

Final

Department of Environmental Conservation

Strategic Plan for 2001 to 2005

March 2000

A Letter from the Commissioner

First I want to thank the members of the public who took some of their valuable time to review and comment on this, our second strategic plan. The process of discussing and improving the plan can be as important as the plan itself. I would also like to express my appreciation for all of the hard work by department and agency staff and the Department Planning Coordination Team who helped to develop this plan. Through these efforts in planning and management, this department will continue to improve our service to Vermonters through the conservation of the state's natural resources and the protection of the health of its citizens.

The Department of Environmental Conservation works hard to maintain the quality of life we all enjoy in Vermont. This includes protecting public health by ensuring our air is breathable, our drinking waters are safe, and our lakes and streams are safe for swimming. In addition, we help ensure that our ecosystems are healthy through the management of wetlands and surface waters and the wastes that may affect them.

I am proud of this plan and will use it to guide our annual planning and budget requests. Taking the longer view on many environmental problems is important and this plan summarizes this vantage. Please note our Vision on page 5 and the goals for each of our programs.

To reach our longer-term goals we need achievable smaller steps. This plan contains new outcomes and indicators of success. We will be tracking these to show progress in the coming years. We invite your comments on our indicators and on the strategies we may use to further our progress.

Many thanks again to all who participated in the development of this plan, and I look forward to a continuing review and dialog as we turn our plans into action.

Canute E. Dalmasse,
Commissioner of the Department of Environmental Conservation

Date _____

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PURPOSE

This strategic plan will guide the Department of Environmental Conservation annual operation plans and budget requests for the years 2001 to 2005.

Strategic planning enables the public, citizen groups, the regulated community, and all Agency of Natural Resources personnel to work together to focus the work of the Department on directions and actions for the next five years. This document embodies the advice from a wide range of groups and individuals who are helping to shape the future of Vermont's environmental programs.

INTRODUCTION

The Department of Environmental Conservation is one of three Departments in the Agency of Natural Resources. The Department has an annual budget of about \$25 million and 277 employees to advance its mission. Funding sources include the state's General Fund (17 percent), the Transportation Funds (1 percent), federal funds (33 percent), special funds (47 percent) and inter-departmental transfers (2 percent). The Department's activities include: education, grants and regulatory oversight of the quality of air,

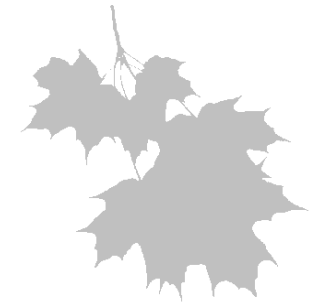
surface water, drinking water, and groundwater; wetland and surface water ecosystems; and waste management and disposal.

This Strategic Plan is a revision to the Department's 1997 plan. The plan begins with a statement of our Vision, Mission and Guiding Principles. The vision describes the future condition we collectively wish for Vermont and the balance we seek between Vermonters and the resources that the Department manages. The mission tells what the Department is working to accomplish. Guiding principles list the principles employees follow in working to achieve the Department mission.

The goals, outcomes, strategies, and milestones for the Department are organized by and presented for each of the six programs that make up the Department. The programs are air, surface water, drinking water, groundwater and earth resources, waste, and management. Each section is organized by a general program goal that tells what each program is working to achieve. Goals tell the direction the program is heading rather than the specific end point we want to achieve. Outcomes provide measures of progress for each program and tell what progress we plan on making by 2005. Strategies describe existing or new efforts that may be

carried out in the next five years to help achieve the outcome.

Milestones are included for some strategies and represent interim measures and target dates unless stated otherwise. June 30 is used for a target date in a given year for completion of an outcome or milestone. This is the date of the end of our state fiscal year.



VISION, MISSION AND GUIDING PRINCIPLES

Vision

We envision a Vermont where people live in harmony with diverse and healthy natural systems; appreciate and enjoy our natural resources; understand the environment; work together responsibly to reduce waste and risks to human health and the environment; and prosper without significant degradation of natural systems.

We envision a Vermont where people breathe clean air; drink clean water; eat safe food; and live in a sustained and healthy environment.

Mission

To preserve, enhance, restore, and conserve Vermont's natural resources, and protect human health, for the benefit of this and future generations.

Guiding Principles

While working to achieve this mission, employees of the Department of Environmental Conservation will:

- Adhere to the highest standards of personal and professional conduct.
- Act and speak in a manner that inspires public confidence and promotes the Department's credibility.

- Respect individual rights and minimize intrusions into people's lives.
- Be accountable, accessible, and helpful to the public.
- Provide clear, prompt, fair, and well-documented decisions and guidance.
- Improve Vermonters' understanding of the environment and related issues through effective communication and education.

- Continue to learn about our environment, technology, and management techniques.

- Involve the people of Vermont in making decisions that affect the state's natural resources.

- Wisely pursue innovative approaches to environmental problems to determine their effectiveness.

- Promptly adopt proven new solutions to environmental problems.

- Coordinate programs across all environmental media.

- Promote pollution prevention, recycling, and consideration of the cumulative impacts of activities.

- Consistently and fairly apply and enforce environmental laws and standards.

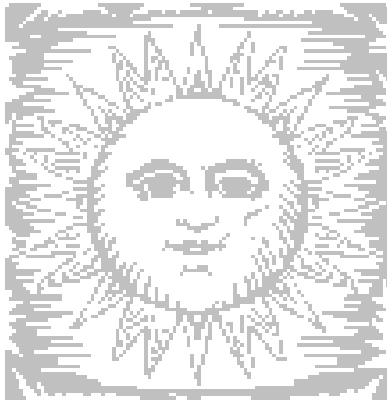
- Develop standards and requirements that consider both economic and environmental sustainability.

- Always consider the consequences of today's decisions for future generations.

- Recognize that all powers and authority to carry out the Department's Mission are derived from the people, and that Government works to the benefit of the public, not to our convenience as State employees.

PROGRAMS

For the purpose of this plan, the Department's work is organized into six programs. Below is the strategic plan for each of the Department's six programs - Air, Drinking Water, Surface Water, Waste, Groundwater and Earth Resources, and Management. Each program has a goal that describes what the program is working to accomplish. The general review section provides an overview of the status of the resources addressed by each program and a summary of Department efforts to manage them. This is followed by a section on trends and concerns for each program which identifies areas that need attention in the next five years.



This document provides a summary of what the Department efforts will

be over the next five years. These efforts include many long-established ongoing activities, including technical assistance, grants and regulatory services. A comprehensive description of Department ongoing activities is available in other documents.¹ Each program works in partnerships with citizen groups, municipalities, other government agencies and businesses. These coordinated efforts are critical to the success of Vermont making progress towards each of the program goals.

¹ Copies of Department project sheets are available on request.

AIR

Goal

Maintain a level of air quality in Vermont that supports a healthy, diverse ecosystem; a healthy, safe human environment; aesthetic beauty, and compliance with state and federal clean air legislation.

General Review

Air quality has improved in Vermont as a result of implementation of state and federal laws controlling air pollution. Since adoption of these laws, beginning in 1970, ambient air quality has improved significantly for the pollutants lead, sulfur dioxide and carbon monoxide. For particulate matter (dust and fine respirable particles) slight improvements have been made over the years. However, for the pollutants ozone (precursors of smog) and nitrogen oxides, very little progress, if any, has been made. Smog is a product

of several contaminants that include ozone and particulate matter.

Currently, air quality in Vermont meets national ambient air quality standards for carbon monoxide, lead, sulfur dioxide, nitrogen dioxide, and ozone. However, for the air pollutant ozone, it meets the standard by the slimmest of margins. For the recently adopted national ambient air quality standard for Fine Particulate Matter, preliminary data suggests Vermont meets the standard, but it is too close to say with absolute

certainty. The clarity of the atmosphere or visual range, as measured by the number of days with visibility greater than 40 miles, is degrading.

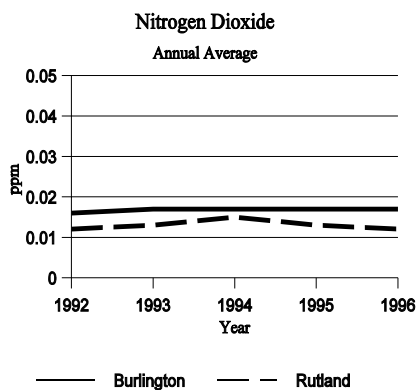
The air quality of Vermont is continually compromised by both in-state and out-of-state sources of air pollution. Sources of Vermont's air pollution vary in location and size. In-state sources include discharges at a number of industries and numerous discharges from everyday activities such as automobile operation, small businesses and residential activities. Out-of-state sources include major discharges from upwind power generation facilities, and large scale urban transportation contributions. Some of these sources may be international in origin.

State efforts to improve air quality begin with monitoring and assessment projects to determine where government action will be most effective in reducing or controlling pollution. Providing Vermont businesses and industries with technical assistance and inspections, and coordinating with other regions and states are all effective in helping to improve our air quality. Permits are issued to control air pollution from the construction and operation of major stationary discharges located at larger businesses. Performance and equipment standards are provided to reduce air pollution from smaller discharge sources such as the

wholesale and retail marketing and distribution of gasoline pumping, motor vehicle emissions, and wood stoves.

Trends and Concerns:

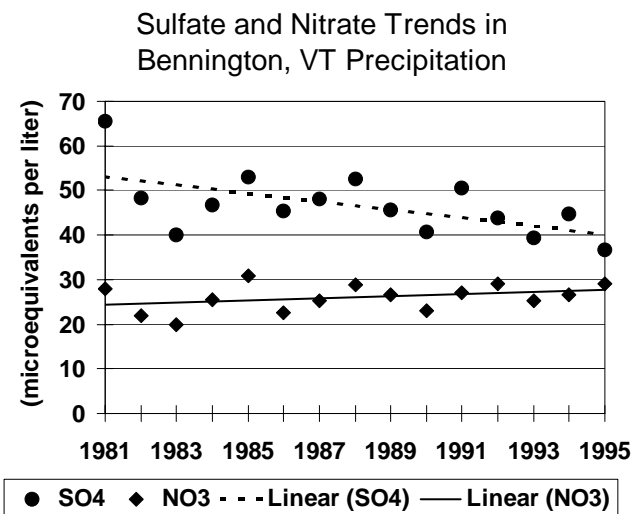
Nitrogen oxides are a product of complete combustion of fuels. This family of air contaminants is of concern due to the roles these oxides play in the formation of ozone, fine particulate matter, acidic deposition, and global warming. Levels of nitrogen dioxide are monitored routinely in two communities: Burlington and



Rutland. As shown, the trend of the ambient concentration of this pollutant is flat. This results from the fact that growth in the use of combustion energy is offsetting the reduction of emissions we are

achieving at the source.

Precipitation chemistry data show transfers of air contaminants to sensitive Vermont aquatic and terrestrial ecosystems, and track the fate of emissions from local and upwind sources. During the past 15 years, wet sulfate deposition from the National Atmospheric Deposition Program site in Bennington has declined, and additional reductions are anticipated as Title IV of the federal Clean Air Act produces further reductions of upwind sulfur emissions. Upwind, nitrogen oxide emissions have not been reduced and their concentration appears to be increasing. Without specific programs to address emissions of nitrogen oxides in the Midwest, this disturbing trend will continue.

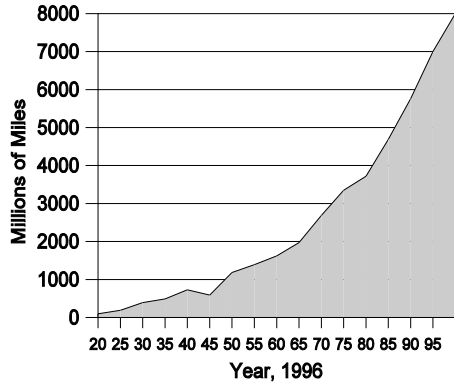


Data other than direct monitoring of

air pollution levels provide indicators of areas to address. Motor vehicle operation is a major source of air pollution in Vermont. Motor vehicle air pollution includes toxic and carcinogenic air pollutants. It contributes to the formation of smog and acidifying emissions, fine particle formation, and climate change. Vehicle miles traveled continue to increase along with total fuel consumption.

Reducing Vehicle Miles Traveled (VMT's) in a highly active tourist state has many dimensions, some of which are competing in nature. Beyond reductions in VMT's, strategies to abate motor vehicle air pollution include cleaner motor vehicles, enhanced vehicle maintenance, car pooling/ride sharing, improved mass transit, and alternative-fuel vehicles.

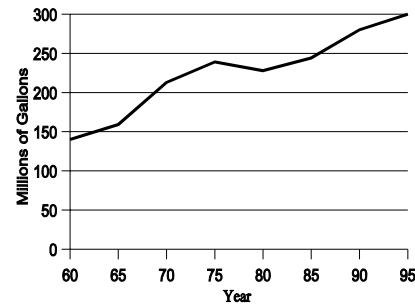
**Vehicles Miles Traveled
Annually**



The increased wholesale and retail distribution of gasoline – the actual fueling of cars and trucks at gas stations – is also of concern as a significant source of air pollution. The uncontrolled emissions associated with the increasing distribution and consumption of this fuel results in emissions of hydrocarbons which exceed the total emissions of hydrocarbons from all the major industrial operations in Vermont combined.

The visual range observed by the human eye integrates a complex phenomena of atmospheric chemistry involving air pollution, humidity, and other meteorological factors.

**Annual Gasoline Sales
In Vermont**



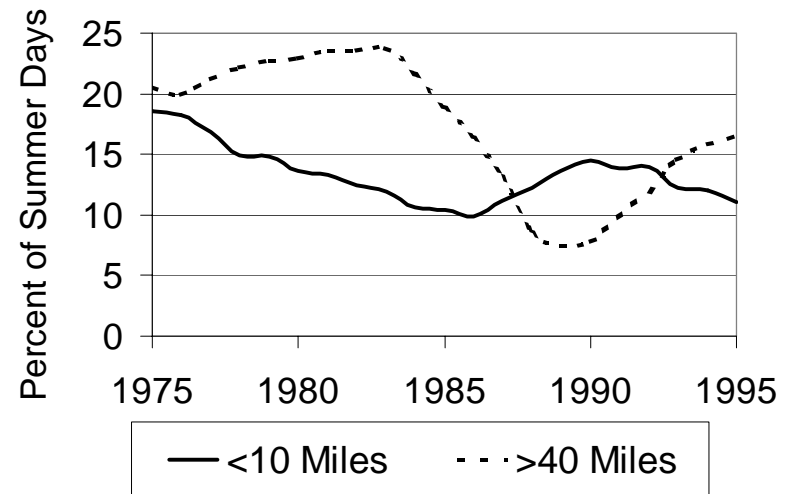
In Vermont, it has been determined that sulfate air pollution is a key indicator of visual range. Sulfate air pollution starts out as emissions of sulfur dioxide, a gaseous byproduct of burning fuels containing sulfur. The principal source of these emissions is coal-fired electric utility generating stations in the Midwest (we currently have no coal-burning utility sources in Vermont.)

The gaseous sulfur dioxide undergoes a transformation in the atmosphere to sulfate, a very small particle (a component of fine particulate matter defined as particles less than 2.5 microns in diameter). This small particulate matter stays suspended in the atmosphere for long periods of time and therefore is transported long distances.

Visual range observations are made at the Burlington Airport. These data document that in the past 20 years, the frequency of hazy days (visibility less than 10 miles) has declined.

However, the frequency of very clear (visibility greater than 40 miles) summer days was declining as well, and now appears to be recently increasing for no apparent reason. This trend is interesting and needs further monitoring.

**Burlington Airport Visibility
(5 Year Running Averages)**



Air Outcomes

1. By June 30, 2005, improve visibility by 5 percent over 1992 levels.
(Strategies 1 and 2)

Visibility improvements are determined by measuring the changes in sulfate levels (until such time as U.S. Environmental Protection Agency finalizes a visibility measurement based on a unit of measurement called a deciview.)

The baseline levels (1992) of sulfate concentration of the summer seasonal average has been determined to be 3 micrograms per cubic meter.

2. By June 30, 2005, increase Vermont's compliance with hazardous air standards from 17 percent in 1996 to 80 percent. (Strategy 3)

Compliance with hazardous air standards is determined by the percentage of priority toxic air pollutants that meet the Hazardous Air Contaminant standard.

3. By June 30, 2005, maintain compliance with 85 percent of national ambient air quality standards.
(Strategy 4)

There are seven national ambient air quality standards. Vermont currently monitors constituents for six of these and plans to monitor the seventh (PM 2.5) over the course of this strategic plan. Vermont currently complies with the standards for the six monitored constituents (however, for ozone just barely). Regarding the seventh constituent, studies and data collection to date indicate that levels are "to close to call," and therefore the Department cannot make an affirmative statement as to whether present levels comply with the health standard.

Strategies and Milestones

Strategy 1:

Install air pollution control devices on regional power utility generators and waste combustion facilities which have a discernable impact on Vermont. The focus of this strategy would be a reduction in nitrogen oxide and sulfur oxide emissions.

Milestone 1a:

Ongoing. Track EPA progress in following through on the Sec. 126 Petition and the emission reduction requirements of the states of the Ozone Transport Assessment Group.

Milestone 1b:

By June 30, 2005, all pollution control devices will be installed on upwind sources as a result of the Sec. 126 Petition to USEPA.

Strategy 2:

Implement a comprehensive program to understand the nature and magnitude of fine particle air pollution in Vermont, and to control those sources which contribute to fine particle air pollution.

Milestone 2a:

By June 30, 2001, have fully operational a fine particle monitoring network which provides routine measurement of fine particle mass, and physical and chemical composition.

Milestone 2b:

By June 30, 2001, have fully implemented a comprehensive data analysis program that routinely performs source apportionment and source attribution analyses based upon the fine particulate data.

Milestone 2c:

By June 30, 2001, have fully implemented a public information and education program that communicates to the public the health and environmental threats from fine particle air pollution.

Milestone 2d:

By June 30, 2002, have developed a comprehensive inventory that identifies the sources of fine particulate matter and quantifies the nature and magnitude of their emissions to the atmosphere.

Milestone 2e:

By June 30, 2003, adopt an acceptable state risk-based health standard for fine particulate matter cognizant of the fact that the health science indicates that health effects from fine particulate matter can be experienced at all levels of exposure.

Milestone 2f:

By June 30, 2003, adopt a state program to abate emissions from heavy duty diesel vehicles operating in Vermont.

Strategy 3:

Develop Toxic Action Plans for those chemicals which exceed the Hazardous Ambient Air Quality Standard.

Milestone 3a:

By June 30, 2002, develop and begin implementation of all Toxic Action Plans (TAPs).

Strategy 4:

Maintain base air pollution control program, including compliance, permitting, planning, monitoring and outreach and education.

SURFACE WATER

Goal

Maintain and enhance a level of surface water quality, quantity and stream morphology that supports the integrity of healthy ecosystems; protects the public health and safety; supports high quality recreation associated with the waters; and supports use of state waters for public water supply, irrigation and industry. Provide for convenient public access to the state's waters. Assure compliance with the Federal Clean Water Act.

General Review

During the past three decades, 58 rivers and 3 lakes have experienced significant water quality improvement for swimming, fishing, boating, and aquatic life, predominantly as a result of the construction of municipal waste water treatment facilities at a total cost of \$468 million. In 1994, Vermont was the first state in the nation to complete the installation of secondary treatment on all of its municipal treatment plants.

While the overall condition of many of Vermont's rivers and lakes has steadily improved, there are problems needing to be resolved:

- A fish consumption advisory is in effect for all of Vermont waters due to mercury contamination.
- A fish consumption advisory is in effect for the Hoosic River due to PCB contamination.
- A lake trout consumption advisory is in effect for Lake Champlain for fish longer than 25 inches, due to PCB contamination.
- We are experiencing a loss of aquatic habitat, increased run-off and increased contaminant loading from land development and sprawl.
- Excessive phosphorus from land

run-off and its accumulation in lakes has degraded lake water quality.

- At the highest elevations in our watersheds, acid precipitation (mostly from out-of-state sources) has harmed many lakes and streams.
- Soil erosion from development activities, forest clear-cutting and poor agricultural practices have degraded water quality and habitat.
- Undesirable stream channel characteristics resulting from floods, flood plain encroachments, watershed land uses, and historic stream alteration practices have increased flood hazards, risks to public safety, damage to private property and public infrastructure, and have degraded natural resource values.
- Many lakes and ponds throughout the state have been invaded by nonnative aquatic plants and animals, such as water chestnut, Eurasian watermilfoil and zebra mussels.

- Altered stream flows and lake levels from hydropower dams and water withdrawals, flood control structures, and fall/winter lake drawdowns to control aquatic vegetation or reduce damage to docks and retaining walls, have harmed ecosystems and the recreational fishing of some waters.

- The lack of adequate vegetative buffers along streams and lakeshores has increased water temperature, increased bank erosion, increased the movement of non point sources of contamination to surface waters, and degraded stream habitat.

- Localized water quality problems need to be addressed. These include metals and acid leaking from old mining operations, sewer overflows where sanitary and storm water are combined, communities with widespread septic system failures, and contaminated sediments.

Actions taken by the Department include technical assistance, public education, monitoring, regulation, and funding of remedial projects. Technical assistance and public education assist a range of Vermonters from wastewater treatment plant operators who need help in resolving plant operation problems to citizen groups wanting to stabilize river banks or draft a local watershed protection plan. Meetings, one-on-one consultations, brochures, newsletters, a website,

and workshops are all used to communicate technical assistance and to make the public more aware that everyone of us may be both a part of a problem and able to help with solutions.

Monitoring includes both ambient and compliance monitoring. Ambient monitoring measures the existing conditions of lakes, streams and wetlands to determine the health of our surface waters and to enable all involved parties to make informed decisions. Compliance monitoring usually measures the impacts of pollutants from an activity or business to assure that standards are met and water quality is protected.

Regulatory work promotes sound management and conservation activities in wetlands, rivers and streams, lakes and ponds, industry and municipal facilities. The Department regulates: the application of pesticides to surface waters; construction work in lakes and streams; dam construction and removal; and the discharge of stormwater and other pollutants from development, industrial, municipal, sludge and septage sources. The Department also manages withdrawal and diversions of waters from our rivers and lakes for uses such as hydroelectric projects, snowmaking and public water supplies.

The Department provides grants, loans and/or contracts. Our work involves more than providing funds,

however: municipalities using state grants may also receive assistance in the design of a project, oversight of construction, operations assistance and financial management. Grants, loans and/or contracts are managed and provided for control of aquatic nuisances, wastewater treatment plant and collection systems, activities to address nonpoint sources of pollution and to assist regional commissions in planning water-related issues. The Department designs and builds improvements on state lands such as shower and bath buildings at State parks, handicapped accessible fishing piers, and new water systems for fish culture stations.

Local actions to improve the condition of our surface water resources are also increasing. These efforts, in combination with state efforts, are limited only by the availability of funds to support protection and improvement projects.

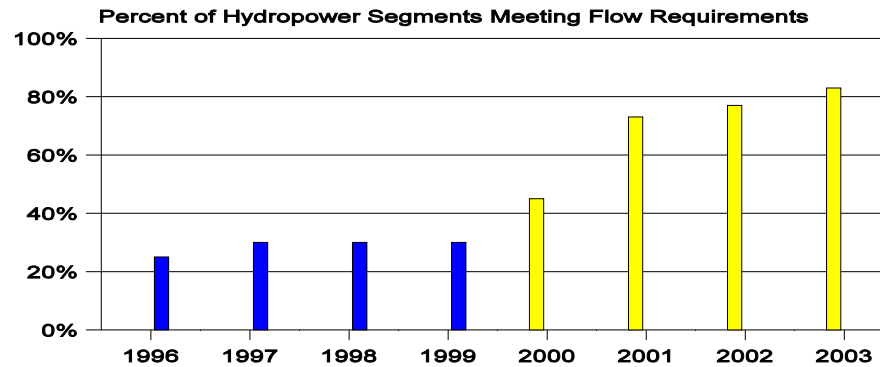
The Department is increasingly using watersheds as the basis for water quality protection and management, and to determine assessment and monitoring priorities. Through the Department's educational efforts, watersheds are now the focus as people learn about their individual role in causing and controlling pollution, protecting water resources, and in preserving the land through "smart growth." At the writing of this plan, the Department is initiating its Watershed Improvement Project which will integrate all these and other activities of the Department with local efforts and actions to

improve our surface water on a watershed by watershed basis. As part of this effort, bioassessment and biomonitoring will increasingly guide water quality management.

Trends and Concerns

As the population expands, agricultural and forest land is continually converted to less pervious developed urban area. Many of Vermont's remaining farms are tending to increase in size and animal density, and will use flood plain crop land and riparian zones more intensively as a result. Silvicultural uses are becoming more intensive, as will recreational uses of waters. These pressures which threaten our valuable wetlands, shorelands and public access to our waters will not diminish. With these pressures comes the increasing potential for flood damage and erosion, as well as pollutants such as phosphorus and sediments and exotic species to reach and impair surface waters. These trends will place additional stresses on the capacity of the waters of the state to assimilate waste, which could result in irreversible changes to the environment. At the same time there is also an increasing demand for high quality surface water for recreation.

Detailed studies will be necessary to allocate waste discharge needs in light of existing and designated uses of the waters, including recreation use, and to determine wasteload allocations where water quality problems are found. Water quality problems will require Total Maximum Daily Load (TMDL) studies where it is difficult to identify the causes, and to specify



the solutions needed to meet water quality standards. Current national trends indicate that solutions will become increasingly technical and complex.

Phosphorous loading to Lake Champlain is a concern and a priority because of plant and algae growth this nutrient promotes. In 1979 Vermont began funding phosphorus removal upgrades for wastewater treatment plants, and to date has invested more than \$28 million in the Lake Champlain Basin. In 1996, comprehensive plans were completed which had five year and twenty year loading rate targets for both point and non point sources.

Since 1995, reductions in phosphorus loading from nonpoint sources is estimated at 10 metric tons per year while reductions from point sources are expected to total 14 metric tons per year by 2001. Reductions in both point and nonpoint sources of phosphorous are on track with the five-year targets set in the plans.

While significant progress has been made over the past two decades in the restoration of our waters, the nonpoint source pollution problem is much larger and more widespread. In addition, there are increasing demands for potentially conflicting uses of the same surface waters such as boating, swimming, and fishing.

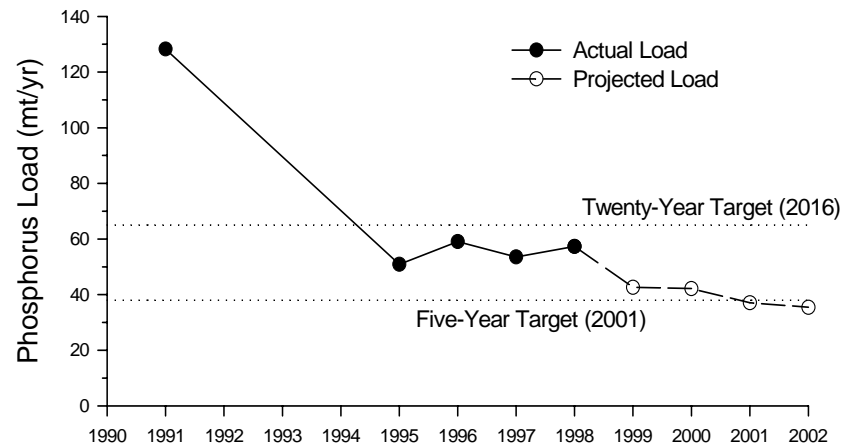
The increasingly complex nature of water quality protection and restoration and the need for water access by the public will require all who live in the watersheds and influence the waters to take part in their conservation and wise management. There will be an increasing need for watershed plans developed by local teams of

concerned officials and individuals in order to attain the commonly desired results of water quality and water access within a basin. Vermont will implement a new collaborative approach to focus state water quality planning and management in watersheds. This approach will allow landowners and municipal officials to work together to seek solutions to water resource protection and restoration issues.

It is important for Vermonters to realize that all land use activities affect water, and it is no longer enough to identify and correct obvious large sources of pollution. Myriad seemingly minor land use decisions can together cause a significant impact on watershed resources. In addition, because of the diffuse nature of non point pollution, much surface water protection or restoration will need to come from local land use/zoning initiatives. The role of the Department in offering technical assistance and support for local action will increase. There will continue to be an ever-increasing need to monitor both our actions and their results to determine the most effective ways to improve our surface waters. Our efforts will address the cumulative effects of pollution and the complex natural, social and economic factors involved in implementing effective corrective or protective actions. In order to coordinate the planning and policy development for river basins, there will be an increased demand for mapping of the existing and projected uses of our rivers, lakes, wetlands and adjacent areas.

Finally, Vermont's dams are aging and many receive limited routine maintenance from private owners and therefore may be in poor repair. Additional resources will be needed in the next five years to complete inspections required by statute.

Vermont Point Source Phosphorus Loading to Lake Champlain



Total point source loads from all Vermont wastewater treatment facilities in the Lake Champlain Basin, compared with the five-year and 20-year point source target loads specified in the Vermont ANR 1996 *Lake Champlain Phosphorus Reduction Vermont Implementation Plan*.

Surface Water Outcomes.

1. By June 30, 2005, the total number of water bodies on the state's "A" and "F" lists will be reduced from 24 percent in 1998 to less than 21 percent. (Strategies 1, 2, 3, 6, 7 and 8)

The "A" list is the state's list of Impaired Waters submitted biannually to the EPA in accordance with section 303(d) of the Clean Water Act. It lists water bodies where one or more segments do not meet water quality standards. The "F" list contains priority water bodies where one or more waters segments are altered by flow modifications or water level manipulation. The lists are combined in this outcome as it is anticipated that waters impaired by flow/water level manipulation will be required to be added to the "A" list in future listings.

The Department expects that even as water segments are improved and removed from the list, new waters will be added to the "A" list through the planning period. This will be due to increased assessment efforts that will identify previously undetected water quality impairments. A delayed response time in the environment following implementation of restoration activities is also expected to limit the number of water bodies that can be removed from the lists by June 30, 2005.

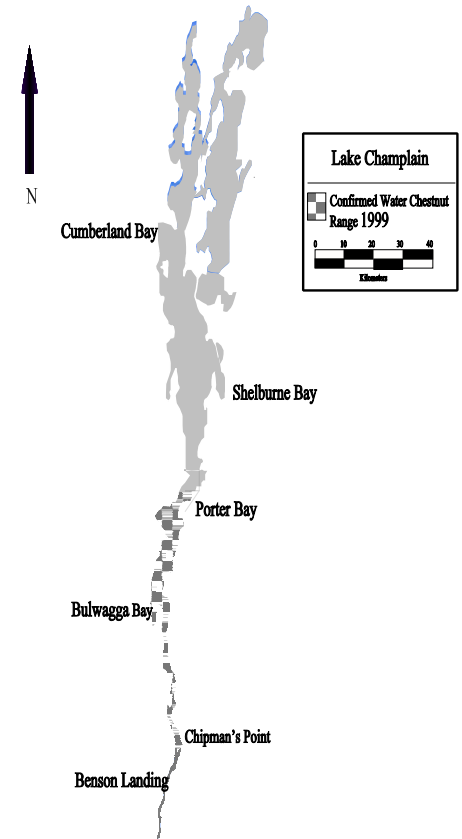
2. By June 30, 2005, the water chestnut population in Lake Champlain north of Chipman's Point will be effectively managed by hand pulling only. (Strategies 1, 2, 3 and 8)

Currently the water chestnut population north of Chipman's Point is managed with mechanical weed harvesting equipment. The Department anticipates that this work will be controlled sufficiently to enable maintenance by hand by 2005.

3. By June 30, 2005, the total number of water bodies on the state's "E" list will increase by less than 1 percent above the 1998 level. (Strategies 1, 2, 3, 7 and 8)

The "E" list is a list of water bodies where one or more water segments are altered by exotic species. In 1998, less than 5 percent of the states water bodies were on the "E" list.

4. By June 30, 2005, a 28-metric-ton-per-year reduction in phosphorus loading to Lake Champlain from Vermont and Quebec will be achieved. (Strategies 1, 2, 3 and 8)



This is a 10-year, 50 percent milestone toward meeting the 20-year goal of a 56-metric-ton-per-year reduction from Vermont and Quebec, as adopted by the States of Vermont and New York and the Lake Champlain Management Conference in the 1996 Lake Champlain Basin Plan. The benchmark year for phosphorus levels in Lake Champlain is 1995. Vermont and Quebec have created the Missisquoi Bay phosphorus task force to help achieve this target.

5. By June 30, 2005, maintain all wetland uses and values for those wetlands under the jurisdiction of Department permitting efforts. (Strategies 2, 3 and 8)

6. By June 30, 2005, increase the number of priority dams known to be adequately maintained from 31 of 149 dams in 1998 to 100 of the 149 dams. (Strategy 4)

Priority dams are those with a high or significant hazard rating, and are under the jurisdiction of the Department.

7. By June 30, 2005, at least 10 miles of flood-damaged or otherwise morphologically-impaired rivers will have been restored to a stable stream morphology. (Strategy 5)

Strategies and Milestones

Strategy 1:

Reduce the phosphorous levels in Lake Champlain and Lake Memphremagog through continued upgrades at wastewater treatment plants; the application of phosphorus controls on developed, agricultural and silvicultural lands; and by adoption of town policies and bylaws to reduce phosphorus discharges and run-off.

Strategy 2:

As a key component of the Watershed Improvement Project, develop watershed plans for the major and minor drainage basins (river basins) of the state. The plans will be developed with extensive public education and public participation, and will outline strategic actions to monitor, restore, maintain and enhance the quality of waters within each basin. Develop TMDL studies which specify the actions needed to restore the quality of waters identified on the 303d "A" list of impaired waters.

Milestone 2a:

By June 30, 2005, Vermont's 17 basins will have revised and approved river basin plans.

Milestone 2b:

By June 30, 2005, studies will have been completed to determine the needed actions to restore the quality of 50 impaired waters.

Strategy 3:

Provide educational and technical assistance to enable communities, local organizations, and individuals to understand and minimize their impact on the watershed environment, and to effectively participate in the Watershed Improvement Project.

Milestone 3a:

By June 30, 2005, 25 percent of Vermont towns and cities will have increased their watershed protection and restoration efforts and policies through local plans and/or actions.

Milestone 3b:

By June 30, 2005, 500 additional Vermont educators will have been trained in Project WET (Water Education for Teachers) and will have received Vermont-oriented materials to help others in their schools and communities understand watershed protection.

Milestone 3c:

By June 30, 2005, 140 local watershed associations and lake protection groups will be supported by Department technical assistance.

Strategy 4:

Develop and implement a grant and/or low-interest loan program to fund removal, reconstruction, and repair of private and municipally owned dams. Seek necessary statutory authority. Enhance the dam inspection program.

Milestone 4a:

By June 30, 2005 complete

inspections of all 450 dams as required by statute.

Strategy 5:

Develop and implement a morphologically based stream restoration approach to river management, including public education, to better manage competing needs between human investments, and river dynamics and environmental protection.

Strategy 6:

Work through the federal hydroelectric dam licensing process and through Vermont statutory authority over unlicensed hydroelectric dams to restore river reaches and lakes that are altered by artificial flow and water level management.

Milestone: By June 30, 2005, 40 water body segments are removed from the 303(d) "F" list.

Strategy 7:

Secure additional staffing for the program in order to meet Vermonters' expectations for basin planning.

Strategy 8:

Maintain base surface water program, including compliance, permitting, planning, monitoring, inspections, outreach, and education.

DRINKING WATER



Goal

Assure safe, affordable drinking water from public water systems for Vermonters and our guests by helping those systems meet this goal and by managing the state's drinking water resources.

General Review

Vermont's program of public water systems oversight has been operating for more than ten years, since Congress passed the Safe Drinking Water Act (SDWA) and set national standards for their operation and control. Since then, the number of regulated water systems has grown from fewer than 600 to more than 1,400, and significant improvements have been made in the treatment of surface water sources and the protection of ground water sources.

Federal regulations promulgated as a result of the 1986 and 1996 reauthorizations of the SDWA have placed significant burdens on management and regulation of smaller public water systems in Vermont, and these small systems

present the greatest challenges to drinking water quality. A water system is considered a public water system, not because of "public" ownership, but because of the number of customers served per day (at least 25) and the duration of that service (at least 60 days per year.)

Public water systems are managed as one of three types. The first type is *Community*, which are water systems that serve residential communities including cities, villages, and larger developments. They serve 75 percent of the people in Vermont, but comprise only 31 percent of the total number of public water systems. The second type serves work establishments such as schools and factories, and comprises 14 percent of the water systems. The smallest water systems, serving transient populations as found in restaurants and motels with their

own water sources, comprise the remaining 55 percent of the systems.

Because people consume most of their drinking water at their place of residence, community systems are the main focus of federal and state programs. The populations served by most of these systems is very small. Of 462 community systems, about 75 percent of them serve fewer than 500 persons each. In fact, the total number of people served by all these smaller systems about matches the population served by Vermont's largest water system, Champlain Water District. Using federal definitions, 94 percent of Vermont's Community systems are considered small.

Challenges to the safety of our public water systems are met by a partnership of efforts between the operator, the owners of these systems, non-regulatory technical and financial assistance organizations, and the state and federal efforts. Department efforts include inspecting systems; providing technical assistance; licensing operators; permitting new construction and operation of water systems; supplying grants, loans and oversight for new construction; and, when necessary, enforcement of rules and regulations.

Trends and Concerns:

Significant improvements have been made to Vermont's public water systems during the past 25 years; however, much remains to be done. Major trends and concerns in drinking water protection are largely based on federal initiatives. The 1986 SDWA Amendments and federal regulations of the early '90s drastically increased the costs of operating a public water system and the efforts required to provide regulatory oversight and technical assistance. The per-household impact of increased costs is inversely proportional to the size of the system. Vermont's very small water systems (those with fewer than 500 individuals served) were particularly hard hit, with per-household costs for drinking water increasing six to ten-fold. The 1996 SDWA Amendments imposed

additional requirements on public water systems and on state regulatory programs, and for the most part focused on prevention of contamination, assessment of sources, source water protection, and creation of an informed customer base. The burden of the 1996 amendments falls as much on the state regulatory programs as it does on the water systems themselves.

The most significant concern for the foreseeable future is whether the state drinking water program and staffing are adequate to implement the requirements imposed by Congress in 1986 and 1996. A major concern is whether the program can meet EPA expectations for adequate oversight.

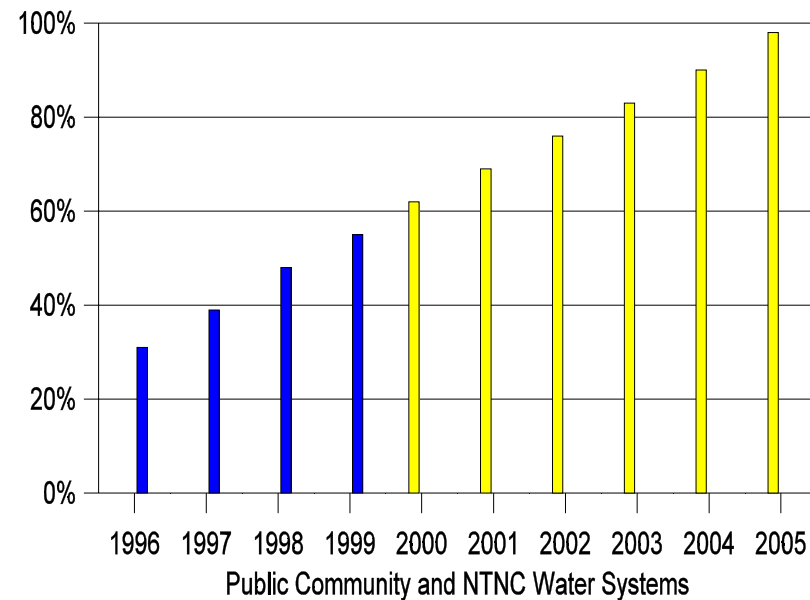
Another concern which has become evident in recent years, is that we are unable to meet Vermonters' expectations for *level of service*. This concern becomes critical during contaminant and water outage incidents. Many Vermonters expect the state to assist them during periods of crisis, and the program is presently neither structured nor staffed to provide such an expected level of assistance.

A positive trend over the past two or three years is the increasing awareness developed by small water systems for the major aspects of providing safe drinking water. These can be grouped into technical, managerial, and financial capabilities. A water supplier with

these capabilities is able to maintain and operate the water system in a manner that delivers safe drinking water at the lowest possible price to the customers. On average, Vermont's water suppliers are much more knowledgeable about water system operations than they were six years ago. Efforts by a number of governmental and non-governmental agencies are producing results, but progress is slow. A significant portion of our future efforts will have to be focused on the large number of small water systems that exist throughout the state.

An under-reported success story is the number of state-funded capital improvement projects that municipally owned public water systems have completed since the inception of the state grant program in 1966. In 24 years, 172 municipal capital water system improvement projects have been built representing more than \$78 million in state funds allocated for this purpose. These projects have included new water wells, storage reservoirs, pump stations, pipelines, and water treatment facilities. Along the way, over 30 new or improved water filtration plants were constructed. We can now say that all municipal systems served by surface water will be properly filtered by the time this plan is released.

Percent of Public Water Systems With Approved Source Protection Plans.



old approach.

In the past two years, the program has made substantial gains in automating large amounts of information. This work will need to continue for the Department to meet the expectations of this and other programs.

The 1996 SDWA amendments signaled a turn by Congress toward a more traditional state drinking water program, one with an added emphasis on prevention of problems. This change in focus will mesh well with Vermont's decades-

Drinking Water Outcomes

1. By June 30, 2005, increase the population served by public water systems (community and non-transient, non-community types) in compliance with all health-based standards from 84 percent in 1997 to 90 percent.
(Strategies 1, 2, and 3)

2. By June 30, 2005, increase the public water systems (community and non-transient, non-community types) with a source protection plan in place from 55 percent in 1999 to 98 percent.
(Strategies 1, 2, and 3)

Strategies and Milestones

Strategy 1:

Develop and implement a state program to evaluate and assist water systems to assure they have the “capacity,” in terms of financial, managerial, and technical capability, to run their systems in compliance with all state and federal rules.

Milestone 1a:

By June 30, 2002, develop needed authorities and programs to assure water system capacity.

Milestone 1b:

By June 30, 2005, have 60 percent of the water supply systems in the state demonstrate adequate capacity.

Strategy 2:

Secure additional staffing for the program in order to meet Vermonters’ and EPA’s expectations for appropriate oversight and assistance.

Milestone 2a:

By June 30, 2001, have sufficient staffing on board to oversee all aspects of the program.

Strategy 3:

Maintain base drinking water program, including compliance, permitting, planning, monitoring, inspections, outreach and education.

GROUNDWATER AND EARTH RESOURCES

Goal

Maintain a level of groundwater quality that is suitable for use as drinking water, protects users rights, and complies with federal requirements; and properly manage and conserve Vermont's earth resources.

General Review

The quality and quantity of Vermont's groundwater is not often considered, except when we have a problem. Groundwater problems are most often associated with drinking water supplies and range from localized groundwater contamination to well interference problems which reduce well yields.

Groundwater drawn from properly constructed wells or springs is generally plentiful and considered drinkable in nearly all parts of the state. Geologic and human-made constraints can be a problem when communities search for higher yielding wells. Vermont has areas of naturally occurring contaminants which could affect human health, such as natural gas, radioactive materials, and arsenic; and nuisance-causing natural contaminants such as hardness, iron, and manganese. Human-made contaminants include fuel from leaking underground storage tanks and waste from older industrial disposal practices. Household toxic materials disposed directly onto the ground or into home septic systems, and pesticides and fertilizers when used in excess are also problems for private wells.

The amount of available groundwater varies considerably, but usually enough can be found for residential use. Reductions in available groundwater may be caused by new wells taking water from the same groundwater system as existing

wells, thereby causing a lowering of the yield, or interference with the existing wells.

Vermont has a long history of extraction of earth resources which include minerals, granite and marble dimension stone, crushed rock, sand, and gravel. Knowledge of Vermont's earth resources is used to further our understanding of geologic history, support biodiversity land use plans on state lands, and identify areas prone to hazards such as floods, landslides, erosion, areas of earthquakes and naturally occurring contaminants. Wherever these geologic hazards exist there are likely to be significant threats to life and property.

The Department's actions to protect people from problems related to groundwater include many of the funding, education, and regulatory efforts in the waste programs as well as the groundwater and natural resources program. Waste management related efforts include remediation of hazardous waste sites, hazardous spill clean up, licensing of well drillers, and regulation of activities which could compromise groundwater, such as landfills and septic systems. Assistance is also provided to other state agencies and Act 250 on groundwater protection.

The Department's actions to protect people related to hazards also include funding, education, and regulatory efforts in the surface water as well as the groundwater and

natural resources program. These efforts include technical assistance on reclaiming mined land, mapping to identify areas of greatest hazard and efforts to educate the public about these threats.



Trends and Concerns:

A major concern with groundwater resources is the public's assumption that groundwater is pure and safe and that it will stay that way. This attitude is due primarily to the fact that Vermont's groundwater is generally safe and plentiful, and the public is not well aware of how easily groundwater may be contaminated by our activities.

The recent revision to Vermont's Groundwater Rule and Strategy focused attention on groundwater and the various land uses affecting groundwater quality. In working on the rule amendment, the statutory policy that groundwater should be protected to meet drinking water standards has facilitated efforts to bolster protection of this resource.

Management of on-site septic is important to maintaining Vermont's groundwater quality. Efforts are underway to improve state and local controls over the placement of on-site septic systems to better protect groundwater quality. This includes the use of newer technologies that may improve the treatment of sewage on many of Vermont soils.

Trends in the production of crushed stone, dimension stone, sand, and gravel all show a steady increase of the period 1996 to 1998. The rates of increase range from about 10 percent for dimension stone to about 80 percent for crushed stone production.

State geologist offices nationwide are providing an ever-increasing amount of geologic hazard information and analysis to government and non-governmental agencies. The Vermont State Geologist develops and maintains data used in the evaluation of floods, landslides, erosion, and naturally occurring contaminants. Information about these hazards are being developed on computer-based maps for easier distribution to the public. The Vermont State Geologist is providing limited earthquake hazard analysis and has determined significant hazards do exist at least in Northwestern Vermont. Information supplied by the State Geologist office is fundamental to the development of plans for land use on state properties. These plans consider bedrock and surficial materials composition and topography when evaluating natural communities and biodiversity concerns.

Groundwater and Earth Resources Outcomes

- 1. By June 30, 2005 increase the percent of public community water system source protection areas free of volatile organic chemicals to 99.50% from 99.26% in 1999.
(Strategies 1, 3 and 4)**
- 2. By June 30, 2005 increase the number of state and town plans incorporating geologic hazards and material by 10% over the 2002 base level.
(Strategy 2)**

Strategies and Milestones

Strategy 1:

Produce maps of all known sources and locations of groundwater contamination and provide access to these maps via town clerks, regional planning commissions, well drillers, and the Internet.

Milestone 1a:

By June 30, 2003, develop the mapping system.

Milestone 1b:

By June 30, 2005, complete the mapping of all known sources.

Strategy 2:

Produce computer generated maps showing areas of greatest geologic hazards and provide public notification of steps needed to reduce risks.

Milestone 2a:

By June 30, 2005, complete mapping of 25 percent of the geologic hazards in Vermont and provide public notification of steps needed to reduce risks.

Strategy 3:

Complete the investigation and remediation of contaminated sites.

Milestone 3a:

By June 30, 2003, initiate schedules for investigation and remediation of all known contaminated waste sites

Milestone 3b:

By June 30, 2005, reduce the number of sites needing remediation from 180 in 1998 to 140.

Strategy 4:

Maintain base groundwater, geology and natural resources program, including compliance, permitting, planning, monitoring, mapping, outreach, and education.



WASTE

Goal

To reduce hazardous and solid waste generation through pollution prevention, source reduction, reuse and recycling, to ensure safe management of solid and hazardous wastes that are generated, and to mitigate the health and environmental impacts of improper waste disposal actions and accidental releases.

General Review

Waste management in Vermont has changed a great deal in the past 30 years. In the late 1960s, all types of wastes were taken to the local dumps where some were burned and others were buried or allowed to seep into the soil and groundwater. These practices resulted in air pollution, which was reduced with the ban on open burning, and ground and surface water pollution, which we are still working to remediate today.

All wastes today are managed under Vermont and federal laws. In the past 30 years, the number of landfills has been reduced from more than 100 to 6. All new landfills are required to have liners designed to contain and collect leachate to prevent groundwater pollution. Hazardous wastes are not allowed to be disposed of in landfills and an estimated 35 percent of Vermont's municipal solid waste is diverted from landfill disposal through source reduction, reuse, and recycling.

The Department's efforts to protect people and the environment from the effects of waste include the following:

1) Waste prevention information, assistance and recognition.

2) Solid and hazardous waste facilities management oversight.

3) Emergency spill response and management of contaminated sites.

Waste Prevention

Waste prevention efforts include reuse, recycling and composting. Waste prevention assistance is provided by direct technical assistance, hotline assistance, and outreach to Vermonters. Staff members encourage development of high-quality pollution prevention plans required from about 200 businesses. They write manuals and host workshops addressing specific industry sectors or general waste prevention opportunities. Other activities include grants and recognition programs such as the Vermont Business Environmental Partnership and the Governors Award for Environmental Excellence in Pollution Prevention. The staff trains employees of other state agencies to reduce waste. The Department funds a statewide reuse program, the Vermont Business Material Exchange to help businesses find new uses for their reusable waste. The Department also works with both public and private sectors to establish markets for reusable, recyclable and organic materials.

Waste Facility Management

Regulation of waste generating, handling, and disposal facilities has established controls which protect public health and the environment. Staff review facilities through record checking and inspections for compliance with permits and rules. More than 300 businesses are subject to detailed regulations governing the handling of hazardous waste to assure that waste is carefully tracked, stored, transported, and disposed of to prevent harm to humans and the environment. Vermont has more than 4,000 facilities subject to less detailed hazardous waste regulation.

The Department has permitted 2,777 underground storage tanks which are in service. The underground storage tank program has recently overseen the upgrade of underground storage tanks to meet new standards that reduce the potential for releases to the environment. Having successfully completed that 12 year effort, focus is now shifting to correction of substandard installations, compliance and leak detection. In addition new efforts will be placed on above-ground tank management and underground home heating oil tank management.

The Department licenses 183 waste haulers and 77 certified solid waste transfer stations. There are five solid waste landfills (two lined and three unlined), one construction and

demolition landfill, and more than 200 recycling, reuse, and composting collection sites throughout the state.

Emergency Spill Response and Contaminated Sites

An emergency spill response team provides 24-hour-per-day response to spills that could damage the environment or endanger public health. The Department team members assist the local and regional authorities in taking actions to minimize the environmental and health risk in cleaning up an accidental release.

There are more than 1,250 active hazardous waste sites in the state, such as old dumps or leaking underground gasoline storage tanks. The Department manages these sites and often uses the Environmental Contingency Fund for the financing of site assessments and emergency actions to contain or remove hazardous waste and remediate the soil and groundwater.

Trends and Concerns

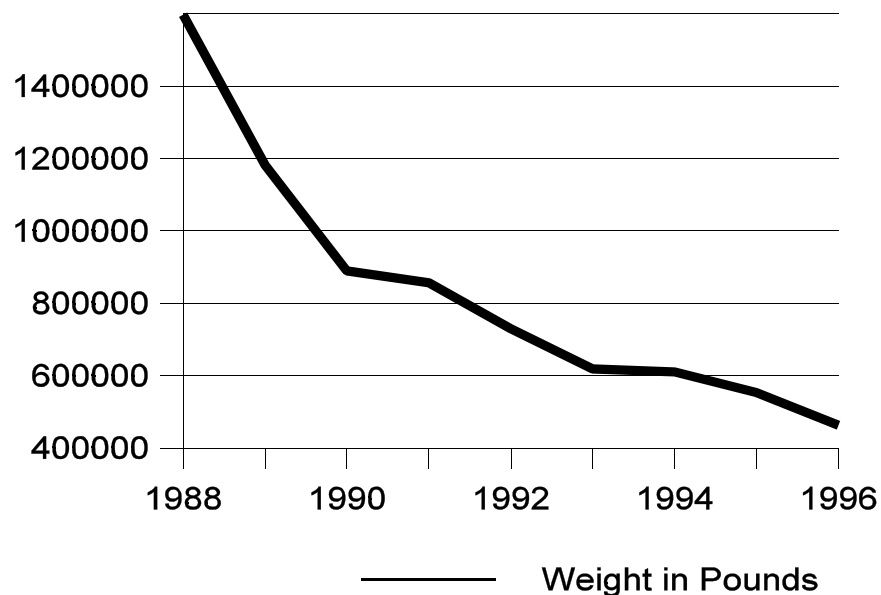
In solid waste management the changing role of the private and public sectors is of concern now that the private sector is providing more services while there are fewer controls by the public sector. Some of this change is due to Supreme Court decisions removing the control of waste from the public sector. There is also concern about

the consolidation of the private solid waste management industry in Vermont and the potential effects that it may have on prices and services for residents due to less competition.

There is a need for the continued development of markets for reusable and recyclable materials in order to conserve resources and extend the life of Vermont's landfills. In 1996, the Department completed an intensive analysis on the volume of solid waste diverted from landfills through source reduction, reuse, and recycling. The analysis indicated that Vermonters were diverting 35 percent of the total waste stream – 5 percent through measurable reduction and reuse and 30 percent through recycling and composting. This is significant progress toward the goal stated in the State Solid Waste Plan of 40 percent diversion by the year 2000.

Revisions to the State Solid Waste Plan increase this diversion goal to 50 percent by the year 2005. In order to achieve this goal, there must be significant additional progress in source reduction, reuse, and recycling of several types of wastes including organic and construction/demolition wastes, as well as increased recycling of all materials by residential, commercial and agricultural sectors. Source reduction is difficult to measure compared to recycling, and is sometimes a more difficult area in which to effect changes, but it is the

Toxic Releases by Major Vermont Manufacturers



first priority in the waste management hierarchy.

In 1993, 221 of Vermont's largest hazardous waste generating businesses developed initial pollution prevention plans with a focus on reducing or preventing hazardous waste generation at the source. The Pollution Prevention Section of the Environmental Assistance Division began outreach activities to educate Vermont businesses on reducing hazardous wastes. To date, hazardous waste generation statewide has declined by more than 35 percent from the 1992 baseline. Starting in 1996, businesses that are larger users of toxic materials were required to

implement planning to reduce the amount of toxic materials used. The Department anticipates that it will receive reports of further significant reductions in the use of toxics in the next five years as a result of this planning requirement.

The ability to provide adequate funds for investigation, remediation and continued operation and maintenance of remediation systems on orphaned contaminated sites is a serious concern. For some sites, a major portion of the investigation and remediation costs are provided through EPA, but adequate sources of funds are needed for ongoing operation of correction systems.

Sprawl across Vermont's landscape is reduced by the redevelopment of downtown contaminated properties. The Redevelopment of Contaminated Properties program is currently inadequately staffed and under-marketed to fulfill its potential for encouraging and permitting reuse of previously contaminated sites.

Waste Outcomes

1. By June 30, 2002, achieve a 15 percent reduction in toxic substance use by all Vermont large users from the 1995 baseline (6,502,881 pounds).
(Strategies 1, 3 and 5)

 - 2 By June 30, 2002, achieve a 45 percent reduction in hazardous waste generation from the 1992 baseline.
(Strategies 1, 3 and 5)
- This reduction is to be made by all Vermont generators. The 1992 baseline is 27,300,000 pounds.
3. By June 30, 2005, reduce the annual number of private wells which become contaminated with volatile organic chemicals from 7 per year in 1997 to 4 per year.
(Strategies 2, 4 and 5)

 4. By June 30, 2005, achieve a 50 percent diversion of solid waste from disposal through sourcereduction, reuse, and recycling.
(Strategies 3 and 5)

Strategies and Milestones

Strategy 1:

Integrate pollution prevention strategies and approaches into the Departments's regulatory programs through development and implementation of training programs.

Milestone 1a:

By June 30, 2001, conduct pollution prevention training of all Department personnel in enforcement, inspection, and permitting programs.

Milestone 1b:

By June 30, 2003, implement pollution prevention integration procedures for all regulatory and assistance programs.

Milestone 1c:

By June 30, 2003, revise the hazardous waste program to make the rules more efficient and reduce permitting time frames.

Strategy 2:

Provide technical assistance and grants for cleanup, removal and replacement of underground home heating oil storage tanks through the Petroleum Cleanup Fund.

Milestone 2a:

By June 30, 2001, issue 100 \$500 grants per year for the removal and replacement of home heating oil underground storage tanks.

Strategy 3:

Provide education and assistance to the public and private businesses on additional opportunities for source reduction, reuse, and recycling.

Milestone 3a:

By June 30, 2003, each solid waste district and non member town will have an approved revised solid waste plan with actions to meet the 50 percent diversion goal.

Milestone 3b:

By June 30, 2001, convene a source reduction technical advisory committee and develop initiatives with the greatest feasibility to reduce waste generation.

Milestone 3c:

By June 30, 2003, provide annual incentive grants to municipalities, solid waste districts, non-profit organizations, and the private sector for those projects with the greatest potential to promote source reduction.

Milestone 3d:

By June 30, 2002, through the Clean State Council, achieve 50 percent diversion of State government's solid waste stream. Implement source conservation, source reduction, and recycling programs along with annual reporting to achieve and measure this reduction.

Milestone 3e:

By June 30, 2002, complete a study of options to reduce product packaging wastes at the source.

Milestone 3f:

By June 30, 2002, propose legislative initiatives that serve as incentives for source reduction.

Strategy 4:

Complete the investigation and remediation of contaminated sites and potentially contaminated sites.

Milestone 4a:

By June 30, 2003, establish schedules for investigation and remediation of all known contaminated waste sites

Milestone 4b:

By June 30, 2005, reduce the total number of sites requiring active remediation from 180 in 1998 to 140.

Milestone 4c:

By June 30, 2001, 95 percent of all new spills of hazardous materials will be cleaned up within six months of their occurrence.

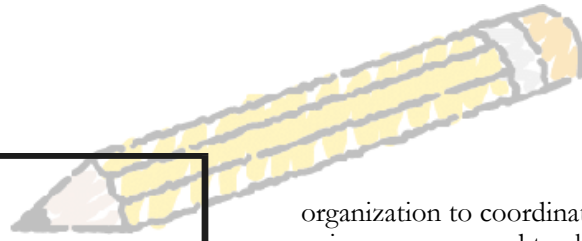
Milestone 4d:

By June 30, 2001, all under ground storage tanks are properly closed or are in compliance with construction standards.

Strategy 5:

Maintain base waste prevention and control programs, including compliance, permitting, planning, monitoring, and outreach and education.

MANAGEMENT



Goal

A Department management system that assures: effective and efficient use of available resources; administration of federal programs at the state level; an informed public that appreciates the state's natural resources; monitoring of environmental quality; considerate and timely service to the people we serve; and a safe, comfortable and healthy work environment.

General Review

The Department of Environmental Conservation manages a staff of 277 positions and an annual budget of about \$25 million. Funding sources include federal grants to run national environmental and public health protection programs; permit, license and registration fees; general funds and inter Departmental transfers. Federal programs managed by the Department address air quality, drinking water quality, surface and groundwater protection, pollution prevention efforts, hazardous materials, waste management and contaminated site clean up.

The Department uses a comprehensive management system which joins longer-term strategic planning efforts with the annual budget process and includes tracking of the work and effectiveness of our programs. This system enables management to more efficiently understand and manage workloads and funding and staff resources to maximize our effectiveness.

Encouraging open communication and providing regular feedback to all employees is important. Staff has regular access to all levels of the

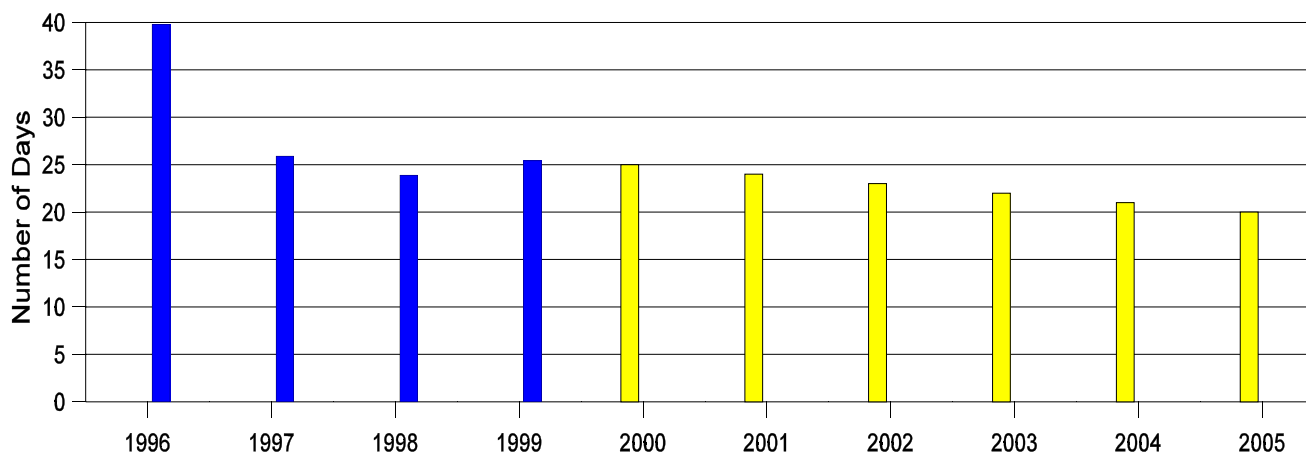
organization to coordinate work, voice concerns, and track progress to address these concerns. Management has emphasized several practices to recognize exceptional effort and to correct unsatisfactory performance. Merit pay awards are used to reward excellent work. Performance evaluations are performed annually and are now current across the Department. Employee of the Year, Public Service, and other recognitions are regularly given.

Overall, the Department uses the strategies of education, financing, and regulation to implement its programs. Educational efforts include providing information to thousands of Vermonters each year. Education is provided by field visits, written materials, televised or web-based information services, and training for Vermont teachers through programs such as project WET. Financial strategies include grants and loans used for building treatment systems, and funding of local protection efforts and promoting research on selected topics. Regulatory efforts include technical assistance and education efforts to inform those covered by Department rules about requirements, issuing permits for regulated work, writing rules and

regulations consistent with statutes, tracking compliance, providing compliance assistance, and, where appropriate, enforcement of the laws and requirements. Ongoing polling of people receiving permits shows that the Department continues to provide a consistently high level of customer service.

Monitoring of environmental quality is conducted in each of the programs and is coordinated with efforts throughout Vermont and in some cases the northeast region. The Department is currently developing a refined monitoring strategy to ensure that limited monitoring resources are effectively used, are targeted to the most important monitoring needs to evaluate the success of our programs, and are integrated with other statewide monitoring efforts.

Average Number of Days to Process an Application



Trends and Concern

Five years ago, the state reduced overall department staff by nearly 10 percent. Throughout this same period, workloads have increased due to new state and federal requirements. The Department received additional staffing for new federal programs in this past year. The Department has sought efficiencies and has improved management and the outputs of staff. Nevertheless, in many cases the work required of staff is well beyond acceptable and sustainable full-time norms.

New federal requirements yet to be fully staffed include monitoring new constituents in air and completing new assessments and improvement plans for surface water, as well as new requirements to assess and plan for

improved public water system management and source water protection. While the strategies to address these are listed in other programs, Department resource allocation is a concern of the management program. During the past 10 years, the Department has seen a continuing increase in federal requirements which outpace any increases in federal funds. In recent years, federal base funding has been flat, and general funds, fee receipts, and approved positions have not been adequate to cover the Department's increasing costs and work expectations. Each year the Department's need for new resources increases in the range of \$500,000 to \$600,000 due solely to

annual inflation of operating cost.

With more and more Vermonters concerned about their environment and seeking DEC information (ranging from permit decisions to the status of the natural resources in their neighborhoods), the Department is experiencing an ever-increasing demand for timely, automated access to information. Recent Supreme Court decisions (Hunter Broadcasting and Bianchi) have made permit violations or a lack of a permit a defect in title which has also resulted in a large demand to provide the additional services of access to historical decisions. The Department has completed a pilot project to

electronically reproduce or digitally image permits in one of our regional offices. This pilot will culminate in the development of additional digital and electronic copies of permits and other decisions to allow for easier public access to complete records. Today, all staff work with a networked computer system as a tool to improve the efficiency, coordination and effectiveness.

As mentioned above, the Department is working with the Agency of Natural Resources to develop and implement an Agency monitoring plan to increase the efficiency and effectiveness of the Department monitoring efforts. This includes collecting baseline information about

each monitoring effort both from within state government and from non-government agencies. A goal of the monitoring strategy is to have geographically located monitoring data available to all staff and to the public via the internet.

Increasingly, creative ways to achieve desired improvements in environmental and public health protection need to be incorporated into DEC programs. In the 1970s, '80s, and early '90s, environmental regulation of major discharges of pollutants was an effective way to achieve major reductions in pollution. Now, attention needs to be redirected and new methods used to address the many minor but cumulative sources of environmental degradation and contamination ranging from land use patterns to many small business activities. There is a trend in government to move away from historical emphasis on regulatory strategies, to strategies which reward and provide incentives to encourage businesses and people to meet or surpass minimum environmental compliance standards.

Helping businesses succeed is becoming a more important strategy. The Department is committed to training businesses in developing environmental management systems which incorporate environmental standards to which business are willing to commit. These systems provide for self-evaluation and public

recognition by the Department.

The Department has advanced this business assistance strategy in a non-threatening way through the Department's Pollution Prevention and Small Business Compliance Assistance efforts. These efforts would also be effective for Vermont's many small municipalities. The Department has also learned that providing specific compliance and pollution prevention manuals for certain groups of customers is very useful in changing behavior toward sound environmental management.

Enforcement is necessary in some instances and is used whenever appropriate. In cases where fines result, these funds are increasingly directed toward local environmental improvement projects or supplemental environmental projects (SEPs). The use of tickets for selected violations started in 1999. The Department may increase their use in selected program areas where this approach advances compliance and offsets some more lengthy enforcement processes.

Historically, the Department has provided high levels of customer service to permit applicants as well as the general public. The regional offices issue more than 3,000 permit decisions annually. To maintain and improve these trends with increasing demands, the Department will need better ways to provide these

services. In the next five years we will be using the Internet and integrated systems to more effectively interact with our customers. We will continue to evaluate our programs and activities to increase our effectiveness at achieving our mission, and to improve the service we provide the people of Vermont.

Management Outcomes

1. By June 30, 2005, establish an easy-to-use system for providing the public with information about all products developed by DEC. Products include information about regulations, grants and funding, education and assistance, and recognition programs. (Strategies 1, 3, 4 and 8)

2. By June 30, 2005, implement an automated system option to enable receipt and processing of permit and license applications and receipt of compliance information. (Strategies 1, 3 and 8)

3. By June 30, 2005, implement a comprehensive geographic information system (GIS) which allows the public to easily access routinely requested site or facility public information via the Internet. (Strategies 1, 3, 4 and 8)

4. By June 30, 2005, decrease by 10 percent the response time to citizen complaints from the 2002 baseline. (Strategies 1, 3, 7 and 8)

5. Through and beyond 2005, continue to implement a financial tracking system on 100 percent of DEC projects. (Strategies 3 and 8)

6. By June 30, 2005, decrease by 10 percent the 2002 base level of significant non-compliance with the environmental requirements administered by the Department. (Strategies 5, 7 and 8)

7. By June 30, 2005, decrease the average number of days to process permits and professional certification from 25.4 days in 1999 to 20 days. (Strategies 2, 7 and 8)

8. By June 30, 2005, increase by 15 percent the 2002 base level of citizen satisfaction with DEC. (Strategies 6, 7 and 8)

9. By June 30, 2005, improve Vermonters' knowledge of environmental issues by 15 percent above the 2000 baseline based on statewide polling. (Strategies 6, 7 and 8)

Strategies and Milestones:

Strategy 1:

Update and revise the Department's current information processing systems which will result in a revised listing – in order of priority, based on costs and benefits – of those systems to be next automated.

Milestone 1a:

By June 30, 2002, develop and implement a document management system which includes a geographically based facility-permit identification system which will allow all staff access to pertinent information.

Milestone 1b:

By June 30, 2002, develop and implement practices to put all information and educational materials on the Department websites for public access.

Milestone 1c:

By June 30, 2003, develop electronic applications for the processing systems which will generate permits and provide public access to available permit documents and decisions. Maintain non-electronic applications.

Strategy 2:

Create general permits and/or change the level of review of

certain low-risk permitted activities so that more attention can be concentrated on the remaining responsibilities of the Department.

Milestone 2a:

By June 30, 2001, create general permits for applicable projects such as Department stormwater permits, indirect discharge permits of less than 15,000 gallons per day and for existing industrial sites.

Milestone 2b:

By June 30, 2001, identify all permits where less resource-intensive management could be implemented and establish workplan for implementation.

Milestone 3c:

By June 30, 2001, update and implement a revised Application Review Procedure to improve review and processing of permits.

Strategy 3:

In order of priority, request additional resources to meet some of the Department's additional workloads through new full-time classified positions, limited service positions, sponsored positions,

temporary positions, or contractual assistance.

Strategy 4:

Implement the Agency Monitoring Strategy and Plan.

Milestone 4a:

By June 30, 2001, complete registration and assessment of data bases from all groups monitoring environmental and public health information about Vermont.

Milestone 4b:

By June 30, 2001, complete the annual update of the Agency Monitoring Strategy and Plan for use in budget process.

Milestone 4c:

By June 30, 2005, implement a web-based access to geographically located monitoring information from ANR.

Strategy 5:

Improve the current system to measure and improve the overall compliance with environmental requirements administered by the Department.

Milestone 5a:

By June 30, 2001, improve the system and practice which measures

and reports on significant non-compliance with environmental requirements administered by the Department. This will include program-by-program and aggregated summaries of non-compliance data. Implement division compliance policies as appropriate.

Milestone 5b:

By June 30, 2001, implement a system to measure and focus efforts to improve compliance (technical assistance, compliance assistance, enforcement efforts, etc.) in program areas with highest rates of significant non compliance.

Milestone 5c:

By June 30, 2002, complete an evaluation of alternate means of providing initial enforcement actions, where appropriate, possibly through the use of an enforcement ticket approach for initial, lower level violations and propose any necessary legislation.

Milestone 5d:

By June 30, 2003, assist 50 businesses with the implementation of an environmental management system.

Strategy 6:

Improve information, education, and marketing efforts with a focus on improving communication of environmental issues to the general public and regulated community.

Milestone 6a:

By June 30, 2001, enhance existing efforts to educate youth in environmental/natural resources.

Milestone 6b:

By June 30, 2001, hire a Department public involvement specialist to implement information and education efforts.

Strategy 7:

Select specific areas to target for improving customer service and implement needed changes.

Milestone 7a:

By June 30, 2001, identify and complete baseline cross training of permitting staff in associated permit programs.

Milestone 7b:

By June 30, 2001, complete ongoing efforts to resolve internal permit-related conflicts and incompatibilities.

Milestone 7c:

By June 30, 2002, update coordination and communication requirements for the Department staff which issues permits.

Milestone 7d:

By June 30, 2001, complete the permit specialists pilot project to assist applicants with project management. Implement enhanced role for permit specialist as appropriate.

Milestone 7e:

By June 30, 2002, develop an integrated automated system to track citizen complaints about environmental degradation and public health and establish a base level of response time.

Milestone 7f:

By June 30, 2002, establish a method of assessing citizen satisfaction with our work and determine a base level.

Strategy 8:

Maintain base management program, including compliance, permitting, planning, monitoring and outreach and education.

