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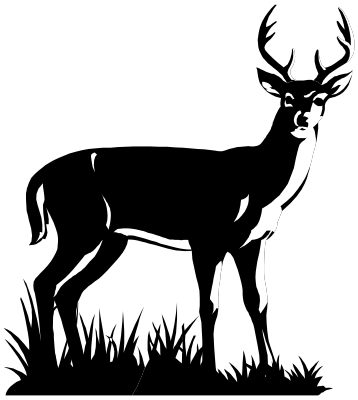
Maine Department of Environmental Protection 2000 / 2001 Strategic Plan

Maine Department of Environmental Protection

2000 / 2001
STRATEGIC PLAN

State of Maine
Department of Environmental Protection



Submitted by:
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I. INTRODUCTION

The Maine Department of Environmental Protection's Strategic Plan (December 1999) updates the original plan required by PL 1997 Ch. 764. In conjunction with DEP's FY2000 Performance Partnership Agreement, this Plan presents a comprehensive system of management by environmental objectives. For the convenience of reviewers, it is drafted in a format that references the anticipated state performance-based budget process (see the draft budget submission in Appendix A).

This plan is based on the core values of clean air, water and soils, the commitments to public service and environmental stewardship, and the determination to position the Department to anticipate the challenges of the next century. It contains four overarching goals in the following contexts: 1) clean air, 2) land and water, 3) responsible materials handling and management, and 4) promoting environmental stewardship. Specific, measurable objectives support each goal and, as a whole, the package provides the platform for integrated activities that constitute program priorities for the agency (see the draft document "Integrating Goals and Activities" in Appendix B).

The Department welcomes comments and the opportunity for discussion.

II. STRATEGIC PLAN

GOAL A. CLEAN AIR

To ensure and enhance clean air for people, plants and animals, so that all can breathe and thrive in clean air every day of the year, in every part of the State.

Issue Statement: Although clean air is one of the features that attracts people to Maine, the state has some significant air quality problems. In the past, we did exceed acceptable levels for particulates, sulfur dioxide, carbon monoxide and ground-level ozone. Following the implementation of successful control strategies we are now in attainment for all of the pollutants except ground-level ozone in the southern portion of the state. Future efforts will therefore focus on: 1) achieving attainment of the current ground-level ozone standard by 2003; 2) maintaining all other existing air quality standards; and 3) achieving reductions of 212 hazardous air pollutants, including mercury, for which no standards currently exist. The Department will also continue to expand its knowledge regarding sources of air pollution and their impacts on Maine's air quality. These sources include *transported air pollutants* from other states; *in state area sources*, such as vehicles, painting and surface coating operations; and *in state stationary sources*, such as mills or factories. The variety of sources, limited general knowledge about air pollution and other complex air quality issues have created the need to improve customer understanding through increased public outreach and education, pollution prevention initiatives and compliance assistance.

A-1: Measurable Objective: Ground-level Ozone

By 2003, ground-level ozone will be reduced to the level needed to meet or maintain a concentration of 0.12 parts per million within the entire State of Maine.

◆**Outcome Measures:** annual arithmetic mean ozone level in parts per million at each ambient ozone monitoring station.

Background: Ozone levels are measured at 11 monitoring sites located in 11 of Maine's 16 counties. Presently, Maine has nine counties classified by the federal government as not having acceptable levels of ozone in the air. Seven of these counties (York, Cumberland, Sagadahoc, Kennebec, Knox, Lincoln and Androscoggin) are classified as "moderately unhealthy" areas, while Hancock and Waldo counties are classified as "marginally unhealthy" areas. However, referencing recent monitoring data, the Bureau of Air Quality has petitioned the U.S. Environmental Protection Agency to change the classification status to "healthy" for Hancock, Waldo, Knox, Lincoln, Kennebec and Androscoggin counties.

The ground-level ozone objective and the 2003 target depend on implementation of both *Maine's* state regulations for air quality controls, *and* regulations for Maine's up-wind neighbors, which impact Maine. Maine's federal statutory deadline for meeting this standard in southern counties of the state was November 1996. Due to the transport of pollutants from up-wind states, however, the November 1996 deadline was not achieved. (In recognition of this, Maine made a demonstration to EPA in November, 1996, documenting the impact of emissions from outside Maine's borders.) Another non-controllable variable that affects the success in achieving this objective is the weather. Weather conditions, such as high temperatures, increase the amount of ozone formed, causing monitors to record unacceptable levels of ozone.

A-1-001 **Non-regulatory programs.** Develop and implement a public education, pollution prevention and innovative technology assistance program that targets ground-level ozone and the control of its precursors, nitrogen oxides and volatile organic compounds, in order to meet or maintain a concentration of 0.12 parts per million within the entire state of Maine.

A-1-002 **Monitoring and database development**. Continue to monitor outdoor air for ground-level ozone and its precursors, nitrogen oxides and volatile organic compounds, through a statewide network of air quality monitors, and continue to maintain the database on the nitrogen oxides and volatile organic compounds that are released from new and existing area, point and mobile sources.

A-1-003 **Regional emissions transport.** Identify and implement regional strategies to reduce ground-level ozone and its precursors, nitrogen oxides and volatile organic compounds, transported from out of state, in order to meet or maintain a concentration of 0.12 parts per million within the entire State of Maine. Strategies will include collaborative efforts with federal, state and other governmental agencies, particularly the Ozone Transport Commission, the Ozone Transport Assessment Group and Northeast States for Coordinated Air Use Management NESCAUM.

A-1-004 **In-state reductions.** Reduce through regulatory programs, market-based strategies, and voluntary measures the amount of nitrogen oxides and volatile organic compounds that are released from new and existing area, point and mobile sources, in order to meet or maintain a concentration of 0.12 parts per million for ozone within the entire State of Maine.

A-2: Measurable Objective: Outdoor Air Quality Standards

Maine's air quality will remain in compliance with certain outdoor air quality standards. By the end of each calendar year, no more than one exceedance of Maine's existing outdoor air quality standards for lead, carbon monoxide, sulfur dioxide, nitrogen dioxide, fine particulate matter, toluene, and perchloroethylene will have occurred.

◆**Outcome Measures:** Number of exceedances of the outdoor air quality standards for lead, carbon monoxide, sulfur dioxide, nitrogen dioxide, fine particulate matter, toluene, and perchloroethylene, as documented in the periodic emissions inventory.

Background: This objective is derived from the federal Clean Air Act requirements and state law. In the past, air quality in parts of the state exceeded the standards for particulates, sulfur dioxide, and carbon monoxide (currently, however, Maine is meeting those standards. Control strategies, developed by DEP have effected this change.)

Maintenance of control strategies to continue meeting the standards are essential to the continued protection of public health and the environment, as well as necessary to achieve the objective. The outcome of this objective also depends on the ability to control out-of-state sources of air pollutants.

A-2-005 **Non-regulatory programs.** Develop and implement a public education, pollution prevention and innovative technology assistance program that targets lead, carbon monoxide, sulfur dioxide, nitrogen dioxide, fine particulates, toluene, and perchloroethylene emissions, in order to meet or maintain the state air quality standard for each pollutant within the entire State of Maine.

A-2-006 Monitoring and database development. Continue to monitor outdoor air for lead, carbon monoxide, sulfur dioxide, nitrogen dioxide, fine particulates, toluene, and perchloroethylene through a statewide network of air quality monitors, and continue to maintain the database on these pollutants as released from new and existing area, point and mobile sources.

A-2-007 Regional emissions transport. Identify and implement regional strategies to reduce emissions of lead, carbon monoxide, sulfur dioxide, nitrogen dioxide, fine particulates, toluene, and perchloroethylene transported from out of state, in order to meet or maintain the state air quality standard for each pollutant within the entire State of Maine. Strategies will include collaborative efforts with federal, state and other inter-governmental agencies.

A-2-008 In-state reductions. Through regulatory programs, market-based strategies, and voluntary measures, reduce the amounts of lead, carbon monoxide, sulfur dioxide, nitrogen dioxide, fine particulate matter, toluene, and perchloroethylene emissions released from new and existing area, point and mobile sources, in order to meet or maintain the state/federal air quality standard for each pollutant within the entire State of Maine.

A-2-009 Standards setting. Develop and implement new air quality standards necessary to protect public health, safety and welfare, as indicated by outside air monitoring results, and the assessment of federal rules and health impact studies.

A-3: Measurable Objective: Non-criteria Pollutants

By 2005, reduce the probability of health impacts on Maine citizens, by reducing the total mass emissions of non-criteria pollutants[1], (as listed in Chapter 137 of the Department's regulations) by 25%, from 20 million tons, (1993 baseline data) to 15 million tons.[2]

◆**Outcome Measure:** Total mass emissions in tons per year of all non-criteria pollutants, except carbon dioxide, as documented in the biennial emissions inventory.

Background: Non-criteria pollutants, as used in this objective, include a wide variety of airborne substances that have the potential to be hazardous to public health or the environment. These pollutants are emitted from industrial point sources and area/mobile sources: they are also transported into Maine from outside sources (DEP has listed 212 non-criteria pollutants, including mercury, in Chapter 137 of the Department's regulations.) Limited health knowledge, public exposure information, and emissions data on source type, actual outdoor air levels and out of state transport are available on these listed pollutants. Once DEP has developed a sound air toxics emissions database, DEP will assess the 25% reduction objective in order to determine whether a more ambitious objective is reasonable.

[1]Non-criteria pollutants include hazardous air pollutants that are not subject to a numerical standard as defined by law.

[2]Neither the 20 million or 15 million ton totals will include carbon dioxide amounts. Carbon dioxide emissions are tracked through fuel consumption.

This objective is derived from Clean Air Act requirements and Department regulations, while the 2005 target date is based on Department judgment. The measure of success used to evaluate this objective is the amount reduced as demonstrated by the emission inventory database for hazardous air pollutants, which was completed for 1996, and updated in 1998. The department's ability to achieve success under this objective is also partially dependent upon federal rule making, e.g. federal rulemaking pertaining to Maximum Achievable Control Technology (MACT) on pulp and paper technologies, and surface coating and painting technologies.

A-3-010 **Non-regulatory programs.** Develop and implement a public education, pollution prevention and innovative technology assistance program that targets non-criteria pollutants, as listed in Chapter 137 of the Department's regulations.

A-3-011 **Monitoring and database development.** Develop a monitoring program and compile a database on non-criteria pollutants, as listed in Chapter 137 of the Department's regulations.

A-3-012 **In-state reductions.** Reduce by 25% the mass emissions of non-criteria pollutants, as listed in Chapter 137 of the Department's regulations, that are released from new and existing area, point and mobile sources, through the implementation of federal control requirements, market-based strategies and voluntary measures.

A-3-013 **Regional emissions transport.** Identify and implement regional strategies to reduce transported emissions of non-criteria pollutants, particularly mercury, as listed in Chapter 137 of the Department's regulations. Strategies will include collaborative efforts with federal, state and other governmental agencies.

GOAL B. LAND AND WATER QUALITY

To ensure that land and water resources are protected, restored and enhanced as ecological systems supporting both the natural world and human activities, and to ensure that all waters of the state meet or exceed their classification standards.

Issue Statement: Clean water is something people expect in Maine, but achieving it is still a goal in regard to many of the State's water resources. Notable successes in addressing the traditional "point sources" of pollution from industries have resulted in visibly improved conditions. However, these must be taken together with the prominent and difficult problems of addressing "non-point sources" of pollution from land uses, air loadings, and everyday activities of Maine citizens, which continue to put surface and groundwater resources at risk. Persistent bioaccumulative toxins from a variety of sources, phosphorus from soil disturbance, combined sewer overflows, habitat loss, and other issues are of concern. Many of these challenges will need to be met by continuing improvements and innovation from industrial and municipal dischargers. We also will need to pay increased attention to the impacts of every day decisions of Maine citizens regarding product production and land use, consumer choices and product disposal options.

B-1: Measurable Objective: Lakes and Ponds

By 2005, the overall trophic state of Maine lakes will be stable or improving[3]. Continue to improve monitoring for toxics contamination in lakes with the objective of removing fish consumption advisories when warranted.

◆**Outcome Measures:** (a) the overall trophic state of Maine lakes; (b) toxics levels (current information insufficient to set measures).

Background: Lakes are extremely complex systems. They are impacted by the synergystic effects of many different stressors, and, unlike rivers which respond rapidly to treatment technology improvements on point sources, they are very slow to recover. It is therefore important that this objective support prevention as well as restoration.

This is an objective over which the DEP has limited control but significant influence. Successful attainment of this goal will depend on changing attitudes and habits so as to modify human activities in lake watersheds. With the major problems from single sources largely under control, the remaining problems are more diffuse, subtle, slower to respond, and often costly to control.

B-1-014 Address nonpoint sources of pollution--loadings from runoff, sediment and ground water (including stormwater management and erosion control). Address nonpoint sources of pollution through development and implementation of standards, monitoring and assessment, educational and technical assistance, and provision of grants and loans (for example to replace malfunctioning septic systems).

[3] This objective uses the 1996 State of Maine Water Quality Assessment (305(b) Report) as a baseline. Trophic state is a description of the fertility of a lake, as measured by the amount of nutrients and vegetation in the water. Overall trophic state across the state is based on a variety of measurements such as relative number of eutrophic lakes, their relative acreage, relative phosphorus loading, relative transparency, etc.

B-1-015 Address nonpoint sources--loadings from air. Develop a strategy for dealing with certain types of loadings from air, focusing on persistent, bioaccumulative toxics. Support the Mercury Deposition Network.

B-2: Measurable Objective: Rivers and Streams

By 2005, 65 more miles of Maine rivers and streams will meet fishable/swimmable or other applicable water quality standards (excluding dioxin) as a result of a decrease in pollutants from combined sewer overflows (CSOs) and other sources.[4] By 2002, have dioxin levels in fish tissue above and below dischargers be the same.

◆**Outcome Measures:** (a) miles of rivers and streams meeting fishable/swimmable or other applicable water quality standards, excluding dioxin; (b) no fish consumption advisories due to dioxin by the year 2002.

Background: This objective deals with impairment of rivers and streams that is not related to dioxin. Of the 521 river miles that do not fully support fishable-swimmable goals, 238 miles are due to fish consumption advisories for dioxin in fish tissue. The second most significant source or cause of nonattainment is combined sewer overflows (CSOs), and the third most significant is hydropower impoundments. The costs involved with addressing these causes are very high.

Sixty-five miles is about 14.5% of the total river miles that are in nonattainment. DEP believes that this objective is ambitious, but achievable. (Our ability to predict the response of the rivers once point source technologies are put in place is relatively high). The removal of all dioxin fish advisories from Maine rivers by the year 2002 is also achievable because the paper mills that discharge to these rivers were able to implement new federal Best Available Technology ("BAT") or EPA defined "Advanced Technology" by 1998. The response time of dioxin levels in fish tissue to technology improvements in paper mills has been fairly rapid (2-3 years).

DEP's control over the achievement of this objective is therefore reasonably high. However, it is important to note that the objective measure is based upon current, limited information. As more monitoring is conducted, it can be expected that additional problems will be discovered.

B-2-016 Control point sources. Control point source discharges through licensing, compliance and enforcement, monitoring and assessment, educational and technical assistance, and provision of grants and loans.

B-2-017. Address nonpoint sources of pollution loadings from land and water (including stormwater and erosion). Address nonpoint sources of pollution through implementation of standards, monitoring and assessment, educational and technical assistance, and provision of grants and loans.

B-2-018. Nonpoint sources: loads from air. Develop a strategy for dealing with certain types of loads from the air, especially persistent, bioaccumulative toxics.

[4] Using the 1996 State of Maine Water Quality Assessment (305(b) Report) as a baseline. Approximately 448.8 of 31,672 river and stream miles (1.4%) do not fully support fishable-swimmable goals, and 97.3 miles (0.3%) do not meet designated water quality classification standards according to that Report. Since the report was produced new segments (largely in urban areas) have been identified as not meeting the "fishable/swimmable" standard. This is why the "background' section references "521 miles." Note: The 1996 Report pre-dates the state-wide mercury advisories. Mercury advisories represent a new area where we will need to establish a goal..

B-3. Measurable Objective: Estuarine and Marine Areas

By 2005, reduce by 10% the square miles of estuarine and marine habitat in nonattainment due to bacterial contamination.[5] Reduce the number of square miles not supporting designated uses due to other causes and, by 2005, develop a scientific basis to define "non-attainment", "impaired" and "threatened" coastal waters so that measurable objectives may be set in relation to these causes.

◆**Outcome Measures:** (a) the square miles of estuarine and marine habitat in nonattainment due to bacterial contamination; (b) the square miles of estuarine and marine habitat not supporting designated uses due to other causes (insufficient information currently available to set measures); (c) method not yet determined for establishing measures concerning beach systems and associated coastal resources.

Background: The primary sources of nonattainment in estuarine and marine areas due to bacterial contamination are combined sewer overflows (CSOs), malfunctioning septic systems, and the presence of overboard discharges (OBDs). DEP licenses OBDs, and provides grants for OBD removal, if funded by voters through a bond. The Department of Marine Resources determines when a shellfish area may be opened for harvesting, based on the removal of known discharges or when continuous sampling reveals that bacterial contamination is no longer a problem. The Department of Human Services oversees septic systems; the DEP also may provide grants for the replacement of malfunctioning septic systems that are having an impact on surface waters through the Small Community Grants program, provided this is funded by the voters through a bond. Therefore, control over the attainment of this objective by the DEP alone is low; control by state government as a whole is reasonably high.

Coastal water quality involves more than sanitation issues and shellfish. Toxic contaminants, nutrients and habitat availability all affect sustained use of Maine's marine resources. At present, our ability to measure impacts and effects of pollutants on marine and estuarine life is so poor that we are not actually able to say that coastal waters are impaired, or threatened, let alone whether water quality classification (standards) are being attained. We have a good assessment of the distribution of pollutants (through the DEP's Marine Environmental Monitoring Program, Gulfwatch, and the Surface Waters Ambient Toxics program ("SWAT") and now are in a position to synthesize the information to identify gaps and develop an ability to measure classification attainment, impairment, and threats.

B-3-019 Control point source discharges. Control point source discharges through development and implementation of standards, monitoring and assessment, educational and technical assistance, and provision of grants and loans.

B-3-020 Address nonpoint sources of pollution -- loadings from land/air/water. Address nonpoint sources of pollution through implementation of standards, monitoring and assessment, educational and technical assistance, and provision of grants and loans.

[5] Using the 1996 State of Maine Water Quality Assessment (305(b) Report) as a baseline, 382.5 sq. mi. nonattainment due to bacterial contamination; 38.4 partial attainment.

B-4: Measurable Objective: Wetlands

Ensure: no net loss of wetlands functions and values for regulated activities; that wetlands of special significance are identified and protected; and that the loss of all wetlands due to regulated activity is minimized. Maintain and analyze database and assessment methods so that a measurable objective may be set.

◆**Outcome Measures:** (a) net change in wetlands of special significance; (b) net change in other wetlands (insufficient information currently available to set measures.).

Background. With limited exceptions, the Department regulates wetlands alterations of 4,300 sq.ft. or larger. We do not regulate, and hence have no way of tracking, the accumulated loss of smaller wetlands areas. Therefore, this objective uses the term "wetlands of special significance", which is contained in DEP's wetlands regulations and is a subset of all wetlands. Within this limited framework, DEP's control over the achievement of this objective is fairly high.

B-4-021 Implement a wetlands program. Provide a wetlands program that utilizes the Natural Resources Protection Act (NRPA), compliance and enforcement, monitoring and assessment, educational and technical assistance, and planning.

B-5: Measurable Objective: Groundwater

By 2001, have the fundamental understanding and data necessary to set measurable objectives to protect ground water quality and evaluate its use, value and vulnerability.

◆**Outcome Measures:** Sufficient data to develop objectives and measures.

Background: Ground water protection and restoration has largely been conducted in the course of monitoring and remediation of particular sources regulated by the Bureau of Remediation and Waste Management, (e.g. landfills, hazardous waste sites, and underground storage tanks). Monitoring is conducted at those facilities and at certain other sites licensed by the Bureau of Land and Water Quality. Ground water quality is also monitored by the required regular testing of public water suppliers by the Department of Human Services. At present, however, there is no systematic state-wide program for the regular monitoring of ground water quality, nor is such monitoring undertaken by federal agencies or, at local scale, by municipalities. Furthermore, a review of cumulative impacts on ground water quality and quantity, and the risks posed to human and ecosystem users of ground water, is outside the scope of either DEP or DHS.

A need therefore exists for a systematic approach toward assessment of risks to ground water, incorporating use, value, and vulnerability of the resource. As part of developing a comprehensive ground water protection program for Maine, the Bureau of Land and Water Quality is developing a methodology that incorporates geologic data and data on known contamination sites to evaluate risk to the ground water resource on a state-wide basis. This will support existing methods for establishing remediation priorities in Bureau of Remediation and Waste Management, which has the primary responsibility for restoration of ground water quality at contaminated sites. It will also provide a means for efficiently directing resources toward ground water areas at risk.

B-5-022 Continue to support ground water protection. Continue to support groundwater protection through development and implementation of standards, monitoring and assessment, and educational and technical assistance.

B-6. Measurable Objective: Watershed and Ecosystem Health

Continue to work to protect ecosystems and, by 2005, develop the information base needed to establish measurable objectives for the protection of ecosystem health.

◆**Outcome Measures:** Use of biological criteria for rivers and streams as health measures.

Background: While DEP's other water objectives are specific to waterbody type, it is clear that the natural world does not observe such boundaries: streams and groundwater flow into lakes, rivers and estuaries, etc. It is equally clear that these resources must be looked at holistically, as the sum total of the conditions of a particular place, including consideration of social, cultural, and economic influences to assess the overall health of the ecosystem. A key management tool for ecosystem protection is a watershed approach that involves a coalition of private and public entities. Therefore, to be effective, DEP must rely on influence, rather than control, to achieve ecosystem protection. However, we have a high level of control over the development of ecosystem indicators. If the resources are applied to this activity, indicators can be developed.

B-6-023 Continue to support ecosystem protection. Continue to support watershed and ecosystem health through the development and implementation of standards, monitoring and assessment, educational and technical assistance, and planning.

B-6-024 Address usage issues as appropriate. Assist in resolving certain usage issues as appropriate, such as water withdrawal, water levels, and dam relicensing.

B-6-025 Provide leadership in environmental protection. Initiate and participate in the identification and resolution of emerging land and water quality issues, and development of methods for land and water quality protection. Foster development of innovative technologies that minimize or eliminate pollution and encourage facilities to go beyond compliance.

GOAL C. MATERIALS HANDLING

To protect public health, safety, welfare and the environment from pollution by oil, hazardous substances, solid waste or septage.

Issue Statement: The choice to live and vacation in Maine is often heavily influenced by the State's natural resources. The mountains and forests, the rivers, lakes and ocean, and the landscape in general draw people from far and wide. However, human activity, unintentional, can put these obvious assets, and less visible assets such as ground water, at risk. Petroleum or hazardous substance spills, tire stockpiles, and improper waste disposal practices are undesirable events/by-products of activities associated with our economy. The Department will continue to apply science-based, practical and innovative approaches to better manage the handling of petroleum products, hazardous substances, and solid wastes. To effect improved management, the Department will rely on education, technical assistance, regulation designed to protect our resources and public health, and remediation activities intended to restore our resources and similarly protect human health.

C-1: Measurable Objective: Contaminated Sites

By the year 2004, decrease by 20% the number of solid waste, hazardous substance and petroleum contaminated sites that pose an unacceptable risk to public health, safety, welfare and the environment.[6]

◆**Outcome Measures:** (a) number of contaminated sites; (b) number of homes with contaminated drinking water; (c) number of sites returned to reuse; (d) number of plans reviewed; (e) number of final remedies selected; (f) number of sites under remediation; (g) number of sites with alternative water supplies; (h) number of hazardous waste facility closures conducted.

Background: The purpose of this objective is to clean-up or contain the existing waste and petroleum contaminated sites in order to provide clean drinking water, ground water, soils, and surface water and to protect public health and safety. Additionally, it is desired that sites be returned to productive reuse as industrial, commercial, recreational, or residential properties.

Factors critical in determining the achievement of this objective are continued support for clean-up activities through bond issues, continued funding of existing programs supported by fee requirements, support for enforcement activities as necessary, adoption of soil clean-up guidelines, promotion of Voluntary Remedial Action Programs,[7] and creation of incentives for clean-up of industrial properties for economic reuse.

C-1-026 Emergency response. Conduct an effective emergency clean-up program responding to all reported spills of petroleum or hazardous substances.

C-1-027 Contaminated sites. Conduct the clean-up of petroleum and hazardous substances contaminated soil and ground water sites.

[6]As of July 1999, there are 446 hazardous substance and petroleum contaminated sites, 394 potentially contaminated solid waste sites (landfills), 472 state uncontrolled hazardous substance sites, 13 SUPERFUND sites, 167 Formerly Used Defense Sites, and 10 Department of Defense installations.

[7] The Voluntary Remedial Action Program, or VRAP, is discussed further in Strategy C-1-028.

C-1-028 Abandoned sites. Conduct the investigation and/or clean-up of 30 state uncontrolled hazardous substance sites, and participate in the clean-up of 60 Voluntary Remedial Action Plan (VRAP) sites and return the sites to productive reuse.

C-1-029 "Federal lead" sites. Conduct the clean-up of 24 SUPERFUND and Department of Defense sites.

C-1-030 Hazardous and solid waste sites. Process closure plans, require and oversee corrective action to control leachate, stabilize and monitor sites, and maintain the integrity of the sites to prevent harm to the public health, safety, welfare and the environment. By the year 2002, the remedy selection for the five (5) Maine high priority sites identified on the National Corrective Action Priorities System (NCAPS) will be made or site stabilization measures will be in place. By the year 2005, all facilities on the Government Performance Results Act (GPRA) list that are still within the Resource Conservation and Recovery Act (RCRA) program will meet the environmental indicators for "human exposure controlled" and "groundwater releases controlled".

C-1-031 Financial responsibility. Administer the third party damage claims and insurance programs to compensate persons for damages; determine eligibility and deductibles; and disburse funds to applicants to investigate and remediate discharges of oil from underground and above ground storage tanks.

C-1-032 Education and outreach. Prepare and distribute to tank owners and operators educational materials which facilitate compliance with the leak detection and abandonment (removal) requirements, and provide guidance on state fund eligibility.

C-1-033 Information management. Maintain accurate databases for solid waste, hazardous substance, and petroleum contamination programs. Where feasible, increase information dissemination and exchange through electronic media.

C-1-034 Program implementation. Maintain adequate levels of trained staff in order to administer the solid waste, hazardous substance, and petroleum contaminated sites programs.

C-1-035 Program assessment. By December 31, 2000, complete a comprehensive review of existing clean-up programs to evaluate the adequacy of total current program resources and allocation of such resources among programs; identify and plan for transitions that will occur within programs; and evaluate potential funding options for achieving long-term programmatic objectives.

C-2: Measurable Objective: Tire Stockpiles

Eliminate the significant environmental and health hazards posed by tire stockpiles as measured, in part, through the removal of an additional 7.5 million tires, from a 1999 estimate of 27 million tires, by the year, 2002.[8]

◆**Outcome Measures:** (a) number of tires; (b) number of stockpiles; (c) number of tires removed; (d) condition of tire stockpiles; (e) number of tire stockpiles in compliance with standards

[8] Funding for tire stockpile abatement is sufficient through 2001. Efforts toward meeting the objective beyond that date are subject to the availability of funding through bond issues or other sources.

Background: The purpose of this objective is to reduce or eliminate the tire hazards and water quality threats posed by tire stockpiles in Maine. The risks caused by tire stockpiles, such as fire potential, and air pollution from open burning of tires, will be addressed through compliance, enforcement, and hazard abatement activities. The primary focus of site abatements will be removal and processing of scrap tires for beneficial reuse.

C-2-036 **Unlicensed tire stockpiles.** Conduct compliance/enforcement activities as necessary to effect abatements, the cessation of use of unlicensed tire stockpiles, and to bring unlicensed stockpiles into compliance.

C-2-037 **State controlled tire stockpiles.** Conduct abatements at state controlled tire stockpiles as financial resources are allocated.

C-2-038 **Funding mechanism.** Investigate alternative means of funding to effect more abatements in the most expedient manner.

C-2-039 **Information management.** Maintain an accurate database for the tire stockpile program. Where feasible, increase information exchange through electronic media.

C-3: Measurable Objective: Waste and Petroleum Management.

Annually, prevent any significant new illegal discharges and emissions and minimize other risks to public health, safety, welfare, and the environment associated with the siting, design and operation of solid waste, septage, hazardous substance and petroleum facilities.

◆**Outcome Measures:** (a) number of applications and registrations processed; (b) number of licenses issued; (c) complaints investigated; (d) compliance inspections conducted; (e) violations documented; (f) enforcement actions initiated; (g) technical assistance and education and outreach activities conducted (h) number of underground tanks removed; (i) wells affected; (j) number of work years spent on applications; (k) number of work years spent on complaint response, inspections, and enforcement activities; (l) number of home heating oil tanks replaced.

Background: The Waste and Petroleum Management objective is derived from statute and Department regulation. The purpose of this objective is to prevent discharges and contaminated sites which pose unacceptable risks, and to ensure that all waste facilities are sited, designed, and operated in a manner that is protective of public health, safety, welfare, and the environment. This objective is accomplished, in part, through the application of regulatory standards to waste facilities (1150 solid waste facilities, 110 septage sites, 600 hazardous substance sites, and 9700 petroleum facilities) in order to minimize any risk that a facility might pose. Continued financial support of Department licensing and enforcement efforts, through federal and dedicated funding, is a critical factor affecting the achievement of this objective.

C-3-040 **Application processing.** Process applications and approve those that meet or exceed siting, design, and operational requirements established in rule.

C-3-041 Rulemaking/Authorization. Develop and update rules pertaining to waste oil, solid waste management (RCRA-D), hazardous waste management (RCRA-C), and underground petroleum storage facilities (RCRA-I) as needed to establish siting, design, and operational standards that minimize risks to public health, safety, welfare, and the environment. Standards will be at least as stringent as the federal requirements adopted by the EPA.

C-3-042 Compliance. Conduct compliance activities, including inspections, on 10% of solid waste sites, biomedical waste sites, hazardous waste sites, and petroleum handling facilities. Pursue enforcement actions to ensure implementation of licensing and regulatory requirements.

C-3-043 Above ground storage facilities. Consider the effectiveness of current above ground petroleum storage facility regulatory standards and compliance efforts to prevent petroleum discharges in conjunction with the Wellhead Protection Task Force and other forums where appropriate. Continue the implementation of the pilot program to remove substandard above ground oil storage tanks at residential locations. Through legislation, make the pilot program permanent through 2005.

C-3-044 Underground storage (UST) facilities. Continue to implement the joint DEP/EPA July 22, 1992 Memorandum of Agreement governing the implementation and operation of the Maine UST program and the state federal program authorization. Evaluate the effectiveness of cathodic protection, as routinely employed, to determine whether this means of ensuring tank integrity is adequate. In administering the Ground Water Oil Clean-up Fund, consider options that increase emphasis on release prevention including but not limited to greater reliance on private insurance.

C-3-045 Training. Ensure that people engaged in the handling of solid waste, septage, hazardous substances, and petroleum facilities are offered training on how to comply with the regulations. With this information, the facility operators should then be able to ensure that their respective facilities are operated in compliance with the regulations to prevent illegal discharges, emissions, and other threats to Maine people and the environment.

C-3-046 Information management. Maintain accurate databases for solid waste, hazardous substance, and petroleum contamination programs. Where feasible, increase information exchange through electronic media.

C-4: Measurable Objective: Abatement and Waste Transportation.

By the year 2004, reduce to insignificant levels the risks to public health, safety, welfare, and the environment from hazard abatement activities and transportation of solid waste, hazardous substances, and petroleum.[9]

[9]The regulation of abatement, installation and removal, and transportation seeks to prevent the creation of *any* risks from these activities. However, due to the human factor in the performance of these activities, the measurable outcome of this objective reflects the reality that zero risk will not be achievable.

◆**Outcome Measures:** (a) number of transporter applications processed; (b) number of abatement licenses and certifications issued; (c) number of notifications received; (d) number of compliance inspections conducted; (e) violations documented; (f) number of enforcement actions initiated; (g) number of training providers accredited; (g) number of LEAs (Local Education Agencies) in compliance with AHERA (Asbestos Hazard Emergency Response Act) requirements; (h) number of people reached through education and outreach and technical assistance activities; (i) number of federal DOT preemption determinations made against state transporter regulations; (j) change in the percentage of children screened who have blood levels in excess of 10 ug/dl; (k) percentage change in number of demolitions reported in the ten (10) largest municipalities.

Background: The Abatement and Waste Transportation objective is derived from statute. The purpose of this objective is to protect the public and the environment from exposure to possible hazards from the transportation of petroleum, hazardous substances, and solid waste; and to protect Maine people from the hazards of lead and asbestos containing wastes resulting from abatement of structures. Factors critical to achieving this objective are the development of new regulations for lead abatement, and continued financial support through federal funding at current levels.

C-4-047 Training. Ensure that people engaged in lead and asbestos abatement activities, underground oil storage tank installation and removal, and waste (hazardous, biomedical, oil, and non hazardous) transport are adequately trained to properly abate, handle, and dispose of these wastes.

C-4-048 Compliance for lead and asbestos. Conduct targeted field inspections, investigate complaints and take enforcement actions to ensure no public health or environmental risks are created through improper abatements, and that LEAs are in compliance with AHERA schools rules.

C-4-049 Rulemaking. Develop and update rules pertaining to lead and asbestos management, to the installation and removal of underground and above ground storage tanks, and to the transportation of hazardous and non-hazardous wastes, as needed.

C-4-050 Information management. Maintain accurate databases for abatement and transportation programs. Where feasible, increase information exchange through electronic media.

C-5: Measurable Objective: Waste Reduction and Recycling

By the year 2004, increase by 10% from 1999 levels[10] the portion of Maine's waste streams being managed through appropriate source reduction, separation, reuse, and recycling.

◆**Outcome Measures:** (a) amount of waste managed; (b) types of waste managed; (c) amount of waste recycled in a sound manner; (d) number of enforcement actions initiated due to inappropriate reduction, reuse, and recycling techniques; (e) number of reuse and recycling permits issued.

[10] The baseline reduction numbers for 1998 are as follows: hazardous waste (36.02%); toxic release (59.77%); and toxic use (21.66%). These numbers are estimates only based on information provided to the Department. The baseline solid waste recycling numbers for 1998 are as follows: residential materials (90,325 tons); bulky materials recycled (193,260 tons); and commercial materials recycled off-site (63,031 tons).

Background: The purpose of this objective is to reduce the amount of wastes generated and requiring disposal. The Department will pursue this objective, through education and regulations based on strong science, and through innovative, environmentally sound approaches to pollution prevention, waste reduction, recycling, beneficial reuse, and agronomic utilization. Preventing the generation of waste and promoting recycling and beneficial reuse will reduce threats to public health and the environment, saving both resources and money for Maine citizens and businesses. The need to regulate beneficial use of solid waste, the market for recycled products and the continued funding at current levels are factors critical to achieving this objective.

C-5-051 Pollution prevention and technical assistance. Develop and implement hazardous waste and petroleum pollution prevention or technical assistance initiatives focused at gasoline marketers, the concrete industry, the Lower Kennebec Pollution Prevention (P2) Project, wood products technical assistance, and the STAR TRACK program.

C-5-052 Environmental Management Systems (EMS). Continue to investigate the relevance and applicability of environmental management systems in various regulatory programs. Encourage the use of an EMS where appropriate.

C-5-053 Reuse of solid wastes. Provide education and technical assistance in following the newly promulgated regulations to encourage the safe, beneficial use and agronomic utilization of solid wastes.

C-5-054 Household and other hazardous waste. Conduct a survey of state collection programs for household hazardous waste. Develop options for establishment of a collection program in Maine and/or mechanisms for encouraging additional source separation of toxic components in the solid waste stream. In early 2000, promulgate the hazardous universal waste rules to facilitate recycling of these wastes.

C-5-055 Information management. Maintain accurate databases of toxics use and recycling. Where feasible, increase information exchange through electronic media.

GOAL D. RESPONSIBLE MANAGEMENT AND ENVIRONMENTAL STEWARDSHIP

GOAL: To ensure that Maine's environment remains healthy and productive in perpetuity, through the efficient and effective delivery of Department services and the development of an ethic of public responsibility for the State's natural resources.

Issue Statement: For the last third of the twentieth century, environmental protection in Maine has changed and matured first to meet, then to anticipate new challenges. It has engaged industries, activists, regulators and citizens in varying capacities to achieve a common end – sustaining, in perpetuity, the natural resources that support our quality of life.

This goal speaks directly to that end. For it to be achieved, the Department must continue to develop and improve our tools and services. We must continue to encourage and help citizens and industry find ways to minimize our impacts on our environment. And, Maine state government must become a model for the core value of environmental stewardship. We can achieve this objective through a concerted commitment to public service, pollution prevention and education.

D-1: Measurable Objective: Customer Service/Satisfaction

By the year 2001 determine a baseline for the percentage of customers who report satisfaction with services received from DEP.

◆**Outcome Measures:** (a) survey results; (b) letters from the public; c) customer comment cards; (d) efficiency measures for systems improvements, (e.g. average complaint response time, average permit approval time).

Background: The 1996 report of the Maine Economic Growth Council ("Measures of Growth") provided useful baseline data, reporting that, in 1995, 60% of Maine businesses report no difficulty in obtaining permits, and 32% of Maine citizens rate the value of state service as "good" or "excellent". DEP's customer service/satisfaction objective builds on this, while still recognizing that the Department's "customers" include a broad array of businesses and citizens involved with a host of programs that includes permitting among many others.

Improvements in customer satisfaction rely on continuing improvements in customer service. While program-specific process improvements are integrated throughout this strategic plan, the strategies described below represent major system improvements that show promise for delivering those Department-wide improvements efficiently and effectively.

D-1-056 Environmental complaint response system. Implement a department-wide complaint tracking and resolution system that will result in the expeditious handling of alleged environmental violations statewide.

D-1-057 GIS-supported license/permit review capability. Expand GIS capability, in order to access environmental resources data and allow staff from both regions and Augusta to assess the potential impacts of applicant activities with greater accuracy and efficiency.

D-1-058 Electronic submission of monitoring reports. Provide a system that allows regulated entities to submit monthly, quarterly and annual monitoring data in electronic form, thereby reducing the reporting burden and increasing the usefulness of the data to DEP.

D-1-059 Internal customer satisfaction. Continue to monitor the extent to which DEP staff feel their skills are fully and appropriately utilized, and identify areas where process action teams are needed to identify and recommend improvements in processes, skills and/or internal systems.

D-1-060 External customer satisfaction. Initiate distribution and regular compilation of customer survey cards through all licensing and compliance programs with customer contact, and provide regular reports of results to DEP managers. Ensure that customer surveys are distributed through the broad array of DEP programs, not just in conjunction with permitting and compliance activities.

D-2: Measurable Objective: Environmental Stewardship

By the year 2002, 25% of Maine residents will report that they participate routinely in environmental programs or activities, up from a baseline of 12% in 1996[11], and the number of business participants in environmental excellence initiatives will show a sustained upward trend.

◆**Outcome Measures:** (a) percentage of Maine residents reporting participation in voluntary environmental activities; (b) participants in DEP volunteer activities; c) voluntary compliance data; (d) number of participants in "environmental excellence" programs; e) number of attendees registering comments or requesting further information on comment cards distributed as part of DEP travelling exhibit.

Background: As pointed out elsewhere in this plan, the nature of environmental protection in Maine is changing. Increasingly, efforts must be aimed less at large, discrete polluters like paper mills, factories, landfill, and other stationary sources, and more toward decentralized, diverse and diffuse individual sources like automobiles, residential septic systems and fertilized front yards – more than previously understood, environmental protection must begin at home.

In recognition of this, DEP's ultimate goal is a Maine in which natural resources are protected because they are never under threat – where public responsibility for the protection of the state's resources is sufficiently widespread that environmental regulations are widely supported and willingly met. By stating the outcome in terms of "environmental stewardship" we attempt to capture this sense of willing public concern and shared responsibility. Its measure is apparent in the percentage of Mainers who report participation in some form of voluntary environmental activity. We hypothesize a relationship between these self reported actions and the level of public understanding and support for environmental protection.

[11]A total of 12% of respondents to the Maine Development Foundation's 1996 survey of Maine residents responded affirmatively to a question posed by DEP, to gauge this level of "stewardship".

D-2-061 Voluntary compliance and "Environmental Excellence". Implement a range of programs that encourage voluntary compliance with environmental regulations and/or provide incentives for efforts that exceed minimum requirements and/or encourage non-regulated activities that result in environmental benefit.

D-2-062 Volunteer monitoring programs. Continue and expand to other watersheds, other geographic areas and other media (air, land use) programs that utilize trained volunteers in the monitoring of natural resources, following the model of the successful volunteer monitoring efforts on Casco Bay and on Maine lakes.

D-2-063 Education and outreach. Provide a comprehensive program of public education, consisting of materials, educational events and involvement opportunities, to educate Maine citizens about the state's environmental issues, the implications of those issues, and the steps we all can take to address the environmental issues of concern to them.

D-2-064 Citizen involvement. Conduct a statistically valid survey of Maine residents to assess their involvement in environmental organizations, programs or activities.

D-3: Measurable Objective: Pollution Prevention

By the year 2006, the State will achieve a 60% reduction in the use of "Extremely Hazardous Substances", a 60% reduction in hazardous waste generation and a 60% reduction in toxic releases as defined by Maine's Toxic Use and Hazardous Waste Reduction Law.[12]

◆**Outcome Measures:** TUR program database

Background: The purpose of this objective is to reduce or eliminate pollution at the source by providing programs and incentives for companies to exceed compliance-driven goals and to achieve superior environmental performance. Focus will be on: implementing the state's new (1999) Toxic Use Reduction Law which allows voluntary goal setting and requires public posting of progress; encouraging the adoption of environmental management systems; encouraging closed loop systems and zero-emission goals; and using recognition programs such as environmental labeling and awards.

D-3-065 Voluntary compliance and "Environmental Excellence". Implement a range of programs that encourage voluntary compliance with environmental regulations, provide incentives to exceed minimum requirements, and/or encourage non-regulated activities that result in environmental benefit.

D-3-066 Toxics policy. Implement the updated State toxics policy and program.

D-3-067 Pollution prevention and Environmental Management System Education. Provide pollution prevention and environmental management system education to DEP staff, the regulated community and the public through initiatives emanating from DEP's Office of Innovation and Assistance and coordination with the other strategies in the State-EPA Performance Partnership Grant (PPG) that explicitly include an educational component.

[12]Based on the 1990 use of Extremely Hazardous Substances, the average of 1987/1989 hazardous waste generation and the average of 1990/1991 toxic releases in Maine.

D-4: Measurable Objective: CLEAN STATE Initiative

By the year 2002, and in concert with the Department of Administrative and Financial Services, ensure that the State has conducted compliance and management system audits at 30% of state-owned facilities.

◆**Outcome Measures:** (a) number of agencies represented in training programs; (b) number of facility audits conducted

Background: The CLEAN STATE program is derived from a governor initiative to bring all state facilities into compliance with state and federal environmental laws. Several factors prompted it, not the least of which is that the State should hold itself to the same standard as, or to a higher standard than, is applied to those which it regulates. Additionally, the federal government is increasing its scrutiny of segments of state facilities, frequently assessing large monetary penalties against them and requiring accelerated corrective action. Maine believes that a proactive approach is warranted, is cost effective, and demonstrates environmental leadership. In order to accomplish this work, a steering committee has been formed and a charter for the program has been developed.

D-4-068 Consultant services. Retain consultant services to provide an array of technical expertise to the Initiative.

D-4-069 Training. Ensure implementation of an effective training program from which attendees can acquire assessment and auditing skills necessary to conduct cross-agency facility and management system audits.

D-4-070 Facility and management system audits. Ensure, through appropriate incentives, that state agencies commit to facility and management system audits.

APPENDIX A

Introduction:
The following "Performance Measures" indicate how progress toward the goals cited in this Strategic Plan will be tracked through the State budgetary process ("Performance Based Budgeting').

GOAL A: CLEAN AIR

To ensure and enhance clean air for people, plants and animals, so that all can breathe and thrive in clean air every day of the year, in every part of the State.

Air Quality (Program #2050):

Performance Measures	1998-99	1999-00	2000-01
1. No. of ozone exceedance days/yr. for proposed 8 hr. avg.	10	10	9
2. No. of exceedance days/yr. based on 1 hr. avg. std.	1	1	0
3. Customer Satisfaction trend number (on a scale from 0 to 5)	4.51	4.55	4.60
4. Total tons of NOx and SOx per industrial emissions inventory	66,460 (1997)*	66,000 (1998) *	65,000 (1999)*
5. Average concentrations of benzene in ambient air.	4ppb (volume)	3ppb (volume)	3ppb (volume)
6. Customer Environmental Survey trends	7%	9%	11%
7. Compliance rate for licensed facilities	89% (1998)*	90% (1999)*	90% (2000)*

Explanatory Information: Performance Measures (1) and (2) relate to ambient air pollution trends for non-attainment pollutants (ozone). Measures (3) and (6) are compilations of customer service information accumulated through use of Departmental surveys. Measure (4) is air pollution (actual) trends (emissions inventory), and Measure (5) is air concentrations in Portland (EMPACT BEAM project). *** Indicates year in which data was collected to produce relevant Measure.**

GOAL B. LAND AND WATER QUALITY

To ensure that land and water resources are protected, restored and enhanced as ecological systems supporting both the natural world and human activities, and to ensure that all waters of the state meet or exceed their classification standards.

Land and Water Quality (Program #0248):

Performance Measures	1998-99	1999-00	2000-01
1. Number of wastewater discharge licenses issued	256	295	380
2. Number of compliance inspections performed at wastewater treatment facilities	3967	3900	3880
3. Number of Site Law, Natural Resources Protection Act, and Stormwater Management Law permits issued	955	1045	1135
4. Number of lakes monitored for chemical and biological baseline data	120	90	90
5. Number of gravel pits and quarries registered under the Gravel Pit and Quarries programs	367	396	425

Land and Water Quality (Program #0249):

Performance Measures	1998-99	1999-00	2000-01
1. Percent completion of first phase Casco Bay water quality assessment (DEP provides coordination for the implementation of the plan)	40%	60%	80%
2. Number of non-point source implementation projects overseen and funded for non-DEP sponsors	16	10	1

Land and Water Quality (Program #0252):

Performance Measures	1998-99	1999-00	2000-01
1. Acres of non-attainment marine habitat reopened by the removal of overboard discharges	1,200	1,200	1,200
2. Amount of grants and loans provided for water pollution control facilities for which engineering oversight was provided	$29.2 million	$20.0 million	$25.0 million
3. Number of septic systems installed under the oversight of the Small Community Construction Grants Program	193	97	290

C. MATERIALS HANDLING

GOAL: To protect public health, safety, welfare and the environment from pollution by oil, hazardous substances, solid waste or septage.

Remediation and Waste Management (Program #0247):

Performance Measures	1998-99	1999-00	2000-01
1. Manage remediation investigations at uncontrolled hazardous substance sites	5	5	5
2. Complete oversight of corrective actions at hazardous substance contaminated sites	1	1	1
3. Complete long-term oil remediation site clean-ups	45	45	45
4. Oversee site assessment/remediation at Voluntary Response Action Program sites	12	12	16
5. Review plans for the generator closure and clean-up at facilities which will no longer generate, treat, or store hazardous waste	6	6	6

Solid Waste Management (Program #0603):

Performance Measures	1998-99	1999-00	2000-01
1. Remove tires from uncontrolled tire stockpiles	3.2m	4m	3.5m
2. Issue solid waste facility licenses	110	110	110
3. Conduct compliance inspections at solid waste facilities	728	725	725

Tire Stockpile Clean-up (Program #0813)*:

Performance Measures	1998-99	1999-00	2000-01
1. Remove tires from small uncontrolled tire stockpiles	22,500	26,000	26,000

* This small dedicated fund was established to receive reimbursements from tire clean-ups. It is only a small portion of the overall tire program. For an overall perspective, the 0603 account and bond funds must be included.

GOAL D. RESPONSIBLE MANAGEMENT AND ENVIRONMENTAL STEWARDSHIP

GOAL: To ensure that Maine's environment remains healthy and productive in perpetuity, through the efficient and effective delivery of Department services and the development of an ethic of public responsibility for the State's natural resources.

Responsible Management and Environmental Stewardship (Program #0721):

Performance Measures	1998-99	1999-00	2000-01
1. Reduce Toxic Use – Millions of Pounds	500	400	308
2. Reduce Toxic Release – Millions of Pounds	17	11	7
3. Reduce Hazardous Waste – Millions of Pounds	9	6	4

APPENDIX B

CONCEPT / DISCUSSION DRAFT:

Introduction:

Companies are increasingly redesigning their operations to integrate their production and environmental control systems. The financial advantages of good environmental stewardship are becoming increasingly clear. The Department must adapt and change the way it administers its programs in order to encourage the needed innovations and compliment this trend without shifting impacts from one media to another. One area of opportunity is taking a systemic, rather than pollutant by pollutant or purely regulatory approach, to tackling priority activities.

We also will be building a different relationship with our public—one that acknowledges their increasingly prominent role in ensuring that environmental goals are set and met, challenged and reinforced. Industry promise and performance will be accountable to the public's interest in and demand for diminishing environmental impact. For the public to make its determinations, it must have real-time data. It must have the tools with which to create the market forces that drive economic competitiveness. Our ability to provide that data within a meaningful context will be critical. We will need to redefine and substantially strengthen our efforts to engage and empower the public in its emerging role.

INTEGRATING GOALS AND ACTIVITIES OF THE STRATEGIC PLAN

Opportunities under consideration as priorities for 2000 and beyond are: zero discharge technologies; hospital waste; composite production and waste; and mercury reduction. These and the other opportunities mentioned below are not new initiatives, but issues we are already engaged in. We are undertaking most of these projects as what might be called "practice fields". We see them as opportunities to learn and practice new approaches to project management, decision-making and problem solving. We will also evaluate the very real constraints that our existing systems and structures place on integrated approaches to problem solving. This will allow us to address potential barriers to long-term successful performance before we implement these new approaches more broadly. Outlined below are activities planned for each initiative.

Zero discharge --- The Department has been approached by three pulp and paper mills who have indicated a goal of moving their facility to zero discharge. In the early 1990s, the Department invested a significant amount of its wastewater treatment expertise assisting mills in reducing pollutant loads to our waters. The results were dramatic, and most mills routinely operate well below compliance limits. <u>The Department needs a multidisciplinary team to provide the same top caliber technical and regulatory assistance to anyone who wishes to go zero discharge.</u>

Hospitals --- It became clear during the 1999 legislative bill to look at microwave technology for biomedical waste that the hospital industry wants to act responsibly to deal with its wastes, but needs assistance. Since the medical waste stream has the potential to generate the toxins and pbts that are noted as priorities above, it is a logical sector to target for a cross media effort. The Department has developed a multidisciplinary partnership with the hospital community to foster leadership in the industry.

Composites --- From laminated wood to fiberglass to graphite, composites are a growing field. Lighter and stronger with each new generation, they present opportunities like recycling materials and the development of non-toxic matrices. Like the zero discharge initiative noted above, this is an area where the Department can serve as a source of information and expertise to help develop new, cleaner composite technologies. By becoming a resource, we hope to engage the public and the industry in a discussion about what "clean production" means for this sector and how best to achieve that goal. The Department must develop a team dedicated to understanding the needs and technology around composites and a targeted assistance program.

Mercury **---** This persistent bioaccumulative toxin has generated significant interest nationally and in the State of Maine of late. Fish consumption advisories for mercury apply to all the waters of the state. Maine has two reports detailing what we know about the sources of mercury (Land and Water Resources Council 1997 Annual Report: Mercury in Maine) and mercury in our wastewater (Mercury in Wastewater: Discharges to the Waters of the State, 1999). In addition, there has been legislation dealing with mercury products, national efforts to reduce mercury emissions from power plants and enactment of universal waste rules to encourage recycling of mercury wastes. These efforts have been part of a strategy to examine all the sources of mercury in Maine and work toward reduction. However, there has not been enough coordination of efforts to ensure we are doing the most effective reductions first, and some sources like dentists have received little attention. The Department must establish a dedicated team to develop and implement a comprehensive, interdisciplinary approach to mercury reduction and elimination that reaches individuals, businesses and industries. This effort will be used to pilot an approach that we can use with other persistent bioaccumulative toxins.

OTHER POSSIBILITIES:

While these four areas will be our main focus, there area several other areas where the need for integrated solutions is readily apparent.

Use of Toxic Use Reduction information **---** The results of our TUR effort are one of our proudest achievements. The data demonstrates a 22% reduction in toxic materials used, a 53% reduction in toxics released and a 38% reduction in toxic waste generated, all since 1990. The newly reenacted TUR law keeps the program going and sharpens our ability to effectively use the information that is created. Internet availability of toxics information will also allow the public to more actively engage in the process of toxics reduction. We will now be able to sort different types and volumes of toxics and facilities. It gives us a tremendous tool to focus our education, assistance and compliance efforts to get the biggest bang for the buck.

Integrating data systems **---** The corner stone of measuring discharges or the health of our environment is sound science based on accurate data. Presently, the Department collects volumes of data and information to support individual program needs. These data are entered into and retrieved from our current systems by staff whose training and experience allow them to interpret the data and understand its quality and meaning. Our goal is to make as much of the data available to the public to build their confidence and knowledge about the state of the environment and its protection. Public awareness is an important factor to drive environmental compliance. In order to achieve our goal, the data must be rigorously reviewed for accuracy and presented in a way that is easily accessible and understandable to less sophisticated users. These users must be able to combine data from multiple programs for a single facility or a geographical location of interest. The use of map-like geographical interfaces, Internet access and increased quality control on data collection methods will enable them to easily sift through large amounts of data to gather useful information about activities and trends. The conversion of the Department's databases and access methods will require a significant increase in resources and a willingness to reengineer how we gather, store and access data within the organization. Work is underway to demonstrate this concept by tying together several databases related to groundwater - including public drinking supplies, threats to groundwater (e.g. spills, storage tanks, discharge points and uncontrolled sites) and water quality sampling results. The result will provide new ways to look at the interaction of many activities relating to groundwater. Other areas of opportunity are the combining of permit, compliance and discharge data across programs.

Concrete **---** In 1999 the Department has wrestled with an industry with which it previously had little contact, the pre-form concrete industry. Spread throughout the state, these facilities make items like concrete steps or septic tanks. Their processes may involve acids, metals and paints. In addition, a significant amount of “clean” and contaminated concrete waste is generated, and there may be volatile and particulate emissions. Our experience with Durastone in Portland has shown us that the industry seems to have little appreciation of its environmental impacts or regulatory requirements.

Woodwaste --- In the 1970s the oil crisis prompted Maine to move in the direction of encouraging more diversity in our pool of power generation. Several biomass power plants were constructed, providing an alternative to fossil fuels and also a market for some of Maine’s sawmill and other woodwaste. With deregulation and the introduction of natural gas, a lot has changed. Many of the biomass facilities have shut down, and those still in production appear precarious. A 1999 study (Financial Impact of Loss of Biomass Plant Market for Sawmill Products, Irland Group) estimates that more than 875,000 tons of woodwaste are generated by the sawmill industry each year. This waste will need to be eliminated, recycled or directed to some other disposal route if the biomass plant option is not available. A legislative committee is examining the problem this fall, and the Department will be an active part of finding integrated solutions to this environmental and economic problem.

Sprawl **---** Our air and water are much cleaner then they were 20 years ago. As we celebrate these achievements and set our sights on less obvious problems like toxics, Pogo's nagging refrain "We have met the enemy and he is us!" clearly applies to the issue of sprawl. Development patterns that result in inefficient and expansive use of our land resources have tremendous environmental and quality of life effects that are only now beginning to be understood. Fragmentation of our woodlands, increased vehicle travel and associated air emissions, and loss of agricultural land to development are just a few of the impacts of unmanaged growth magnified by a buoyant economy. The diverse impacts and the social nature of the problem identify this issue as one ripe for an approach that integrates all levels of government and types of interests.

Environmental Management Systems **---** Environmental Management Systems (EMS) represent a relatively new and promising tool for applying a business systems approach to environmental protection. Whether the internationally recognized ISO 14001 standard, or others are applied, Maine companies will likely be better environmental performers and will be able to increase marketing opportunities particularly in European markets. DEP will promote the uses of EMSs within multi-bureau programs, with staff training and within regulatory flexibility projects.