more appropriate for infiltration. However, in many locations in Maine, soils are not suitable to allow a significant level of infiltration to occur. In these locations, certain Best Management Practices may allow for some incidental infiltration to occur, while the remaining stormwater will be discharged to surface water. There is need for clarification in the standards for what is considered infiltration, and for the conditions under which infiltration may be appropriate.  
  
C. The requirements for projects in most at risk watersheds, and in particular, impaired watersheds can be expensive and technically difficult to meet. Options are needed for projects in these watersheds, such as paying a compensation fee or providing for mitigation work off the project site.
5. Maintenance of stormwater Best Management Practices has been poor to date, according to Department staff, municipal officials and members of the engineering consultant community. The Department and municipalities lack sufficient resources to conduct compliance inspections and follow-up with permittees to ensure that maintenance is carried out. Without the needed

maintenance, BMPs often become ineffective and in some instances, may do more harm than good.

6. Currently, stormwater is largely managed on a site by site basis, through the permit review process. This approach does not, in most cases, allow for a holistic, watershed perspective for water resource protection. For example, the detention of runoff from a development may be appropriate when looked at individually, but when combined with many other developments in the watershed, may result in a greater impact on a stream by lengthening the period of erosive high flows in the stream. In addition, many small developments are below the regulatory threshold and are therefore unregulated. The cumulative impact of these developments is often significant.
7. The existing Stormwater Law and Rules is seen by many, including DEP Licensing staff, as very complicated and difficult to understand.
8. The overlap with the Maine Construction General Permit (MCGP), adopted pursuant to the federal NPDES Stormwater regulations has added to the complexity of stormwater regulation in Maine. The two programs have different thresholds and standards. It would be much easier for applicants and administrators alike, if these programs could operate with similar thresholds and standards, such that a single application form could be used to meet the requirements of both programs. The Department proposed an integrated program to stakeholders in 2002, whereby the State's stormwater program, through amendments to the Stormwater Law and rules, would also satisfy the Federal program requirements. Stakeholders at that time felt that the integrated approach was too complicated given the short time available to meet the Federal program requirements (March 2003). However, interest remains strong for finding ways to simplify the permit process.
9. The department has had several years of experience implementing the Stormwater Management Law and Rules (Chapter 500), as well as some experience implementing the MCGP program. As a result, staff has identified areas of the rules that need amendment or clarification. This is an ongoing process. Many of these changes are minor clarifications, but some will result in substantive change. Needed changes that have been identified include, but are not limited to, the following:
  - The permit by rule section needs to be re-focused on projects that do not need engineering review;
  - Basic requirements in certain areas need to be specified (ex. erosion control, buffers, and ponds);
  - On-site stormwater standards need to be met before a project puts stormwater into a municipality's stormwater system that serves as a conduit into a resource;

- The level-lip spreader standard needs updating and increased flexibility; and
- The rule needs to be better integrated with requirements for subsurface discharges of stormwater.

10. The Department can administer the proposed stormwater program revisions if all of its currently authorized positions are filled. The Department has also concluded that revisions to the stormwater rules regarding quality and quantity standards can result in a simpler review process, allowing the engineering staff to keep up with the workload.

#### **D. Guiding Principles for Management Strategy**

The stakeholder group discussed what the underlying principles should be that guide decisions on stormwater management in Maine. Broad agreement was reached that the following four principles should provide guidance, recognizing that there will be tension between these principles and that trade-offs will be inevitable:

1. Stormwater standards should result in meaningful protection. They should accomplish protection without unnecessary requirements; they should be achievable, cost-effective and based on good science.
2. Stormwater standards should not foster an unintended consequence of sprawl, as defined by state policy.
3. Stormwater standards should be understandable. They should be comprehensible and written in plain English. They should not be unnecessarily complex.
4. Stormwater standards should not conflict with other major environmental initiatives.

#### **E. Department Recommendations**

##### Regulatory

1. The Maine Stormwater Law should be amended so that a basic level of water quality protection standards applies to all regulated area of the state, focusing on erosion and sedimentation control, housekeeping and maintenance of

“best management practices” (see Appendix 4, Section 3, for proposed statutory revision).

Rationale: Under the Maine Stormwater Management Law, quality standards only apply if a project is located in a “most at risk” or “sensitive or threatened” watershed. This means that the Department does not have the ability to require basic measures to protect water quality. Since we want to keep our waters clean, all projects should be meeting basic standards for erosion and sedimentation control and housekeeping, and should be required to maintain any BMPs used. These are low cost measures that if taken, will help avoid the need for much higher cost remedial measures at some point in the future.

It should be noted that other Maine laws, either by design or indirect effect, may have an impact on stormwater quality. For example, the Maine Erosion and Sedimentation Control Law, when properly implemented, can help reduce sediment loads from very small projects not addressed under other state programs. The Maine Solid Waste Rules help address stormwater issues associated with landfills. The Maine Gravel Pit laws encourage internally drained pits. The Natural Resources Protect Act provides for a 75-foot setback along streams that may be reduced under permit by rule if there is no practicable alternative for an activity location on the parcel. The department supports these laws and the contribution they make, but does not believe they negate or lessen the need to support the proposals presented in this report.

2. The Maine Stormwater Law should be amended so that a one-acre disturbance is subject to regulation rather than using the multi-tiered approach in current law (20,000 sq. ft. impervious, 1 acre impervious or 5 acres disturbed depending on designation of watershed). (See Appendix 4, Section 2.)

Rationale: A single threshold is easier to administer, is more readily understandable by the public, and is more consistent with the one-acre disturbance threshold in the Federal NPDES Program than the current multiple thresholds. It would simplify the question of when a permit is needed and would allow for integration of the state and federal programs. The proposed 1-acre disturbed threshold for the Stormwater Law differs from the federal threshold in that:

- It would apply regardless of whether a discharge is a “point source” or “nonpoint source” (under the NPDES Program, only point sources are subject to regulation). The approach proposed is consistent with Maine’s approach to area thresholds in Maine’s ESC Law, Stormwater Law and Site Law, and reflects the State’s watershed approach to protection of water quality. Basic standards need to be met everywhere in the watershed, and temporary measures need to be in place before the beginning of construction.

- The proposed one-acre threshold would not allow the Department to, at its discretion, review projects below one acre in size. This case-by-case smaller threshold is part of federal law and the Maine Construction General Permit (MCGP), but the Department does not propose to add it into the Maine Stormwater Management Law.

The Department is proposing that projects between 1 and 5 acres of developed area, but less than 20,000 square feet of impervious area in “most at risk” watersheds, or less than 1 acre impervious area in other watersheds be eligible for a “permit by rule.” Permit by rule standards would be basic standards similar to those now in the MCGP, and the MCGP notification would be combined with the permit by rule in those cases where both applied. Other changes in procedures and fees intended to consolidate and simplify these programs are also being considered.

3. The Protection and Improvement of Waters Law should be amended to allow “license by rule” standards for infiltration of stormwater (this proposed amendment is part of proposed legislation in LD 1655).

Rationale: This change will eliminate the need for a person who proposes to use infiltration of stormwater, and who is following standards, from having to get a separate wastewater discharge license. Such a requirement would be an unnecessary burden for both applicants and for Department staff administering the program.

4. The Department should use the existing Total Maximum Daily Load (TMDL) assessment process, or an equivalent assessment process to identify significant existing sources of pollutants in impaired watersheds. The Department should seek authority under the Stormwater Law to regulate those sources (See Appendix 4, Section 4).

Rationale: The Department is required by Federal law to conduct water quality assessments of its surface waters and to develop TMDLs for waters that do not attain their water quality classification. These TMDLs should provide information on the pollutant sources that are causing non-attainment. If water quality is to be restored, those sources need to be reduced or eliminated. See Appendix 6 for discussion of the TMDL program.

Before a water is designated as impaired under the Stormwater Law (impaired due to urban runoff) or designated as “most at risk,” it must go through rule making for adoption in Chapter 502. The public will have an opportunity for comment on that proposed list. An additional rule making would subsequently take place before the Department designates significant existing sources in an impaired watershed.

The Department expects that rule making for identification of significant existing sources will take place on a watershed basis, or even for multiple watersheds, as opposed to rule making on each source identified. Where significant existing sources are identified, the Department expects to require some remedial work to lessen the impact of stormwater runoff from the site.

5. The Department, through rule, should continue the process of defining and designating “most at risk” watersheds and “sensitive or threatened” regions or watersheds as directed in the Maine Stormwater Law. Streams that are impaired due to urban runoff should be included in the category of “most at risk” as well as streams that have at least 7% of their watershed in impervious area (see Appendices 2 and 3). Areas that are expected to receive sufficient economic or population growth over the next 25 years to have an impact on water quality should be included as “sensitive or threatened.”

Rationale: One of the guiding principles embraced by the stormwater stakeholder group is that the standards should provide “meaningful protection,” i.e., they should accomplish protection without unnecessary requirements. The “most at risk” and “sensitive or threatened” categories provide a way to tailor the standards to the needs of a particular watershed or region.

Discharges from development in impaired watersheds should only be allowed where they will not cause or contribute to a violation of water quality standards. To meet this standard where urban runoff is a significant contributor to the impairment means that rigorous standards will need to be met. Thus, it is appropriate that impaired streams be included as “most at risk” which allows the Department to require a higher standard.

Data exists which shows that streams show signs of degradation when 10% or less of the watershed is developed to impervious area. While in the future, with implementation of appropriate BMPs it may be possible to exceed 10% imperviousness before seeing impacts to water quality, development that has occurred to date for the most part has not included such BMPs. Even if regulated development does incorporate those BMPs, much of the overall development in the watershed is not regulated under the stormwater law (e.g., single family homes are exempt). The Department is therefore proposing to use 7% impervious area as the level of development in a watershed that would make it “most at risk” from new development. See Appendix 2 for further discussion on the Department’s proposal concerning impervious area.

In addition to watersheds where development activity is already putting water quality at risk, there will be other areas where foreseeable future development will also threaten water quality. The Department expects these to be places where a significant amount of commercial development will likely occur. No



widely accepted models have been identified for projecting the amount or type of development activity. The Department is still working on how to best identify these areas.

6. The Department should revise the quantity and quality standards in rule in order to provide better protection than the current peak flow and Total Suspended Solids (TSS) standards provide and more flexibility for applicants. The standards should include options such as compensation fees in most at risk watersheds, where a locally or state approved Compensation Fee Utilization Plan exists, and off-site mitigation credits for applicants with projects proposed to be located in impaired watersheds.

Rationale: This recommendation is based on the guiding principle that the standards should provide meaningful protection. Currently, projects meeting the peak flow and TSS standards may not be providing sufficient quantity and quality protection. The Department has been working with engineering consultants to develop standards that should result in a higher level of protection while also providing flexibility to applicants.

7. The Department, through rule, should allow for reduced standards for new development in impaired watersheds where a Local Watershed Management Plan (LWMP) has been developed to address the causes of impairment, provided the plan is approved by the Department, and is being implemented. The amount of reduction in standards for new development would be case specific and would need to ensure that the goals of water quality restoration would be achieved through treatment of existing sources of pollution. The Department should allow implementation to be deferred in municipal designated growth zones until financial assistance is available, or up to five years, whichever comes first.

Rationale: This recommendation, along with recommendation #4, addresses the concern that new development should not be required to pay for all the development that occurred before standards were put in place. LWMPs can be better tailored to address issues in a watershed than the state-run stormwater program. In the long run, and with State oversight, they will probably result in more successful protection or restoration work. While a LWMP could be developed prior to a TMDL being completed in an impaired watershed, it would more likely be a tool for implementing the needed pollutant discharge reductions from existing sources identified in a TMDL where one has been completed. For this reason, the Department should encourage the coordination of work on TMDLs and LWMPs.

The Department should create incentives municipalities to develop LWMPs, including where appropriate, stormwater utility districts. Stormwater utility districts can provide a municipality with the means to finance its stormwater management program. Linking implementation of plans to the availability of

financial assistance in designated growth zones would provide a way of encouraging growth in these areas without sacrificing progress over the long term in meeting water quality goals.

8. The Department, through rule, should develop requirements that will improve the level of maintenance on stormwater treatment practices approved under the Stormwater Law or Site Location of Development Law. This should be accomplished by requiring periodic inspection of those practices by an engineer or other qualified person, and certification by the property owner, or owner's agent, that the treatment practices are operating properly. The Department should commit to conducting spot inspections to ensure compliance with maintenance requirements.

Rationale: According to Department field services staff, municipal officials and consulting engineers, maintenance of stormwater BMPs has been very poor in general. These groups also agree that the effectiveness of BMPs is greatly diminished without maintenance, in some cases to the point that they do more harm than good. For permitted sites, periodic inspection and certification requirements would increase the likelihood that the needed maintenance will occur, and help the Department to make more effective use of its limited resources for targeted inspections.

9. The Department should make additional amendments to the stormwater rules to resolve problems that have come to light through administering the program since 1997. Examples of such needed changes include, but are not limited to the following:

- The permit by rule section needs to be re-focused on projects that do not need engineering review;
- Basic requirements in certain areas need to be specified (ex. erosion control, buffers, and ponds);
- On-site stormwater standards need to be met before a project puts stormwater into a municipality's stormwater system that serves as a conduit into a resource;
- The level-lip spreader standard needs updating and increased flexibility; and
- The rule needs to be better integrated with requirements for subsurface discharges of stormwater.

Rationale: The Department has been collecting a list of issues since it began administering the program in 1997. The Department will include amendments to address these issues at the same time as it proposes other rule changes proposed above.

10. The Department, through rule, should allow for the use of innovative approaches to meeting stormwater standards, provided contingency plans are developed for use in the event the innovative approach does not work.

Rationale: New products and techniques for stormwater management are still emerging. The Department should encourage innovation in the interest of gaining more information on what works in Maine. Where outcomes are uncertain, there should be back-up plans in place to ensure that there will not be long-term water quality impacts in the event an innovative approach does not work.

11. If the Department should, through the TMDL process, identify impaired urban streams where the Department determines that it would be infeasible to restore water quality to meet designated uses, then the Department should conduct a Use Attainability Analysis (UAA) for the water resource.

Rationale: The Department's long-term goal for all waters is to have them meet their water quality classification. Over time, the Department seeks to improve the quality of even severely impaired waters. The Use Attainability Analysis is a tool of "last resort" where all efforts to restore water quality that are practicable have been taken and the water still will not meet its classification. If there are urban streams that fit this description, then a UAA is an appropriate action.

#### Non-Regulatory

12. The Department, with assistance from the Maine State Planning Office, should provide municipalities with tools for developing local stormwater management programs (the Maine Stormwater Law already provides for delegation of the program to a municipality if an approved local program exists).

Rationale: Municipal officials are only just becoming aware of stormwater as an issue that needs to be dealt with at the local level. They need guidance and tools for managing this issue. The State needs to provide this information in order to promote local solutions.

13. The Department, with input from municipalities, should develop a list of financial assistance options for municipalities or watershed districts seeking to develop and/or implement local management programs. The Department should include consideration of these needs in developing priorities for environmental bonds.

Rationale: If municipalities are to play a larger role in managing stormwater, they will need financial assistance.

14. The Department should develop information for the regulated community to improve their understanding of what they need to do to comply with state and federal program requirements. This information should also describe ways to minimize stormwater impacts through the use of Low Impact Development measures.
15. The Department should continue its campaign to build the public's knowledge base on stormwater issues.
16. The Department should increase training to a variety of audiences (developers, contractors, consultants, municipal officials) on proper erosion and sedimentation controls.  
Rationale (14 – 16): Awareness surveys have shown that stormwater is not well understood by the public, including the regulated community. In order to improve the quality of stormwater management designs associated with new development, or with retrofitting existing development, information on how to reduce development impacts needs to be developed and actively promoted.

**Appendix 1. Stakeholder Participants**

Facilitator: Ann Gosline

<b>Name</b>	<b>Stakeholder Organization</b>
Archino Howe, Ann	SYT Design Consultants
Austin, Jeff	Maine Municipal Association
Barden, Michael	Maine Pulp & Paper Association
Beal, Carl	Assoc. of Civil Engineering Consultants
Bennett, Nick	Natural Resources Council of Maine
Bobinsky, Mike	City of Portland
Bradstreet, Steve	Env. Eng. & Remediation Consultants
Bragg, Dave	Milone & Macbroom Consultants
Braley, David	Dept. of Human Services, Drinking Water Program
Brancsom, John	Maine Turnpike Authority
Bridge, Jennie	Environmental Protection Agency
Brogunier, Hope	Bangor Area Citizens Organized for Responsible Development
Burns, Jenn	Maine Audubon
Butts, John	Associated Constructors of Maine
Castallo, Jodi	Nonpoint Education for Municipal Officials (NEMO) Program
Davis, Ginger	Maine Real Estate Development Association
DellaValle, Beth	Maine State Planning Office
Dube, Norm	Atlantic Salmon Commission
Earley, Kathi	City of Portland
Edelstein, Jeff	Cumberland Co. Interlocal Stormwater Working Group
Edmonds, Helen	Maine Forest Products Council (Pierce Atwood)
Geoffroy, Kate	Maine Forest Products Council (Pierce Atwood)
Glidden, Dale	Augusta Sanitary District
Hall, Chris	Maine State Chamber of Commerce
Henderson, Zach	Maine Rivers
Janeski, Todd	Maine State Planning Office Coastal Program
Johannesman, Susan	Legislative Office of Policy & Legal Analysis
Joyce, Kat	Verrill & Dana
Kamila, Dave	American Society of Civil Engineers
McKee, Kevin	Vortechncis
Newkirk, Peter	Maine Dept. of Transportation
Newman, Sharon	Maine Turnpike Authority (Preti Flaherty)
Olson, Chris	Maine Dept. of Transportation
Payne, Elizabeth	Bangor Area Citizens Organized for Responsible Development
Rabasca, Kristie	Env. Eng. & Remediation Consultants
Rettenmaier, Liz	Maine State Planning Office
Ring, Jim	City of Bangor
Rioux, Mike	St. Germain Consultants
Schalit, Naomi	Maine Rivers
Shelley, Peter	Conservation Law Foundation

**Appendix 1. Stakeholder Participants (continued)**

<b>Stakeholder Name</b>	<b>Organization</b>
Simon, John	Balanced Engineering Consultants
Stevens, Jay	Assoc. of Civil Engineering Consultants
Timpano, Steve	Maine Dept of Inland Fisheries & Wildlife
Tolman, Andy	DHS, Drinking Water Program
VanBourg, Jon	Maine Water Utilities Association

**DEP Staff**

Breton, Mary*
Dennis, Jeff
Gates, Judy
Hopeck, John
Hubert, Marianne
Kokemuller, Linda
Ladd, David*
McGlaufflin, Art
Richardson, Hetty*
Waddell, Dave
Witherill, Don*

\* Staff who attended all stakeholder meetings

## **Appendix 2 Identifying Streams Most at Risk from Development**

Urban land uses such as roads, buildings, parking, and associated lawns place a number of stresses on the aquatic communities living in the streams draining through these areas. The inability of impervious land cover to infiltrate precipitation causes elevated frequency and duration of erosive flows, resulting in channel widening and down cutting in some places and deposition of eroded sediments in others. These habitat-disturbing events occur so frequently that a stable community of aquatic insects often cannot be maintained. Lack of infiltration can also cause extreme reductions in base flow, and the resultant loss of velocity and elevation of temperature can stress both insect and trout populations. Loss of riparian cover and the shade it provides can stress the aquatic community by elevating temperature; eliminating leaf fall, a healthy stream's primary food and energy source; and eliminating large, woody debris, a major component of stream habitat. Stormwater runoff from urban land uses carries a variety of pollutants that can result in the loss of sensitive species. These include nutrients, which result in excessive growth of attached algae and loss of dissolved oxygen, as well as heavy metals and hydrocarbons, which can be toxic to aquatic life.

As a result of these urban stresses, the aquatic life in streams draining urban and urbanizing areas is often impaired. Sensitive fish and insect species may be absent, and there may be heavy accumulations of organic material because the stream community is not functioning properly. The degree to which these effects are seen tends to correlate strongly with the density of urban uses in the watershed, which is often quantified by estimating the percentage of the watershed that is covered by impervious land uses.

### **Imperviousness as an indicator**

"Imperviousness" refers to the area of roads, parking lots, sidewalks, rooftops, and other impermeable areas in the watershed. The percentage of the watershed that is impervious can be used as an indicator to estimate the impact of land development on aquatic systems. For a good summary on this topic, see *The Practice of Watershed Protection*, Article 1, "[The Importance of Imperviousness](#)", (off-site), which discusses research relating relative stream stability and health to the percent imperviousness of a watershed (off-site, takes awhile to load). Staff at DEP has also studied many streams in Maine to determine whether the indicator works in Maine, and it does. No streams with watersheds of over 10% imperviousness, which have been examined in Maine, have been found to meet Class B standards. In other words, all have shown detrimental impact to the aquatic community of the stream. Growth in watersheds below 10% can be expected to result in detrimental impacts on streams as imperviousness approaches 10%, unless steps are taken to control the quantity (frequent high flows) and quality (pollutant load) impacts from stormwater runoff.

## Most at Risk Streams

The department is proposing that “streams most at risk from development” be identified either by their current, impaired quality or by the percent imperviousness of their watersheds. Streams that currently do not meet aquatic life standards or the dissolved oxygen standards as a result of urban effects, called impaired streams, would automatically be considered “most at risk”. In addition, streams that either currently meet standards or have not been monitored to determine if they meet standards would be considered “most at risk” if the percent imperviousness of their watersheds is 7% or greater. The 7% threshold was chosen for several reasons. First, we can be quite certain, based on a large amount of data both in Maine and throughout the country, that once stream watersheds exceed 10% imperviousness their aquatic life will start to show significant signs of degradation. In some streams this shows up at even lower percent imperviousness, as indicated in a recent study in Maine (Morse and Kahl, 2003). If substantial stormwater quality and quantity controls can be placed on new development in stream watersheds before they reach the threshold of impairment, perhaps impairment can be avoided. Requiring these controls in watersheds that are currently at or above 7%, but are not yet above 10%, will give these streams a chance to avoid impairment, or at least to postpone it. Second, the data currently used to estimate watershed imperviousness is from a 1992 LandSat satellite image, and therefore represents a historic level of watershed development, and hence a very conservative estimate of current imperviousness. In many of our small stream watersheds in growth areas a lot of commercial development has occurred in the last decade, and many of these watersheds that were 7% or 8% in 1992 may now be approaching, or even exceeding, 10%.

Most of the streams that have watersheds with 7% or more imperviousness are small (first or second order) streams. The majority of them have at least some commercial development in them, and often most of the imperviousness is associated with commercial development. As would be expected they tend to be concentrated around and within high population service centers.

## References

Morse, Chandler and Kahl, Steve, 2003. *Measuring the Impact of Development on Maine Surface Waters*. Senator George J. Mitchell Center for Environmental and Watershed Research at the University of Maine (8 p.)

Schueler, Tom, 1994. *The Importance of Imperviousness*; article from *Watershed Protection Techniques*. The Center for Watershed Protection, Ellicott City, MD (12 p.)



**Appendix 3 List of Proposed “Most at Risk” Streams (Including Impaired Streams)** Note: List will be updated prior to rule-making if warranted by new data

Municipality	Stream Name	Wtrshed % Imp	Land Area (sq mi)	Biomon-tored?	Class	Impaired	AqL Class	DO Viol?	Bact Viol?	Urban Effect	TMDL Schedule
Auburn	Bobbin Mill Brook	7.9	1.54	1998	B	x	C	?	?	y	2008
Auburn	Logan Brook	11.4	0.28	pre 1998	B	x	?	y	y	?	2008
Augusta	Kennedy Brook	19.4	1.21	pre 1998	B	x	?	?	y	y	2012
Augusta	Stone Brook	7.0	3.53	n	B		?	?	?	?	
Augusta	Tr b to Bond Brook	16.4	1.74	2001	B		?ip	?	?	?	
Augusta	Whitney Brook	12.2	1.63	n	B		?	?	y	?	
Bangor	Arctic Brook (Valley Ave)	21.7	0.97	1997	B	x	NA	?	?	y	2004
Bangor	Birch Stream	31.2	1.49	2001	B	x	NA	y	?	y	2005
Bangor	Penjajawoc Str (incl. Meadow Bk)	5.8	8.57	2001	B	x	NA	y	?	y	2004
Bangor	Shaw Brook	9.0	5.48	2001	B	x	?ip	?	?	y	2008
Bangor	Unnamed Str (Pushaw)	11.7	0.71	1997	B	x	NA	?	?	y	2004
Bangor	Unnamed Str Bangor 1	20.2	0.53	n	B		?	?	?	?	
Bangor	Unnamed Str Bangor 2	22.8	4.57	n	B		?	?	?	?	
Brewer	Unnamed Str Brewer 1	24.7	0.96	n	B		?	?	?	?	
Brunswick	Mare Brook	9.2	5.38	2000	B	x	NA	?	?	y	2008
Brunswick	Unnamed Str Brunswick 2	13.1	1.07	n	B		?	?	?	?	
Brunswick	Unnamed Str Brunswick 3	28.0	0.45	n	B		?	?	?	?	
Brunswick	Unnamed Str Brunswick 4	19.6	1.20	n	B		?	?	?	?	
Brunswick	Unnamed Str Brunswick 5	16.7	0.28	n	B		?	?	?	?	
Brunswick	Unnamed Str Brunswick 6	22.0	0.27	n	B		?	?	?	?	
Brunswick	Unnamed Str Brunswick 7	12.8	0.60	n	B		?	?	?	?	
Bucksport	Silver Lake Outlet	12.8	0.39	1996	B	x	C	?	?	?	
Calais	Unnamed Str Calais	21.8	0.18	n	B		?	?	?	?	
Camden	Megunticook River	15.3	1.22	n	B		?	?	y	?	
Caribou	Caribou Stream (in Caribou only)			1999	B	x	NA	?	?	y	2012
Ellsworth	Unnamed Str Ellsworth Falls	7.9	0.11	n	B		?	?	?	?	
Falmouth	Norton Brook	8.8	0.78	n	B		?	?	?	?	
Falmouth	Scitterygussett Creek	8.4	0.86	n	B		?	?	?	?	
Freeport	Concord Gully Brook	10.4	1.03	2001	B		?ip	n	y	?	2004
Freeport	Frost Gully Brook	5.5	2.63	2000	A	X	A	n	y	y	2004
Gardiner	Unnamed Str Gardiner	7.1	1.55	n	B		?	?	?	?	
Gray	Libby Brook	8.8	1.72	1999	B		C	?	?	?	
Lewiston	Dill Brook	15.4	3.45	1998	B	X	C	?	?	y	2008
Lewiston	Jepson Brook	18.3	2.52	pre 1998	B	X	?	y	y	y	2008
Limerick	Brown Brook			2000	B	X	NA?	?	?	y	2008
Lincoln	Mattanawcook Stream	20.6	0.23	2000	C		C	?	?	?	

Maine Department of Environmental Protection  
Stormwater Report to Maine Legislature

February 2, 2004

Municipality	Stream Name	Wtrshed % Imp	Land Area (sq mi)	Biomonitored?	Class	Impaired	AqL Class	DO Viol?	Bact Viol?	Urban Effect	TMDL Schedule
Lisbon	Unnamed Str Lisbon 1	14.6	0.93	1998	B	X	C	?	?	y	
Norway	Pennessee-wassee L Outlet	6.2	0.84	n	B	X	?	y	y	?	
Portland	Capisic Brook	24.8	2.76	1999	C	X	NA	y	y	y	2005
Portland	Fall Brook	22.0	1.56	n	C	X	NA?	?	?	y	2012
Portland	Unnamed Str Portland 1	10.2	0.37	n	C		?	?	?	?	
Portland	Unnamed Str Portland 2	23.2	1.44	n	C		?	?	?	?	
Portland	Unnamed Str Portland 3	24.6	1.29	n	B		?	?	?	?	
Portland	Unnamed Str Portland 4	24.8	0.45	n	B		?	?	?	?	
Portland	Unnamed Str Portland 5	27.6	0.23	n	C		?	?	?	?	
Portland	Unnamed Str Portland 6	16.8	1.20	n	C/B		?	?	?	?	
Presque Isle	Kennedy Brook	7.4	2.80	n	B		?	?	?	?	
Presque Isle	Unnamed Str	17.2	2.01	n	B		?	?	?	?	
Rockland	Lindsay Brook	18.7	1.17	n	B		?	?	?	?	
Rockland	Weskeag River Tr b	13.1	0.53	n	B		?	?	?	?	
Saco	Goosefare Brook	7.1	9.42	2000	B	X	C	?	?	y	accepted
Scarborough	Phillips Brook			pre 1998	C	X		y	?	y	2008
Skowhegan	Water Supply Br	20.6	0.55	n	B		?	?	?	?	
Skowhegan	Whitten Brook	14.8	0.48	n	B		?	?	y	y	
So. Portland	Barberry Creek	23.9	1.39	1999	C	X	NA	y	y	y	2004
So. Portland	Long Creek	16.3	3.45	1999	C	X	C or NA	y	y	y	2004
So. Portland	Red Brook			1999	C	X	NA	?	?	?	2012
So. Portland	Spurwink River	14.8	1.66	n	C		?	?	?	?	
So. Portland	Trout Brook (incl. Kimball Bk)	15.4	2.66	2000	C	X	NA	?	?	y	2005
So. Portland	Unnamed Str S Portland 1	28.3	0.51	n	C		?	?	?	?	
Topsham	Unnamed Str Topsham 1	10.7	0.93	n	B		?	?	?	?	
Topsham	Unnamed Str Topsham 2	15.8	0.30	n	B		?	?	?	?	
Topsham	Unnamed Str Topsham 4	11.0	0.61	n	B		?	?	?	?	
Waterville	Unnamed Str Waterville 1	13.2	0.81	n	B		?	?	?	?	
Westbrook	Beaver Pond Brook	11.1	0.54	n	B		?	?	?	?	
Westbrook	Unnamed Str Westbrook 1	10.3	0.58	n	B		?	?	?	?	
Westbrook	Unnamed Str Westbrook 2	13.7	0.17	n	B		?	?	?	?	
Westbrook	Unnamed Str Westbrook 3	14.1	0.35	n	B		?	?	?	?	
Westbrook	Unnamed Str Westbrook 4	9.4	0.22	n	B		?	?	?	?	
Winslow	Unnamed Str Winslow 1	12.0	0.27	n	B		?	?	?	?	
Winterport	Unnamed Str Winterport 1	7.3	0.61	n	B		?	?	?	?	
Winthrop	Mill Stream			pre 1998	B	X	NA	?	?	?	2012

**Key to Headings**

**Watershed % Imp** The estimated % imperviousness of the stream's watershed based on DEP modeling.

**Land Area** The area in square miles of the stream's watershed.

**Biomonitored?** The year in which the biomonitoring took place. An "n" indicates the stream has not yet been evaluated.

**Class** The stream's water quality classification.

**Impaired** Whether the stream is impaired due to urban runoff.

**AqL Class** For evaluated stream's, the highest class aquatic life standard that the the macroinvertebrate community meets. NA indicates failure to meet even Class C standards. A "?" Indicates stream is not yet evaluated.

**DO Viol?/Bact Viol?** Yes or no on whether there has been a documented violation of dissolved oxygen or bacteria standards. A "?" Indicates stream is not yet evaluated.

**Urban Effect** Yes or no on whether it is likely that impairment is due to urban stormwater and associated effects. A "?" Indicates stream is not yet evaluated.

**TMDL Schedule** Year when DEP expects to complete a TMDL on the stream

## **Appendix 4. Draft Statutory Changes**

### **Sec. 1. 38 MRSA §420-C, second paragraph, is amended to read:**

A person who owns property that is subject to erosion because of a human activity before July 1, 1997 involving filling, displacing or exposing soil or other earthen materials shall take measures in accordance with the dates established under this paragraph to prevent unreasonable erosion of soil or sediment into a protected natural resource as defined in section 480-B, subsection 8. Adequate and timely temporary and permanent stabilization measures must be taken and maintained on that site to prevent unreasonable erosion and sedimentation. This paragraph applies on and after July 1, 2005 to property that is located in the watershed of a body of water most at risk as identified in the department's storm water rules effective December 31, 1997 adopted pursuant to section 420-D and that is subject to erosion of soil or sediment into a protected natural resource as defined in section 480-B, subsection 8. This paragraph applies on and after July 1, 2010 to other property that is subject to erosion of soil or sediment into a protected natural resource as defined in section 480-B, subsection 8.

### **Sec. 2. 38 MRSA §420-D, first paragraph, is amended to read:**

#### **§420-D. Storm water management**

A person may not construct, or cause to be constructed, a project that includes ~~20,000 square feet or more of impervious area or 5~~ one acres or more of disturbed area ~~in the direct watershed of a body of water most at risk from new development or one acre or more of impervious area or 5 acres or more of disturbed area in any other area~~ without prior approval from the department. A person proposing a project shall apply to the department for a permit using an application provided by the department and may not begin construction until approval is received. This section applies to a project or any portion of a project that is located within an organized area of this State

### **Sec. 3. 38 MRSA §420-D, section 1, is amended to read:**

**1. Standards.** The department shall adopt rules specifying quantity and quality standards for storm water. Storm water quality standards for projects with 3 acres or less of impervious surface may address phosphorus, nitrates and suspended solids but may not directly address other dissolved or hazardous materials unless infiltration is proposed. ~~Storm water quality standards apply only in the direct watersheds of waterbodies most at risk from development and in sensitive or threatened geographic regions or watersheds defined by the department under subsection 4. Until such regions are defined, storm water quality standards are not required to be met by a permit applicant.~~

**Sec. 4. 38 MRSA 420-D(12)** is enacted to read:

**12. Significant existing sources.** The department may require a person owning or operating a significant existing source of stormwater to implement a stormwater management system. The owner or operator shall obtain approval from the department pursuant to this subsection for the stormwater management system.

A "significant existing source" is a significant existing source of stormwater quantity or quality pollution from developed area that was in existence prior to July 1, 1997 and is located in the direct watershed of a waterbody that is impaired due to urban runoff. The department shall identify significant existing sources as provided in this subsection.

**A.** The department shall develop a total maximum daily load for the watershed of a waterbody impaired due to urban runoff prior to designating significant sources within the watershed.

**B.** The department shall promulgate rules prior to requiring that an owner or operator of a significant source within the direct watershed of a specific waterbody obtain approval of a stormwater management system. The rules must include provisions such as the following:

(1) The name or other means of identifying the waterbody that is impaired due to urban runoff;

(2) A list of significant sources or a description of the types or classes of significant sources;

(3) A date or schedule indicating when approvals must be obtained; and

(4) Stormwater quantity and quality standards for stormwater management systems.

**C.** The owner or operator of a site designated as a significant source shall apply to the department for approval of a stormwater management system.

**D.** Significant existing sources do not include:

(1) Types of sources or activities described in subsection 7; or  
(2) The developed area of a facility required to meet ongoing stormwater management standards pursuant to a stormwater general or individual permit issued pursuant to Section 413.

**Sec. 5. Transition.** Prior approval is required pursuant to the Stormwater Management law if a person constructs, or causes to be constructed, one acre or more of disturbed area on or after the effective date of this Act.

A. If a person has a project that required approval prior to the effective date of this Act, the project continues to require approval on and after the effective date of this Act.

B. If a person has a project that did not require approval prior to the effective date of this Act, and the person proposes to construct or cause to be constructed one or more acre of disturbed area on or after the effective date of this Act, then

- approval is required. Only the construction on or after the effective date of this Act requires prior approval.
- C. A disturbed area of less than one acre continues to be counted toward the one-acre permit threshold following permanent stabilization to the extent it is considered developed area as defined in rules adopted by the Department of Environmental Protection.

\*\*\*\*\*

## **Appendix 5. Options for Managing Stormwater (Not Included in Recommendations)**

The stakeholder group spent time discussing a number of options for changing the way stormwater is managed in Maine. Most of these options appear in the list of Recommendations (Section E.), at least in part. Those that have not been fully recommended by the Department appear below.

- Develop stormwater standards that apply equally in all parts of the state where the Stormwater Law applies. This would entail elimination of the “most at risk” and “sensitive or threatened” designations that are currently in the Stormwater Law.

Not included: This approach would result in requirements the Department deems unnecessary in rural parts of the state. While this would help alleviate the concern for sprawl, it would not provide for “meaningful protection” in many instances.

- Seek to regulate smaller developments, including single family homes; could include an exemption if path of stormwater run-off is disconnected; i.e., there is not a continuous channel for run-off to follow from the developed site to a receiving water.

Not included: Single family homes, while high in number, do not tend to be major contributors of stormwater pollutants, other than for erosion and sedimentation during construction for which the Erosion & Sedimentation Control Law already applies (see separate DEP report to 121<sup>st</sup> Maine Legislature on the Erosion & Sedimentation Control Law, January 2004). The Department concludes that resources would be better spent focusing on stormwater from commercial and industrial development and roads.

## **Appendix 6: Overview of Current Total Maximum Daily Load - TMDL - Program and Regulations**

An Introduction to TMDLs from the web site of the U.S. Environmental Protection Agency

### **Background**

#### ***The Need - The Quality of Our Nation's Waters***

Over 40% of our assessed waters still do not meet the water quality standards states, territories, and authorized tribes have set for them. This amounts to over 20,000 individual river segments, lakes, and estuaries. These impaired waters include approximately 300,000 miles of rivers and shorelines and approximately 5 million acres of lakes -- polluted mostly by sediments, excess nutrients, and harmful microorganisms. An overwhelming majority of the population - 218 million - live within 10 miles of the impaired waters.

#### ***Section 303(d) of the Clean Water Act***

Under section 303(d) of the 1972 Clean Water Act, states, territories, and authorized tribes are required to develop lists of impaired waters. These impaired waters do not meet water quality standards that states, territories, and authorized tribes have set for them, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for waters on the lists and develop TMDLs for these waters.

#### ***What is a TMDL?***

A TMDL specifies the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and allocates pollutant loadings among point and nonpoint pollutant sources. By law, EPA must approve or disapprove lists and TMDLs established by states, territories, and authorized tribes. If a state, territory, or authorized tribe submission is inadequate, EPA must establish the list or the TMDL. EPA issued regulations in 1985 and 1992 that implement section 303(d) of the Clean Water Act - the TMDL provisions.

#### ***Litigation***

While TMDLs have been required by the Clean Water Act since 1972, until recently states, territories, authorized tribes, and EPA have not developed many. Several years ago citizen organizations began bringing legal actions against EPA seeking the listing of waters and development of TMDLs. To date, there have been about 40 legal actions in 38 states. EPA is under court order or consent decrees in many states to ensure that TMDLs are established, either by the state or by EPA.

### **EPA Actions to Implement the TMDL Program**

#### ***Federal Advisory Committee***

In an effort to speed the Nation's progress toward achieving water quality standards and improving the TMDL program, EPA began, in 1996, a comprehensive evaluation of EPA's and the states' implementation of their Clean Water Act section 303(d) responsibilities. EPA convened a committee under the Federal Advisory



Committee Act, composed of 20 individuals with diverse backgrounds, including agriculture, forestry, environmental advocacy, industry, and state, local, and tribal governments. The committee issued its recommendations in 1998.

### ***The New TMDL Rule***

These recommendations were used to guide the development of proposed changes to the TMDL regulations, which EPA issued in draft in August, 1999. After a long comment period, hundreds of meetings and conference calls, much debate, and the Agency's review and serious consideration of over 34,000 comments, the final rule was published on July 13, 2000. However, Congress added a "rider" to one of their appropriations bills that prohibits EPA from spending FY2000 and FY2001 money to implement this new rule.

### ***Current TMDL Program***

The current rule remains in effect until 30 days after Congress permits EPA to implement the new rule. TMDLs continue to be developed and completed under the current rule, as required by the 1972 law and many court orders. The regulations that currently apply are those that were issued in 1985 and amended in 1992 (40 CFR Part 130, section 130.7). These regulations mandate that states, territories, and authorized tribes list impaired and threatened waters and develop TMDLs.

## **Overview of the 1992 TMDL Regulations--Under Which the Current Program Operates**

### **Scope of Lists of Impaired Waters**

- States, territories, and authorized tribes must list waters that are both impaired and threatened by pollutants.
- The list is composed of waters that need a TMDL.
- At the state's, territory's, or authorized tribe's discretion, the waterbody may remain on the list after EPA approves the TMDL, or until water quality standards are attained.

### **2-Year Listing Cycle**

- States, territories, and authorized tribes are to submit their list of waters on April 1 in every even-numbered year, except in 2000. In March 2000, EPA issued a rule removing the requirement for the 2000 list - though some states are choosing to submit such lists on their own initiative.

### **Methodology Used to Develop Lists**

- States, territories, and authorized tribes must consider "all existing and readily available water quality-related information" when developing their lists.
- Monitored and evaluated data may be used.
- The methodology must be submitted to EPA at the same time as the list is submitted.
- At EPA's request, the states, territories, or authorized tribes must provide "good cause" for not including and removing a water from the

list.

### **Components of a TMDL**

- A TMDL is the sum of allocated loads of pollutants set at a level necessary to implement the applicable water quality standards, including -
  - ✓ Wasteload allocations from point sources, and
  - ✓ Load allocations from nonpoint sources and natural background conditions.
- A TMDL must contain a margin of safety and a consideration of seasonal variations.

### **Priorities/Schedules for TMDL Development**

- States, territories, and authorized tribes must establish a priority ranking of the listed waterbodies taking into account the severity of pollution and uses to be made of the water, for example, fishing, swimming, and drinking water.
- The list must identify for each waterbody the pollutant that is causing the impairment.
- States, territories, and authorized tribes must identify waters targeted for TMDL development within the next 2 years.

### **Public Review/Participation**

- Calculations to establish TMDLs are subject to public review as defined in the state's continuing planning process.

### **EPA Actions on Lists and TMDLs**

- EPA has 30 days in which to approve or disapprove a state's, territory's, or authorized tribe's list and the TMDLs.
- If EPA disapproves either the state's, territory's, or authorized tribe's list or an individual TMDL, EPA has 30 days to establish the list or the TMDL. EPA must seek public comment on the list or TMDL it establishes.

### **1997 Interpretative Guidance for the TMDL Program**

- EPA issued guidance in August, 1997, to respond to some of the issues raised as the program developed. The guidance includes a number of recommendations intended to achieve a more nationally consistent approach for developing and implementing TMDLs to attain water quality standards. These recommendations include:
  - ✓ States, territories, and authorized tribes should develop schedules for

establishing TMDLs expeditiously, generally within 8-13 years of being listed. EPA Regions should have a specific written agreement with each state, territory or authorized tribe in the Region about these schedules.

Factors to be considered in developing the schedule could include:

- Number of impaired segments;
  - Length of river miles, lakes, or other waterbodies for which TMDLs are needed;
  - Proximity of listed waters to each other within a watershed;
  - Number and relative complexity of the TMDLs;
  - Number and similarities or differences among the source categories;
  - Availability of monitoring data or models; and
  - Relative significance of the environmental harm or threat.
- ✓ States, territories, and authorized tribes should describe a plan for implementing load allocations for waters impaired solely or primarily by nonpoint sources, including -
- Reasonable assurances that load allocations will be achieved, using incentive-based, non-regulatory or regulatory approaches. TMDL implementation may involve individual landowners and public or private enterprises engaged in agriculture, forestry, or urban development. The primary implementation mechanism may include the state, territory, or authorized tribe section 319 nonpoint source management program coupled with state, local, and federal land management programs and authorities,
  - Public participation process, and
  - Recognition of other watershed management processes and programs, such as local source water protection and urban storm water management programs, as well as the state's section 303(e) continuing planning process.

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For more information, see EPA's TMDL web site at:

<http://www.epa.gov/owow/tmdl/>

- Status report on litigation
- TMDL Federal Advisory Committee Report
- Maps and information on impaired waters
- Links to other TMDL web sites, including states
- Regulations and guidance

Last updated on Wednesday, March 19th, 2003

URL: <http://www.epa.gov/owow/tmdl/overviewfs.html>