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Protecting and Restoring our Environment
Annual Report 2004

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Commissioner

Contents

Cover Photo: *Pachaug State Forest in Voluntown. Pachaug State Forest is the largest State Forest in Connecticut encompassing 24,000 acres, in 5 towns.*

The mission of the Connecticut Department of Environmental Protection is to conserve, improve and protect the natural resources and environment of the State of Connecticut in such a manner as to encourage the social and economic development of Connecticut while preserving the natural environment and the life forms it supports in a delicate, interrelated and complex balance, to the end that the state may fulfill its responsibility as trustee of the environment for present and future generations.

That mission, first articulated by statute in 1971, remains unchanged today. However, the approaches employed by the Department to meet its mission and the measures used to judge its success have evolved and will continue as well over time to meet Connecticut's evolving environmental challenges. Flexibility to deploy staff and resources as efficiently as possible, to assess and revise Department priorities, and to evaluate success through an assessment of the state's environmental resources is critical to our current and future success.

Over the past several years, this report has evolved. Once a document to tabulate enforcement statistics, it has gradually become Connecticut's annual state of the environment report. It provides more than numbers. It showcases and highlights the quality of the state's natural resources through a series of snapshots that represent milestones and major achievements the agency has achieved over the past twelve months to advance the Department's strategic initiatives.

The Department is currently working with our constituents to define an environmental agenda for the coming years that makes sense for them as well as local, state, regional and federal agencies. It is understood that a strong enforcement program is and always will be a central component of the agency's agenda. The Department's compliance strategy will continue to build upon efforts underway to target various commercial or regulated sectors. This sector approach, as we have done in the past with dry cleaners and auto repair shops, will be expanded as we work with municipalities, business and industry to help them incorporate pollution prevention principles into their operations as a way to achieve higher, more sustainable and cost-effective compliance rates. As part of these compliance approaches we will strive to clearly articulate environmental performance standards while encouraging exploration of new and innovative approaches to achieve compliance.

In the months ahead, the Department will also be expanding its efforts to educate the public on ways they can contribute to a cleaner, healthier environment. The choices we all make every day can have a significant impact on our natural resources. Whether it is the type of car we drive, the appliances in our homes, or the items we recycle at the curb, we need to instill a greater sense of appreciation about the environmental impacts of our lifestyle and consumer choices.

These initiatives and endeavors are but a few areas of the interests the Department will be focusing on in the upcoming months as we work with our constituents to develop a comprehensive environmental agenda for the State of Connecticut. In the future, we will increasingly utilize this report to showcase the work the Department and its success in preserving, protecting and enhancing the quality of life for the residents of Connecticut.

Long Island Sound

Goal: To protect, restore, and enhance the environmental quality of Long Island Sound and its resources and to build capacity among all stakeholders to meet current and future challenges of resource and use management.

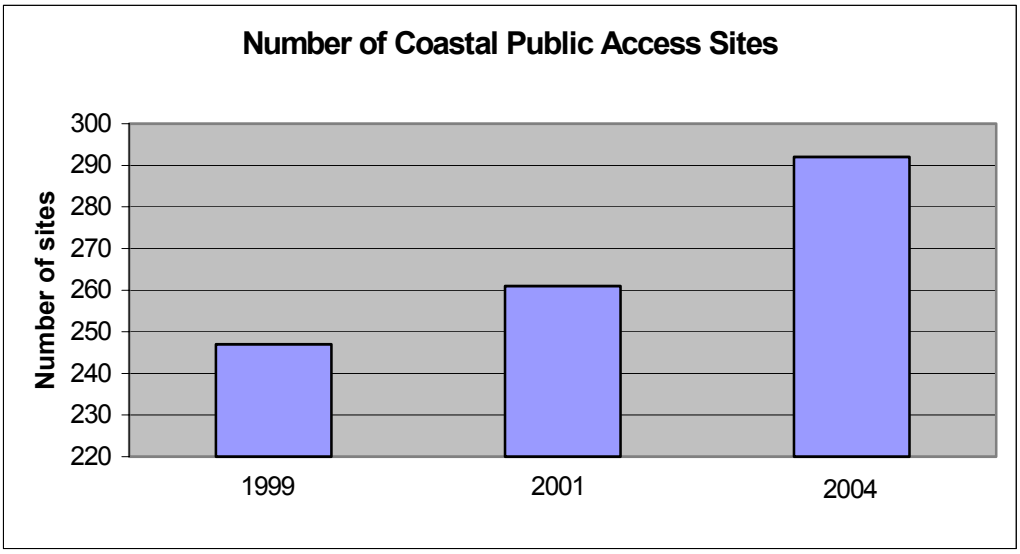
Long Island Sound is a 1,300 square mile estuary, a place where salt water and fresh water mix. Connecticut's only coastal water body, it is a shared resource with the state of New York. It would be difficult to overestimate the importance of Long Island Sound to Connecticut's environment, economy and quality of life. Home to more than 8 million people, its 16,000 square mile watershed drains most of Connecticut and portions of New York, Massachusetts, Vermont and New Hampshire, and even a small portion of Canada.

Long Island Sound Stewardship Initiative

The Long Island Sound Stewardship Initiative ("LISSI") is an ongoing effort, involving the Connecticut Department of Environmental Protection along with the New York State Department of Environmental Conservation, U.S. EPA, U.S. Fish and Wildlife Service, Regional Plan Association ("RPA"), Audubon New York, Save the Sound, and others, to identify, protect and enhance the Sound's most significant ecological and coastal recreation areas as recommended by the Long Island Sound Study Comprehensive Conservation and Management Plan. The LISSI has gained increased attention within the region in connection with a proposed federal bill initiated by the Congressional Long Island Sound Caucus for a Long Island Sound Stewardship Act. The proposed act would authorize the protection of open space, provide additional public access to the Sound, and authorize federal matching grants to purchase, protect and preserve selected sites. Public and private lands would be eligible for funding. The program would be both voluntary and protect existing private property rights. The Long Island Sound Stewardship Act is still pending in Congress.

Hammonasset State Park, Madison

In order to launch the LISSI, as envisioned by the proposed Long Island Sound Stewardship Act, a system of sites having significant ecological, scientific, open space or public access values areas will be designated to form an "inaugural" LIS Stewardship System. A comprehensive package of incentives and benefits would be made available to public and private landowners to help establish and expand the system of sites. Connecticut and New York are currently working on identifying potential sites that meet the criteria set forth by the LISSI. The LISSI will also strive to increase public awareness of the need to protect selected sites, promote partnerships to cooperatively manage these sites, secure funding to address significant site management needs, and develop a process to resolve conflict and balance preservation with the demands for use of these sites.

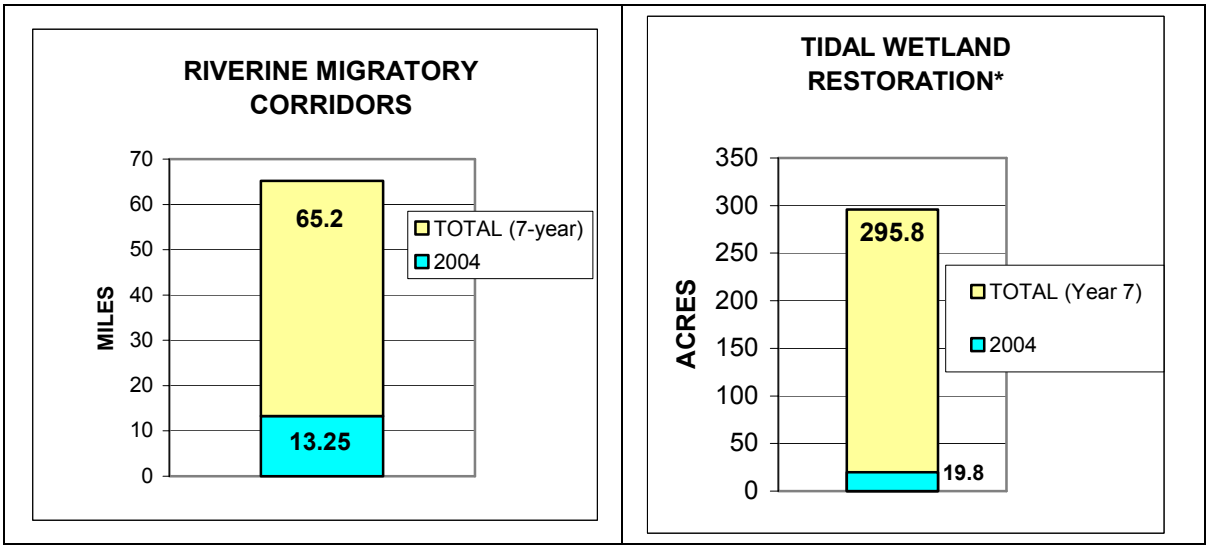


***Note:** 2004 data includes 15 municipal beaches now open to general public access pursuant to *Leydon v. Greenwich* case.

Habitat Restoration

The Department continues to make significant progress in restoring coastal habitats. Coastal habitat restoration projects address a range of habitats including dunes, tidal freshwater wetlands, coastal and island forests, coastal grasslands and submerged aquatic vegetation. To monitor progress in restoring coastal habitat, the Department has used as its primary measures: miles of riverine migratory corridors restored and acres of tidal wetlands restored. Riverine migratory corridors are of particular importance to the ecosystem in that they enable the passage of anadromous fish, such as blueback herring, shad and Atlantic salmon to critical spawning areas. Across the State, obstacles such as milldams, culverts and tide gates have blocked access to these spawning areas. Recent and ongoing efforts to install fish ladders, bypass structures and, where feasible, to remove in-stream obstacles, work to restore access to spawning areas for several fish species that are an essential component of the Long Island Sound habitat. In addition to restoring riverine migratory corridors, ongoing efforts to restore tidal wetlands are an important element in repairing and enhancing the Long Island Sound ecosystem.

The following charts show the progress made during calendar year 2004 in restoring riverine migratory corridors (miles of new river accessible to migratory fish) and tidal wetlands (acreage). The totals shown represent the projects completed since 1998, the first year of implementation for the Long Island Sound Study ("LISS") partners (Connecticut, New York and EPA) Habitat Restoration Initiative ("Initiative"). These charts show Connecticut's contribution to this initiative to date.



* Tidal wetland acreage does not include projects to control invasive wetland species, notably common reed (*Phragmites australis*).

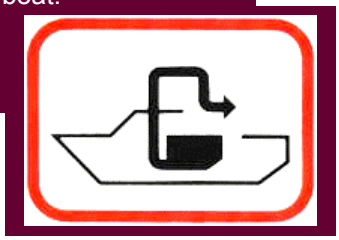
Emerging Measure of Marine Ecosystem Health

The presence of eelgrass in coastal areas is emerging as an important environmental indicator of improved water quality and the health of Long Island Sound. Eelgrass (*Zostera marina*) beds once existed throughout Long Island Sound and are considered to be one of the most productive subtidal habitats of shallow water. Eelgrass is a vital component of a healthy Long Island Sound, providing food and cover for numerous species ranging from mudsnails and bay scallops to blue crabs and striped bass. Eelgrass also provides vital food resources for breeding, staging, and wintering waterfowl.

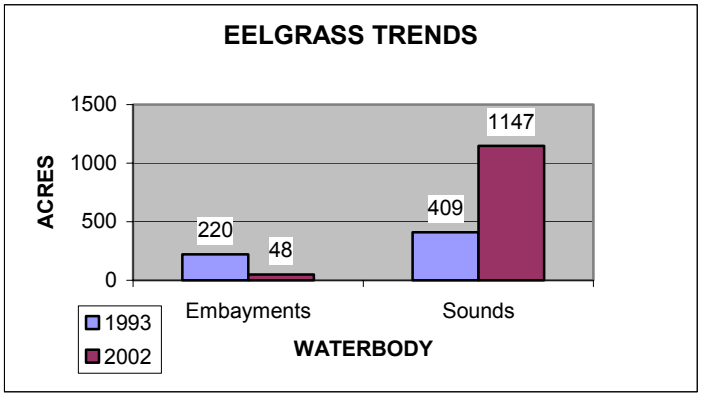
Eelgrass is now absent in central and western Long Island Sound, a disappearance that has likely occurred over many decades due to nitrogen enrichment. It is well established in scientific literature that eelgrass declines are often due to ecosystem changes, such as reduced light, resulting from nitrogen enrichment. Eelgrass is now only found in Fishers Island Sound and sporadically in Long Island Sound east of the Connecticut River. The first systematic mapping of eelgrass beds was performed in 1993 and 1994 using diver surveys. Eelgrass beds were remapped in 2002 using aerial photointerpretation and national mapping conventions. The U.S. Fish & Wildlife Service is planning to map eelgrass beds again beginning in 2005.

Second No Discharge Area Designation

On September 29, 2004, the U.S. Environmental Protection Agency approved the designation of CT's second federally approved No Discharge Area (NDA). The discharge of all boat sewage, treated or untreated, from boats is now prohibited in the coastal waters from Wamphassuc Point to Eastern Point in Groton. The EPA approval means that the 3,700 boats based in the area as well as those that visit must now use pumpout facilities to discharge their septic waste. Eliminating the release of treated and untreated sewage from boats in the NDA will reduce manmade nutrient loading and exposure to bacterial pathogens in swimming areas, shellfish beds, and other environmentally-sensitive aquatic habitats. Before granting such status, EPA must ensure that there are sufficient pumpout facilities available for the boating population within the NDA. This new NDA has a total of thirteen pump-out facilities, nine that are fixed and shore-based, three that are shore-based mobilecarts, and one pump-out boat. Two dump stations are also available for disposal of waste from marine portable toilets.



While the mapping techniques used to date are not directly comparable, there are some obvious trends in data that are evident. In general, the data indicates that eelgrass beds are more successful in open and well-flushed waters as opposed to embayments or coves where nitrogen and other pollutants are typically retained for longer periods. The data showed a 3-fold increase of eelgrass beds in the Sounds and, in contrast, a 4-fold decrease in eelgrass beds in embayments and coves. The locations experiencing decline include Little Narragansett Bay, Stonington Harbor and Mystic Harbor, all of which are subject to nitrogen enrichment from sewage treatment plants. The Niantic River, which once supported some of the most extensive beds and bay scallop populations, has experienced a decline in eelgrass beds because of nitrogen enrichment from nonpoint pollution sources. In 1999, during the warmest summer on record, eelgrass beds in the Niantic River all but disappeared by July. Studies have shown that thermal stresses can also cause eelgrass bed declines, and it may be that shallow flats in the Niantic River have contributed to heat stress conditions.



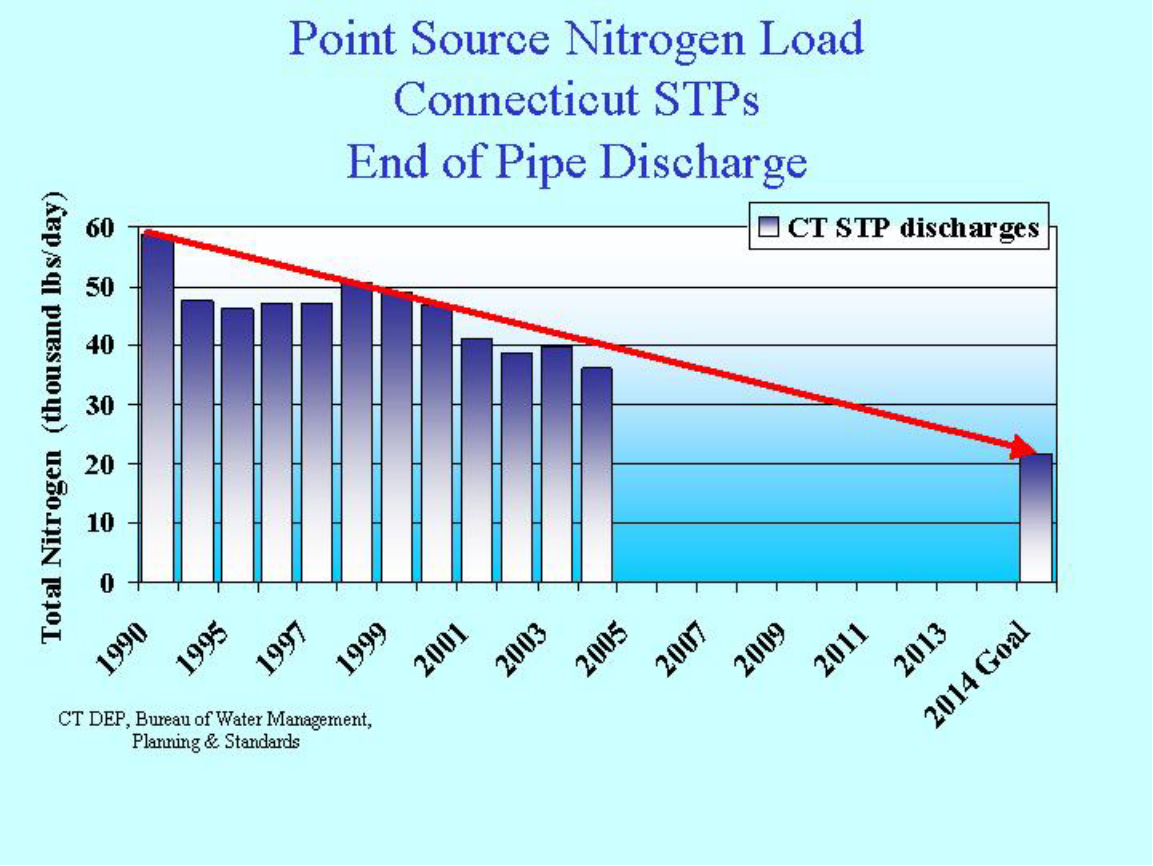
One eelgrass success story demonstrates the value of nitrogen management. In 1987, the sewage treatment plant discharge to the Mumford Cove in Groton was eliminated. In the first year, nearly all of the nuisance algae, sea lettuce (*Ulva lactuca*), disappeared and seedlings of eelgrass were observed. Natural restoration of eelgrass beds followed, slowly at first, then more quickly around year 2000. By 2002, 50 acres of eelgrass had restored spontaneously, demonstrating the resiliency of eelgrass if nitrogen levels can be reduced to levels conducive to the growth and maintenance of this species.

Efforts to Reduce Nitrogen and Improve Water Quality

Nitrogen is the primary pollutant impacting water quality in Long Island Sound. Excess nitrogen fuels a process that creates low dissolved oxygen levels during the summer in the bottom waters of the Sound, which adversely affects aquatic life. Sewage treatment plants have been identified as a predominant source of nitrogen to Long Island Sound. In 2004, the Department's Nitrogen Credit Exchange Program successfully completed the second year of exchanges between Connecticut's 79 municipal sewage treatment plants participating in the program. The Department has issued a general permit that assigns annually decreasing nitrogen discharge levels to each Connecticut plant that collectively will meet the 58.5% target reduction by 2014. Achieving this goal will dramatically improve water quality in the Sound.

To meet the 58.5% reduction goal, many sewage treatment plants will need to upgrade or replace existing treatment systems. However, not all individual plants will need to achieve the full 58.5% reduction. Under the Nitrogen Credit Exchange Program, a plant that removes more nitrogen than required by the general permit is able to sell earned credits to the credit exchange, thus receiving a financial benefit for superior performance. The credits may then be purchased by a plant that is discharging excess nitrogen and needs to obtain nitrogen credits to comply with the general permit.

Since 1993, the State has financed more than $150 million in sewage treatment plant upgrades specifically to improve nitrogen removal. In that time, 31 plants have been upgraded and are now achieving significant nitrogen reductions. As a result, Connecticut sewage treatment plants removed 146,365 more pounds of nitrogen than was required to meet the statewide annual nitrogen reduction goal for 2003. This superior performance generated more credits than were needed by those treatment plants required to purchase credits. Data for 2004, the third year of the program, also shows that the nitrogen reduction target goals for 2004 were exceeded by a margin of 458,000 pounds.



Conservation and Development Planning and Management

Goal: To achieve a future for Connecticut that:

- Conserves and restores the natural environment and traditional rural and urban landscape.
- Restores and revitalizes the urban environment.
- Guides future growth in an efficient, cost effective, and sustainable manner fostering diverse, cohesive, walkable communities that respect and preserve their open lands and natural resources.
- Preserves Connecticut's rich fabric of cultural and historic resources.
- Promotes and maintains a vibrant and sustainable economy.
- Affords a high quality of life for all residents.

Conservation and Development Planning and Management strategies look at problems across media lines and help create the necessary linkages between programs to achieve holistic environmental outcomes. The following are three significant examples of this coordination that were underway in 2004.

Climate Change

Pursuant to PA 04-252, the Department, along with other members of the Governor's Steering Committee on Climate Change ("GSC"), worked on preparing and finalizing the *Connecticut Climate Change Action Plan 2005*. Recommendations were received in January 2004 from a stakeholder process that involved representatives from government, industry, nongovernmental organizations, academia and the general public. Each recommendation was reviewed and updated over the course of 2004. Additionally, input from four legislative committees was also considered.

The plan consists of 55 recommended actions that focus on five major topic areas: transportation and land use; residential, commercial, and industrial energy use; agriculture, forestry and waste emissions; electricity generation; and education and outreach. Examples of recommended actions include:

- Increasing the amount of renewable energy supplied into our electric grid,
- Testing bio-diesel as an alternative fuel through a pilot program,
- Raising vehicle emission standards in Connecticut,
- Upgrading residential and commercial energy building codes and setting high performance standards for schools and state-funded buildings, and
- Improving recycling and waste reduction efforts

Implementation of the recommendations will put Connecticut on target to reduce greenhouse gas emissions to 1990 levels by 2010 and to 10% below 1990 levels by 2020, as set forth by the New England Governors and Eastern Canadian Premiers in 2001 and adopted by state law in 2004. The Department also assists in managing the state's climate change web site,

www.ctclimatechange.com, which provides information on global warming, the state initiative, and the full text of *Connecticut Climate Change Action Plan 2005.*

Coordination of State's Energy Policy

Pursuant to Public Act 03-140 the Department is a member of the Connecticut Energy Advisory Board ("CEAB") and is an active participant in making recommendations on how to meet the state's energy needs in a manner that is environmentally responsible, reliable and cost effective. CEAB is comprised of leaders of public agencies that each have responsibilities for coordinating portions of the state's energy policy.

Addressing Climate Change--
Renewable Energy Pilot Project

Approximately $45,000 in Supplemental Environmental Project ("SEP") funds were recently committed by the Department for a pilot to test biodiesel as an alternative fuel. The pilot will be developed by The Institute for Sustainable Energy at Eastern Connecticut State University. Under the pilot project, a B20 biodiesel fuel mix, composed of 20% soy oil based biodiesel blended with 80% #2 fuel oil, will be used as a heating fuel for one year. The pilot project intends to gather a range of data pertaining to fuel quality, fuel efficiency, air emissions, impact on equipment, and operating costs. If supported by the data, the pilot project will be used to promote further use of crop-based biodiesel fuel for heating businesses, government facilities, and universities.

The pilot fuel switching project advances several air quality management goals including promoting energy efficiency, pollution prevention and environmental stewardship. In addition, the project supports the work of the New England Governors/Eastern Canadian Premiers on climate change, and implements an action recommended in Connecticut's Climate Change Action Plan.

CEAB is charged with revising the evaluation process for energy related siting decisions that will inspire the development of proposals that best or most responsibly meet energy needs in Connecticut. In response to energy demand, CEAB will seek to encourage the continued development of competitive energy markets through the promotion of a diverse array of strategies such as renewable energy, energy efficiency, and the development of a modern, adequate and secure generation and transmission infrastructure. CEAB will evaluate the proposals based on established criteria (Preferential Criteria) in the areas of energy reliability, environmental and natural resource protection, cost effectiveness and other impacts, and how well they solve the problem or address the need for the state of Connecticut.

In 2004 CEAB issued the Preferential Criteria described above and is in the process of developing and designing request for proposal ("RFP") modules to assist with the solicitation of proposals to meet the energy needs in Connecticut. To assist CEAB in its deliberation and development of the Preferential Criteria related specifically to encroachments into Long Island Sound, last summer CEAB retained the Connecticut Academy of Science and Engineering ("CASE") to convene a Long Island Sound ("LIS") Symposium: A Study of Benthic Habitats. The purpose of the Symposium and related report was to convene national and local experts to assist the CEAB in understanding the most accurate yet cost-effective means to analyze and evaluate available data about LIS and to identify additional habitat/ecosystem information that would enhance the capability of state agencies in planning, managing and evaluating proposed energy related uses of LIS and its bottomlands.

Comprehensive Wildlife Conservation Strategy

The DEP Wildlife Division is taking the lead in developing a Comprehensive Wildlife Conservation Strategy ("CWCS") for Connecticut. This will allow the Department and its partners to integrate the management of natural resources, build valuable partnerships, and support regional and national efforts to secure long-term funding for wildlife conservation. Connecticut's strategy will identify species of greatest conservation need and their affiliated habitats and will include conservation actions to address those needs. To develop the strategy, stakeholders, including conservation organizations and teams of technical specialists and scientists, will analyze data and provide scientific recommendations.

The intent of the CWCS is to create a vision for the future of wildlife conservation. To do this, the strategy will:

- Address the broad array of all fish, mammals, birds, reptiles, amphibians and invertebrate species.
- Use available funding to address the species in greatest need of conservation and their habitats.
- Identify actions needed to conserve species diversity and keep common species common.
- Build upon past efforts to conserve all species of wildlife.
- Encourage the creation of partnerships with conservation organizations at local, state and regional levels to enhance opportunities for implementation of actions to conserve wildlife.

Osprey Nest
Haley Farm State Park, Groton

The Department has completed an inventory and compilation of all the available data on the state's fish and wildlife resources, including existing conservation programs and management plans. Experts throughout the Department compiled available data to identify the species of greatest conservation need in Connecticut and their habitats. Over 100 existing conservation plans were identified, reviewed and compiled to summarize previously determined priority species and habitats. These plans are regional and national in scope and include strategic plans prepared by various Connecticut state agencies, The Nature Conservancy's ecoregional plans, Partners In Flight and U.S. Fish and Wildlife Service Bird Conservation and Management Plans, federally-listed species' recovery plans, open space protection plans, fisheries management plans, non-governmental organization strategic plans, species management plans, and much more. Input from cooperating conservation partners was solicited and scientific advisory committees established as part of Connecticut's Endangered Species Act were convened to refine the species and habitat review process. The final report will be submitted to the U. S. Fish and Wildlife Service by October 2005, with final approval anticipated by the end of 2005. Among other things, results of this report will be used to guide environmental quality work efforts. More information on this project, as it progresses, will be made available on the Department's website.

Management of Toxic Pollutants

Goal: Reduce toxic emissions and discharges through reduction strategies that include product stewardship, pollution prevention, emission controls and effective waste management.

Toxic pollutants are generally defined as those pollutants that are known or suspected to cause a wide variety of serious health effects. Mercury, polychlorinated biphenyls ("PCBs") and some pesticides, among other toxic pollutants, are difficult to control given their ability to travel long distances and transfer easily between the physical and biological environment. Once ingested by fish, birds, or mammals, many of these substances can bioaccumulate to a degree that would exceed natural exposure levels. With frequent exposure over time, the amount present in an organism's tissue can build up and cause toxic effects. In humans, effects may include nervous system abnormalities, reproductive and developmental problems, cancer, and genetic impacts.

Toxic Pollution Control Strategies

Using diverse strategies, Connecticut has made considerable progress in reducing toxic releases. Stricter water quality standards have resulted in substantial progress towards eliminating adverse impacts posed by toxic pollutants on aquatic life. Discharge permit limits and monitoring requirements for toxic pollutants and general effluent toxicity have been established to protect aquatic life from the discharge of cooling water, treated industrial process wastewater, municipal sewage treatment plant effluent, and stormwater from industrial sites.

Looking ahead, the management of toxic pollutants will continue to be one of the Department's greatest challenges. The many types and sources of toxic pollutants make regulation in this area particularly difficult. For example, the Clean Air Act mandates regulation of 188 toxic pollutants and EPA has identified 174 categories of industrial and commercial sources that emit these pollutants. The Department has focused data collection and other resources needed to identify and address toxic pollutants of priority to Connecticut. They include:

Diesel Risk Reduction

The Department has been a leader in addressing diesel risk by raising public awareness and developing and promoting diesel reduction projects. Efforts began in 2001 by focusing on the emissions from school buses. Diesel exhaust emitted by school bus nose-to-tailpipe queue lines has been identified as a significant source of exposure risk for school children. Nearly 387,000 Connecticut children ride 6,100 school buses each school day. Of those 6,100 school buses, 99% are diesel fueled. An idling diesel engine is a significant source of nitrogen oxides (NOx) emissions, fine particulate matter (PM 2.5), and 40 other known carcinogens.

The Department remains steadfast in its commitment to move forward with a multi-faceted reduction strategy that includes emission reduction technology, clean fuels, education and outreach and successful partnerships. This strategy is currently targeted at school buses, off-road construction equipment, stationary diesel engines and electric generating units, and transit buses and trucks.

- ***School Buses*** -As a result of a successful partnership, in 2003 the Department completed a full-fleet retrofit of school buses serving the Norwich school district and they continue to run on clean fuel. A retrofitted school bus is cleaner because it either has been fitted with a device designed to reduce pollution and/or it uses a cleaner fuel. In the City of New Haven retrofits of all 181 school buses serving New Haven students are currently underway. Projects are in the planning stages for Bridgeport and Hartford.

- ***Construction Retrofits***-As a result of a collaborative effort, approximately 100 pieces of construction equipment have been retrofitted as a result of adopting a contract specification. The project has been cited as a national model and work continues to expand the universe of projects utilizing clean retrofit technologies.

- ***Building Local Constituencies*** – The Department has also made significant investments over the past year in raising awareness within cities and towns of the adverse impacts of diesel emissions. Central to this effort has been educating the next generation of environmental stewards. Over the past year the Department invested in the development of a clean air curriculum for Connecticut's middle school science classes which includes a component dedicated to informing children about the health effects related to diesel emissions and the reduction strategies that can be implemented in their community. The curriculum has been implemented in Norwich and will be implemented in New Haven this year.

- ***Anti-idling***- A related and complimentary outreach effort implemented over this past year has focused on eliminating unnecessary idling of school buses. Reducing idling from school buses will help reduce diesel emissions and improve air quality in the school environment.

The effort is aimed at increasing compliance rates with the three-minute idling rule contained in Section 22a-174-18(a)(5) of the Regulations of Connecticut State Agencies.

To remind school bus drivers and the general public about their obligation not to idle their vehicles, the Department and the Connecticut Department of Transportation have implemented a new anti-idling signage program. The Department is using Supplemental Environmental Project ("SEP") funds to provide signs to public schools. The signs posted include both a regulatory sign that clearly informs vehicle drivers that they may not idle for more than three minutes and an informational sign that points out the linkage to air quality. These signs have been posted in school bus loading areas at public schools in Norwich and New Haven and will soon be posted in Hartford.

MTBE Banned

The Federal Clean Air Act requires that certain geographical areas that exceed the National Ambient Air Quality Standards for ground level ozone, including Connecticut, must use "reformulated" gasoline ("RFG"). To meet this standard, Connecticut along with many other states used gasoline blended with the oxygenate Methyl Tertiary Butyl Ether ("MTBE") because it was readily available at a reasonable cost and blended easily with gasoline at the refineries. Since the 1990s, the use of MTBE has been effective in reducing emissions of carbon monoxide, volatile organic compounds, nitrogen oxides and other automobile toxics. It also, however, became apparent that MTBE was having an adverse impact on the state groundwater. Because of the concentration in gasoline products and its characteristics in groundwater, MTBE has been found to have contaminated more wells than would have otherwise been affected if it were not present in gasoline.

After considering these factors, the General Assembly passed legislation banning the additive beginning in January 2004. Because the federal oxygenate requirement for RFG remains in effect, MTBE had to be replaced by another product. The only viable substitute available at a reasonable cost and in sufficient quantities for Connecticut's gasoline market was ethanol. Prior to the ban of MTBE taking effect, the Department worked closely with gasoline distributors, gas station owners and municipalities to coordinate a smooth transition from the use of MTBE to the use of ethanol. The transition to ethanol has successfully been completed at this time.

Devil's Hopyard State Park, East Haddam

Mercury Action

The Department continues its efforts to eliminate the discharge of anthropogenic mercury to the environment. This year's efforts included implementation of many of the provisions of the Mercury Reduction and Education Act (Public Act 02-90) as well as development of other regulatory measures aimed at minimizing mercury emissions. A few highlights include:

- ***Limiting Mercury Emissions*** - Last session the General Assembly passed Public Act 03-72, An Act Concerning Mercury Emissions from Coal-Fired Electricity Generators. This law requires the Bridgeport and AES Thames generating plants to reduce the amount of mercury they emit, starting July 1, 2008, according to specific statutorily set standards. The law also requires the Department to review mercury emission limits applicable to all coal–fired plants in the state that satisfy the criteria set forth in Public Act 03-72 by July 1, 2012 and authorizes the Department to adopt regulations imposing more stringent mercury emission limits on or after that date. This legislation sets the most stringent mercury emission limit for power plants in the country.

- ***Phase-out of certain mercury-containing products*** - According to the Mercury Reduction and Education Act, effective July 1, 2004, the sale or distribution of mercury-added products containing more than one gram or 250 parts per million of mercury is prohibited, unless the product is specifically exempted from the statutory phase-out requirements. An example of one common household product subject to phase-out this year is the mercury thermostat. Mercury thermostats typically contain between three to five grams of elemental mercury, which exceeds the statutory threshold of one gram of mercury. Other products that are now subject to the phase-out include various chemical reagents and mercury-added switches.

- ***Dental mercury*** - The Department in partnership with the Connecticut State Dental Association and Wastewater Treatment Facilities Operators finalized Best Management Practices (BMP) for Dental Offices Waste Handling in Connecticut in October 2003. This was done as part of an effort to help dental practitioners and dental schools meet the requirements of the Mercury Reduction and Education Act. Among other requirements, a primary component of the BMPs is the installation of an amalgam separator to trap and remove mercury amalgam at the dental practice. Amalgam separators are required to meet the ISO 11143 standards with a mercury amalgam removal rate of 95% or higher. The department has initiated a program requiring dental practitioners to certify that they are in compliance with the dental amalgam BMPs, especially the installation of amalgam separators that meet the ISO 11143 standards.

  To date, more than 70% of dental practitioners have either certified that they have complied with the dental amalgam BMPs, including the installation of amalgam separators, or that they do not use amalgam in their practice. The Department will be conducting follow up activities to further assure compliance with the dental provisions of the Mercury Reduction and Education Act.

Materials Management

Goal: Minimize impacts to public health and the environment by promoting proper storage, handling and usage of materials and the minimization of waste disposal by the promotion of recycling and beneficial use of waste products.

The proper management of wastes, chemicals and other materials is critical to the protection of our environment, health and safety. The Department has several programs that are dedicated to assuring proper management and control of materials including petroleum products, industrial chemicals, radioactive materials, pesticides, PCBs, and solid and hazardous wastes. Collectively, these programs protect environmental quality and public health and welfare by promoting waste minimization, recycling, beneficial use of solid wastes, and spill prevention and control practices.

Major Revisions to Hazardous Waste Management Regulations

In September 2004, the Department received approval from the federal Environmental Protection Agency ("EPA") for major revisions to the State's Hazardous Waste Management Regulations. This approval allows the Department to administer all elements of the federal Resource Conservation and Recovery Act ("RCRA") programs governing management of hazardous waste including land disposal requirements, generator requirements, corrective action for remedial projects, recycled used oil, universal waste, and an expanded public participation process.

Better Coordinated and Efficient Cleanups: As part of the authorization, EPA delegated Connecticut the authority to implement the RCRA facilities remediation or Corrective Action Program. The Department is authorized to accelerate cleanups at closed land disposal sites by requiring cleanups in advance of the issuance of permits and without the need for orders. The cleanups can be performed either under the direction of the Department or a Licensed Environmental Professional (LEP). This approach was selected to integrate Corrective Action with other applicable remediation programs so that regulated facilities may work with only one program.

National Notable Achievement Award

In April 2004, the USEPA awarded the Department a National Notable Achievement Award for its regulatory reform work in crafting the State's Corrective Action Program. The Department received recognition for the first state program in the nation that includes the use of third party oversight or LEPs in a Corrective Action Program.

The incorporation and adoption of Connecticut's cleanup standards into this program will streamline the cleanup of those sites by cleaning them up in accordance with one, uniform standard. Previously, the cleanup of contaminated sites were required to meet the standards of both the state and federal programs, prolonging the process of getting site cleanups approved. This coordinated approach allows facilities to efficiently meet multiple regulatory requirements while effectively protecting human health and the environment.

Radiological Remediation at Former Waterbury Clock Factory

During 2004, the Department directed remediation activities at the location of the former Waterbury Clock Company. This facility now houses a leather clothier, an apartment complex, and a human service center for Waterbury. The former factory was radiologically contaminated as a result of careless and unprotected radium handling in the 1920s. At that time, there was no realization of the inherent dangers of radium. Asbestos containing material was also discovered on top of the radium. The asbestos containing material was found in a blanket believed to have been laid in the 1940's or 50's as fire protection layer. Two other additional layers of hardwood floor were placed on top of this layer of asbestos, which was placed on top of the original factory floor where the radium contamination exists. The project increased in scope to become an asbestos remediation project as well as a radiological remediation project. Asbestos abatement was confined to regions which were only radiologically contaminated.

Four apartments have been remediated allowing for rehabitation, and an additional 30,000 square feet of factory space was remediated. This remediation activity removed radioactive contamination from the environment of a handicapped and minority population. Further activities will continue in 2005. The remediation project will be completed when confirmatory radiological surveys performed by the Department show remediated levels of radioactivity have met the agency's radiological remediation standard.

Use of Radium at Clock Factories

From 1857 through 1944, the Waterbury Clock Company produced clocks. Beginning around 1920, radium-containing paint was used to paint number dials on clocks, watches and aircraft navigation equipment because of the paint's ability to illuminate in the dark. This painting was done by hand, with the common practice of using the lips to produce a point on the tip of the brush. Many workers accumulated significant body burdens of radium-226 through ingestion and absorption into the bones. There are numerous reports of occupational diseases and possible radiation related deaths from these early days of operation of the Waterbury Clock Factory.

Radium dial factory in the mid-1920s

Increased Inspection Presence

During 2004, the Department implemented an innovative inspection initiative to strategically increase the Department's field presence in the regulated community to address noncompliance. The data collected will provide valuable information to analyze the rates of compliance and assist in identifying where the Department can more effectively focus inspection and compliance assistance resources in the future.

The two areas of focus were the Resource Conservation and Recovery Act ("RCRA") and Underground Storage Tank ("UST") Programs of the Bureau of Waste Management where additional information was needed to target compliance efforts effectively. The RCRA program, for example, primarily prioritizes its inspection resources on inspecting hazardous waste treatment, storage and disposal facilities and large quantity generators while the large numbers of small quantity generators are deemed a lower inspection priority. In previous years, the RCRA program inspected about 20 small quantity generators out of a universe of 1720.

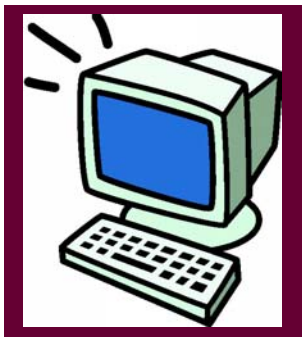
As part of the initiative, the Department hired seven college students with intermediate course work in science or related fields to conduct compliance indicator surveys. The compliance indicator surveys were designed to cover limited compliance areas that are indicators of overall compliance. The compliance indicator surveys were conducted at randomly selected small quantity generators of hazardous waste and facilities with underground storage tank systems that failed to meet the 1998 deadline for removal or upgrade of non-compliant tank systems. In a period of approximately 10 weeks, 636 small quantity generators and 624 UST facilities were surveyed. Sites that were found in significant non-compliance were flagged for full inspection by program staff. Preliminary review of the surveys indicate a high level of compliance by small quantity generators.

Chatfield Hollow State Park, Killingworth

The Department plans to continue this inspection initiative for the next several years. The benefits realized from continued implementation of the initiative include an increased field presence, the ability to screen sites for full inspections, the development of statistically valid compliance rates and measures, identification of areas where additional compliance assistance is needed as well as identification of where enforcement action for RCRA and UST violations is necessary.

General Permit for Disassembling Used Electronics

A typical computer or television monitor contains three to nine pounds of lead. Printed circuit boards contain beryllium, cadmium, flame retardants and other compounds that can contaminate the air and groundwater and expose humans to carcinogens and other toxins when equipment is shredded, burned or sent to a landfill.



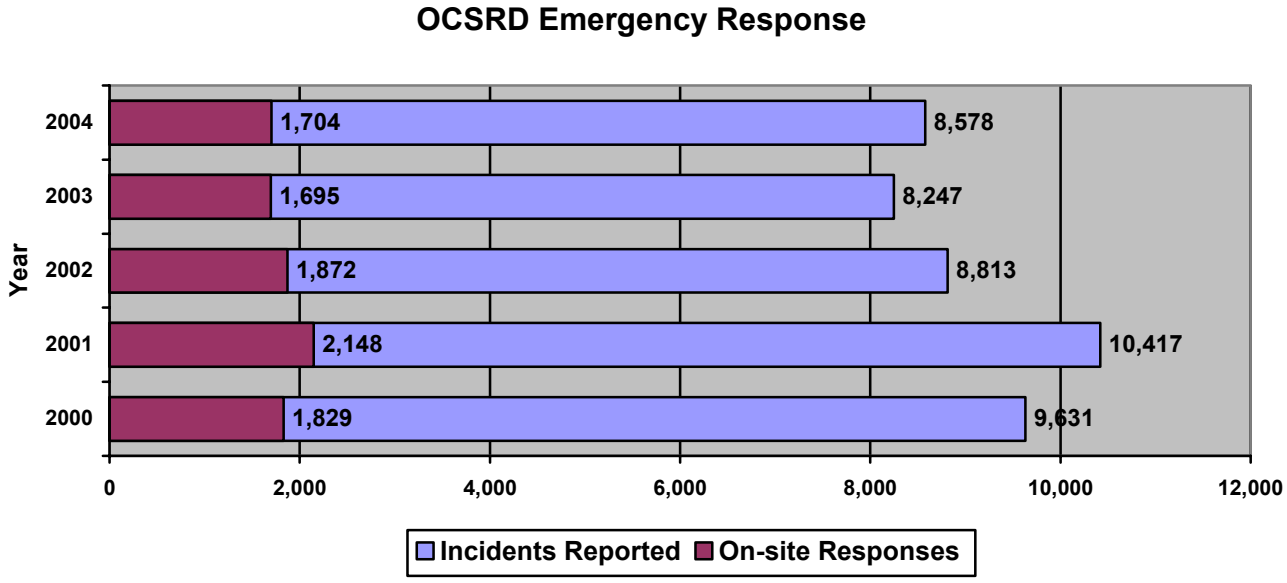
In an effort to help facilitate the proper disposal of used electronics, the department issued the General Permit for Disassembling Used Electronics ("general permit") in August 2004. The general permit applies to companies that are large quantity handlers of universal waste (accumulate more than 5000 kilograms onsite at any one time) and engage in the disassembly of used electronics. The general permit requires facilities to prepare and implement a facility site plan, an operation and maintenance plan, an emergency and preparedness plan and a final closure plan. The facility must maintain waste analysis and tracking records, inspection logs, emergency and spill reports, employee training records and closure cost estimates. The conditions in the general permit include specific requirements for storage and marking of used electronics and for training staff in the proper management and handling of universal wastes. The general permit, registration forms and instructions can be found on the Department's website at: http://www.dep.state.ct.us/pao/download.htm#WasteGP.

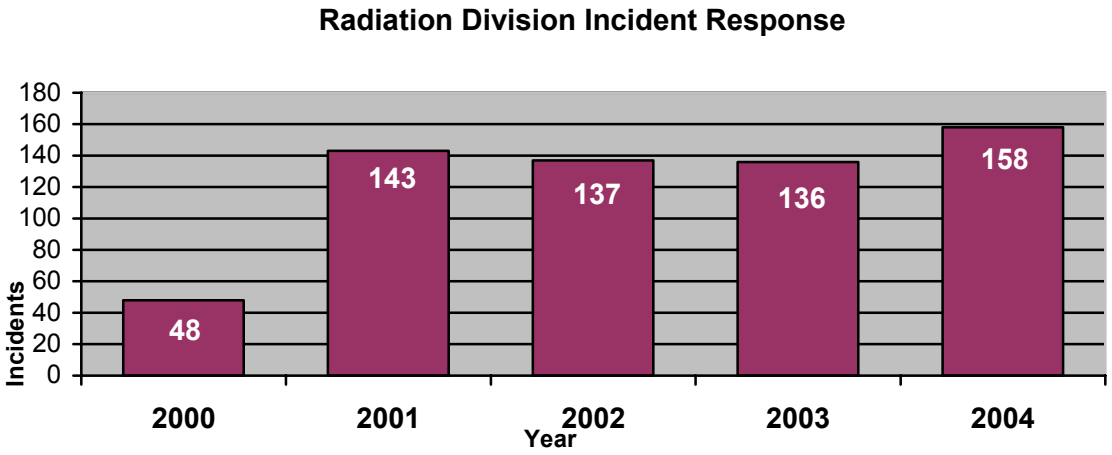
Emergency Response

Goal: To minimize the impact on the environment, and public health and safety that may result from natural and manmade disasters.

Flooding, fires, hurricanes and a range of other natural conditions present threats to public health and the environment for which emergency response capacity is needed. More common are manmade emergency response conditions. Americans routinely use over 60,000 chemicals that are often mishandled or accidentally released, creating risk of harmful exposures. Risk to public health and the environment can also occur from radiological and biologically hazardous materials.

Both the Oil and Chemical Spill Response Division ("OCSRD") and the Division of Radiation have staff available to respond to emergency incidents on a continuous twenty-four hour, seven days a week basis. OCSRD investigates all incidents to determine if an on-site response is warranted. The number of OCSRD on-site responses is depicted in the graph below. Incidents not requiring on-site response are often resolved by providing technical assistance to the responsible parties and coordinating with local response agencies.





Response to Tanker Spill Near Farmington River

On December 3, 2004, OCSRD responded to a gasoline spill on Brickyard Road in Farmington. A tanker carrying 8,600 gallons of gasoline overturned. Approximately 2,900 gallons of gasoline was released to a grassy portion of land adjacent to Brickyard Road.

Due to the quick, effective response by the Department the spill was successfully contained avoiding contamination of the nearby Farmington River. Department personnel oversaw the offloading of 5,700 gallons of gasoline still on the tanker. Within four hours, the tanker was free of gasoline and removed from the scene.

OCSRD staff, assisted by personnel from the Department's Leaking Underground Storage Tank program and Remediation program, began the process of excavating the soil contaminated by the gasoline. Nearly 250 yards of soil were removed. Through subsurface investigations, it was determined that the spill was contained within the immediate area where it occurred, but that the ground water in the area had been adversely impacted.

As a result, a system to pump and treat the groundwater to remove the gasoline was initiated. The Emergency Phase of this response, which began with the initial report of the tanker rollover and ended with installation of the groundwater recovery system, lasted ten days. The long-term cleanup of the site is now being handled by the Department's Remediation program to ensure any gasoline remaining in the groundwater is captured.

Department Strives to Enhance Nuclear Incident Response Capability

The Department continues to propose legislation enabling Connecticut to have regulatory authority over radioactive material within its borders. An Agreement between the Governor of the State of Connecticut and the US Nuclear Regulatory Commissioner (Agreement State) would authorize the regulation of radioactive material under federal jurisdiction with the state's existing authority. Prior to enactment of the Atomic Energy Act of 1954 by the U.S. Congress, nuclear energy activities in the United States were largely confined to the Federal government. This act made it possible for private commercial firms to use nuclear material for the first time. Congress determined that these activities should be regulated under a Federal licensing system to ensure consistency in the protection of public health and safety, and the environment. Congress also recognized that States may better administer this program locally and provided a mechanism for

the transfer of NRC authority to a state to regulate the radiological health and safety aspects of nuclear materials.

A consequence of the terrorist attacks on 9/11 is the increased concern and awareness for terrorists to attack the homeland using dirty bombs or nuclear weapons to spread radioactive material into the environment to threaten public health and safety, the environment, and socio-economic development. One of several benefits to an Agreement State program would be increased technical staff necessary to administer the program. This additional staff would increase our capability to evaluate the credibility of communicated threats, authenticate claimed nuclear materials, provide hazard analysis, respond to nuclear incidents after they occur, and recommend protective actions.

Department Responds to Helicopter Rotor Blade Nuclear Device Incident

On March 27, 2004 the Department's Division of Radiation responded to an incident in East Lyme involving a nuclear device. Specifically, the Department was contacted by East Lyme Police Department, requesting assistance based upon a report of radioactive material found by a town resident in their yard. The Division of Radiation responded and put the device in a safe condition and stored it until it was returned to the licensee. The device was part of an in-flight blade inspection system (IBIS) used by helicopter pilots to alert them to problems associated with a helicopter's rotor blades. The last known records for the device show the source had been sent to Sikorsky in 1984 to be installed on a Navy H-53-E helicopter, and later sent to General Nucleonics for refurbishment and shipped back to the Navy in 1990. In June the Department shipped the device to General Nucleonics. The source of radiation did not pose a threat to public safety as long as it wasn't placed next to the body for long periods of time (ten's of hours).

Participation in Homeland Security Coordinating Council for new Department of Emergency Management and Homeland Security

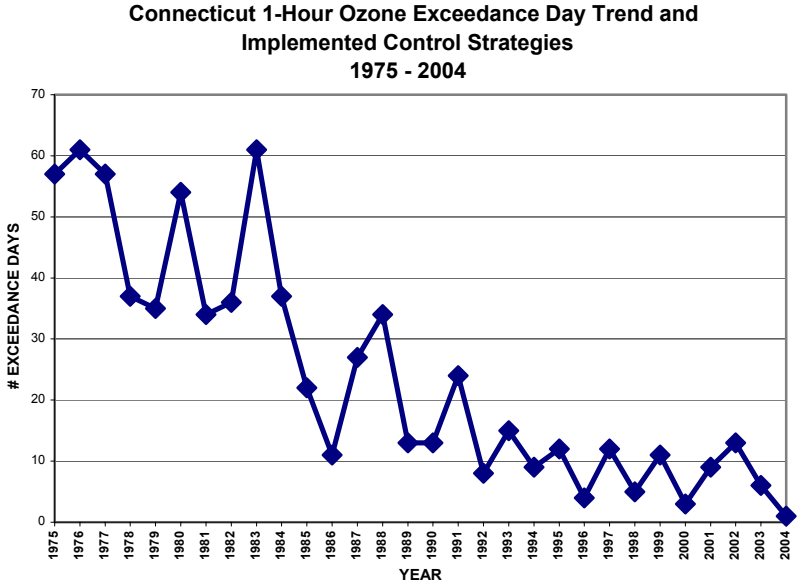
Public Act 04-219 established the Department of Emergency Management and Homeland Security as well as an Emergency Management and Homeland Security Coordinating Council. The function of the Coordinating Council is to advise the Department of Emergency Management and Homeland Security on various department activities such as strategic planning, funding, emergency response systems, emergency preparedness, and homeland security. The Department is a member of the Council and has actively participated in developing Connecticut's preparedness to respond to both natural and terrorist incidents. Department subject matter experts are routinely assigned to Coordinating Council working groups to assist the Department of Emergency Management and Homeland Security.

Air Quality Management

Goal: Protect and enhance ambient air quality to make the air safer to breathe for all citizens and to reduce the impact of air pollution on other environmental media, resulting in many benefits, such as restoring damaged ecosystems and reducing health risks to those whose subsistence depends directly on those ecosystems.

Connecticut has successfully reached attainment[1] with National Ambient Air Quality Standards ("NAAQS") for carbon monoxide, lead, nitrogen dioxide, particulate matter ("PM10") and sulfur dioxide. While significant progress has been made in reducing ozone, air quality continues to exceed NAAQS for 1-hour and 8-hour ozone levels. A review of Connecticut's monitored air quality data, emissions estimates and other corroborating analyses demonstrates that the Department's efforts to reduce ozone precursor emissions are being implemented successfully.

The graph below illustrates the decline from 1975 through 2004 in the annual frequency of days exceeding the 1-hour ozone standard, and shows the year of implementation for each of Connecticut's major ozone control programs. Progress in reducing ozone levels is expected to continue in 2005 and beyond as a result of local and national programs that have been adopted to meet the 1-hour ozone NAAQS and programs under development to assure attainment of the 8-hour ozone NAAQS by 2010.



Connecticut's efforts to attain NAAQS have involved a wide variety of emission reduction strategies over the past thirty years including operating requirements for stationary and area sources and an effective permitting and enforcement program to assure compliance. Despite Connecticut's continued progress, more work is needed to consistently ensure clean, healthy air for our citizens.

[1] An area in attainment is considered to have air quality as good as or better than the National Ambient Air Quality Standards as defined in the Clean Air Act. An area may be in attainment for one pollutant and in non-attainment for others.

Efforts to Reduce Fine Particulate Emissions

In 2004 Connecticut received EPA's attainment designation for the fine particulate matter national ambient air quality standards (NAAQS) for the entire state except for the Fairfield and New Haven Counties.[2] Fine particulates, frequently referred to as PM 2.5, are less than 2.5 micrometers in diameter. Fine particulates are unhealthy to breathe and have been associated with premature mortality and other serious health effects. These particles are derived from a variety of sources, including factories, power plants, trash incinerators, motor vehicles, construction activity and fires.

All scientific monitoring data identify Connecticut as in attainment for PM 2.5. EPA's non-attainment designation of Fairfield and New Haven Counties was based on a technical procedure applied uniformly across the nation; whereas Connecticut's attainment recommendation for those counties was based on monitored evidence as well as unique, local circumstances not considered by EPA's analysis.

The Department continues to expand its current effort to aggressively achieve further reductions in pollutants contributing to elevated PM 2.5 levels within Connecticut. Connecticut is a recognized leader for implementing the most stringent power plant regulations in the country and continues to pursue an aggressive diesel risk reduction strategy and Climate Change Action Plan to achieve reductions for cleaner, healthier air.

[2] *In EPA's final rulemaking, Fairfield and New Haven Counties are included as part of a multi-state nonattainment area comprised of most counties in the New York City metropolitan area*

Substantial Nitrogen Oxides ("NOx") and Sulfur Dioxide ("Sox") Reductions in CT

Emissions of NOx to the atmosphere are a concern for Connecticut's air quality and water bodies. On hot summer days, NOx and volatile organic compounds ("VOCs") react in the presence of sunlight to form ground-level ozone, or smog. Throughout the year, the deposition of nitrates and nitric acid (which are formed from reactions between NOx and other compounds in the atmosphere) leads to the degradation of water quality in lakes, rivers and Long Island Sound and causes damage to materials and plants.

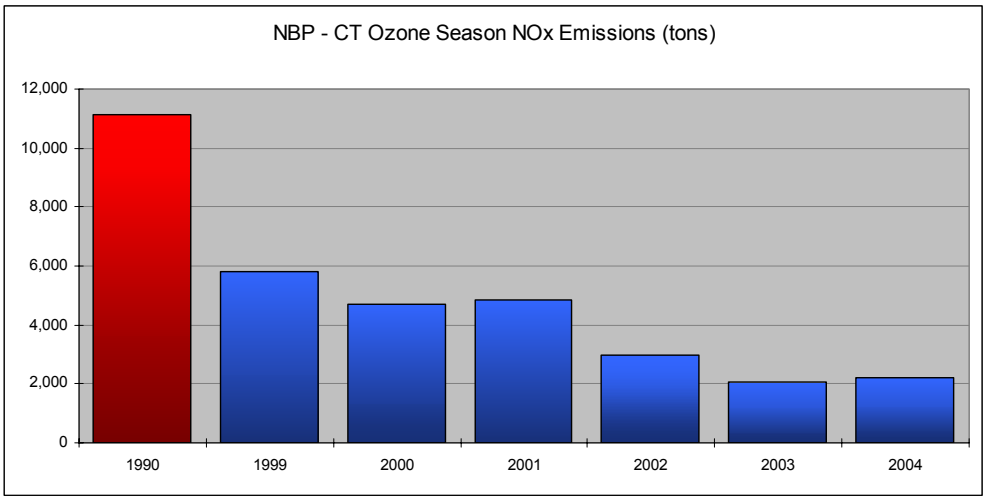
Connecticut's air quality is substantially impacted by NOx emissions from upwind sources. While out-of-state upwind emissions have decreased in recent years, they continue to dwarf any NOx emission source located within the regulatory jurisdiction of the Department. In fact, advanced air quality computer models have consistently shown that even if all NOx emission sources in Connecticut were merely "turned off," the air quality in Connecticut would still exceed the federal health-based standard for ozone on days when the prevailing winds are out of the south and west. Air pollution in the form of NOx transport from other states has persistently undermined Connecticut's ability to provide cleaner, more healthful air to the State's residents and to mitigate the nitrification of Long Island Sound.

As mentioned above, Connecticut is currently designated as nonattainment with the 1-hour and 8-hour National Ambient Air Quality Standards ("NAAQS") for ozone, and as a result of this, the Department is required to develop a comprehensive plan to reduce ozone season NOx emissions. One of the main sources of NOx reductions has been the inclusion of Connecticut's power plants ($\geq$ 25 MW) and large industrial boilers ($\geq$ 250 MMBtu/hr) in the regional NOx Budget Program (NBP).

The NBP is a cap-and-trade program designed to reduce NOx emissions in a manner similar to the U.S. EPA's Acid Rain Program for sulfur dioxide (SO2) emissions. Under the NBP, sources throughout the Eastern U.S. are allocated allowances by the participating state governments. Each allowance permits a source to emit one ton of NOx during a given control period. For each ton of NOx emitted by a participating facility in a given control period, one allowance must be retired and can no longer be used.

Allowances may be bought, sold, or traded and can be banked for future use. Each budget source must comply with the program by demonstrating at the end of each control period that actual emissions did not exceed the amount of allowances held for that period. Regardless of the number of allowances held, a source cannot emit at levels exceeding any other federal or state limit.

Since Connecticut units began operating under the NBP in 1999, NOx emissions and the overall average NOx emission rate per unit of heat input have substantially decreased from 1990 baseline year values. This progress is noted in the following graph. To date, Connecticut NBP units have had nearly full compliance with the emissions requirements of this program despite the increasing demand for power.



As a result of the strategies implemented to date, emissions from power plants have been drastically reduced. Overall, sulfur dioxide emissions have been reduced by 80% from 1999 levels and emissions of nitrogen oxides by over 61%. Between 1999 and the beginning of 2004, power plants reduced SO_2 emissions by approximately 33,109 tons per year and NO_x emissions by 7,887 tons per year. Because of these drastic emission reductions from the power plant sector, mobile sources (e.g. heavy duty diesel trucks and buses), now comprise 68% of the emissions inventory in Connecticut. This trend has also resulted in an increased emphasis on emission reduction strategies focused on the mobile source sector. Major efforts over the past year have included adopting the California Low Emission Vehicle program, developing and implementing a comprehensive diesel reduction strategy as well as ensuring the restart of Connecticut's inspection and maintenance programs. More information about the Department's diesel reduction efforts can be found under the toxics management priority.

Watershed Management

Goal: To protect and restore the state's surface waters and groundwaters, and water-related resources and habitats; protect the public water supply and human health and safety; and preserve and enhance water-based recreation, propagation of fish and aquatic life.

Water Quality Monitoring and Assessment

Ambient monitoring of the State's water resources is a critical component of Connecticut's water management programs. Monitoring data may describe the physical, chemical or biological characteristics of surface waters, underlying sediments, and/or biological communities. Data are used for a wide range of purposes that include evaluating water quality trends and compliance with water quality standards, complementing permit issuance and enforcement activities, directing construction of treatment facilities and establishing program management priorities.

Connecticut assesses and reports on its water quality every two years in a Water Quality Report to Congress (305(b) Report, http://www.dep.state.ct.us/wtr/wq/305b/305b_index.htm), which in turn is used to generate the State's list of impaired waters or 303(d) list (http://www.dep.state.ct.us/wtr/wq/tmdlbrief.htm). Impaired waters are then prioritized for Total Maximum Daily Load ("TMDL") or pollutant load analyses and management.

Within its borders, Connecticut contains approximately 5,830 miles of rivers and streams (5,484 perennial miles), 2,267 lakes and ponds (greater than 1 acre) comprising 64,973 acres, and 613 square miles of estuarine waters. Monitoring and assessment has historically focused on waste-receiving streams and recreational lakes with public access. While efforts have been made to increase monitoring coverage through a rotating basin approach and with the use of probabilistic monitoring, 28% of perennial stream miles and 43% of lake acres were assessed for the 2004 305(b) report.

TMDLs Developed

As part of ongoing efforts to improve water quality, the Department is developing TMDLs for impaired waters. A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can assimilate without adverse impact to aquatic life, recreation, or other designated uses. The end result of the TMDL process is a Water Quality Management Plan with quantitative goals to reduce pollutant loading to impaired waters.

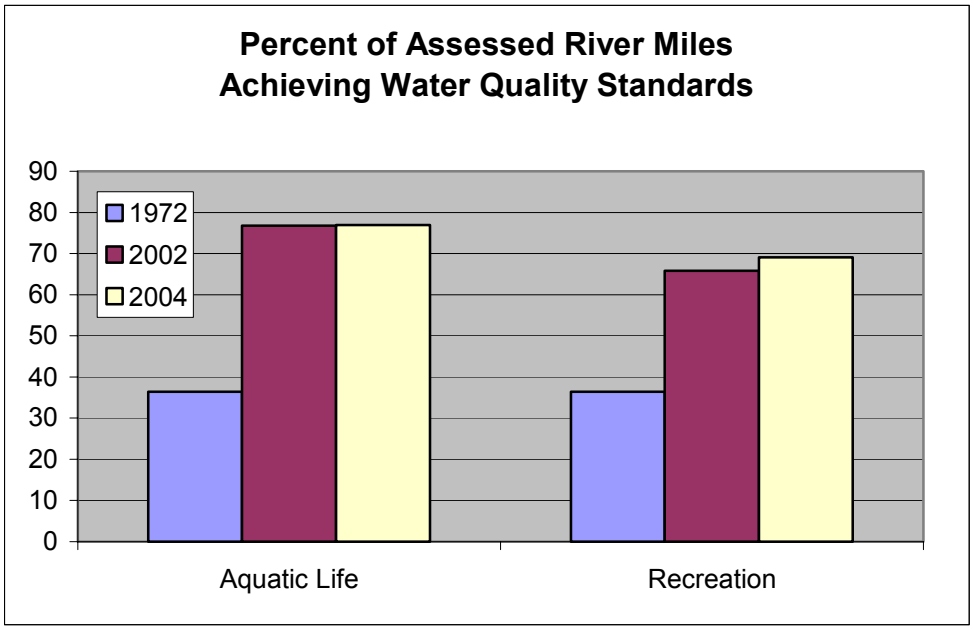
A variety of TMDLs have been developed for both fresh and estuarine waters by the Department. To date, the EPA has approved 31 TMDLs in Connecticut affecting a total of 13 waterbodies. The types of pollutants addressed in these TMDLs range from metals (copper, lead, zinc), chlorine, and ammonia (associated with point sources) to bacteria, nitrogen, and phosphorus (associated with nonpoint sources). During 2004, 30 TMDLs affecting a total of 19 waterbodies were prepared and are currently undergoing adoption.

Future efforts for the TMDL Program will focus on bacteria in freshwater systems with the major source being stormwater runoff, bacteria in coastal waters with shellfishing impairments, aquatic life support impairments where the cause is unknown, and the development of lake specific nutrient criteria.

Water quality is assessed in terms of how well a waterbody supports its designated uses, which are specified in the CT Water Quality Standards (http://www.dep.state.ct.us/wtr/wq/wqs.pdf). A detailed assessment methodology is documented in the *CT Consolidated Assessment and Listing Methodology for 305(b) and 303(d) Reporting*

(http://www.dep.state.ct.us/wtr/wq/calm/calm.htm). Depending on data availability and the type of assessment, a combination of the following types of data may be used: physical/chemical, biological community, indicator bacteria, aquatic toxicity, tissue contaminant, and sediment chemistry/toxicity. While the Department conducts routine stream and estuarine monitoring, it also depends on a number of other organizations and agencies (e.g., USGS, State and local health departments, volunteers, consultants and academics) for assessment information.

The sources of impairment of Connecticut's surface waters include a mixture of point sources and nonpoint sources. Combined Sewer Overflows ("CSOs") affect 88 stream miles and 173 square miles of estuary. Municipal sewage treatment plants ("STPs") contribute nutrients that may cause nuisance algal blooms in 237 square miles of estuary and more than 2,000 acres of freshwater impoundments. Nutrients associated with nonpoint source pollution and stormwater



runoff, groundwater leachate and atmospheric deposition affect an even larger proportion of surface waters. The State has made significant progress in addressing industrial and sewage pollution since passage of the Clean Water Act in 1972. However as the above figure suggests, incremental improvements in water quality will proceed at a slower pace due to the complexity and cost of solving remaining problems, such as nonpoint source pollution, nutrient removal from STPs, and elimination of CSOs.

Efforts to Reduce Nonpoint Source Pollution

Nonpoint sources ("NPS") comprise polluted runoff from a variety of modified land uses, particularly urban and residential areas in Connecticut. Their diffuse nature makes management difficult, requiring persistent and widespread attention, including actions taken by individuals to manage their properties.

Connecticut's Section 319 Clean Water Act Nonpoint Source Program ("NPSP") is designed to help address this management need. Funds are targeted to help provide managers and the public

with a better understanding of the problem, management tools, and collaborations that lead to broader change, as well as to implement best management practices ("BMP") to reduce pollutant loads. Hundreds of NPS projects have been undertaken since program initiation in 1990.

The Department, through several NPS grants with the U.S. Geological Survey, is studying the effects of excess phosphorus loading in the upper Thames River. Phosphorus is a nutrient that produces unsightly and environmentally damaging algae blooms in the river system, particularly in reservoirs. The Thames River effort over several years will provide the monitoring and research required to better understand phosphorus sources and their potential impacts to river systems so that future watershed-based plans can be more appropriately developed.

Haley Farm State Park, Groton

In January 2004, the Department issued the Municipal Separate Storm Sewer System ("MS_4") General Permit. The general permit requires that municipalities with urbanized areas, as determined by United States census data, manage their stormwater systems to reduce or eliminate the discharge of pollutants in the stormwater. Please see the *Promoting Environmental Stewardship* section of this report for information on Department outreach activities on the MS_4 general permit.

Ensuring Sound Environmental Results through Collection of Scientifically Valid Data

The Department is committed to implementing a quality assurance system designed to ensure that environmental programs produce the type and quality results needed and expected. The Department strives to ensure that all environmental data collected, generated and processed will be scientifically valid; of known precision and accuracy, of acceptable completeness; and legally defensible. The Department's quality assurance system is maintained in accordance with applicable state and federal laws and rules, standards, guidance, contractual requirements, and sound management practices. The data and information used as a basis for environmental program decisions, i.e., establishing environmental quality standards, emissions limitations, permit limits and resource management plans, shall be in a form that may be clearly presented to the Department's various stakeholder. The many components of a quality assurance system include an organizational Quality Management Plan ("QMP") and individual program Quality Assurance Project Plans. For more information go to http://www.dep.state.ct.us/qa/qmp.asp

Managing Environmental Compliance

Goal: Maintain and further enhance environmental protection in Connecticut by using permitting, assistance and enforcement resources in an integrated manner to solve the environmental problems identified as priorities.

The Department continues to use a broad range of regulatory, permitting, assistance and enforcement tools to maximize protection of public health and the environment, maintain a strong, credible enforcement presence and to minimize the potential impacts that regulated activities can have on the environment. Through its efforts in developing, implementing and maintaining regulatory standards, licensing requirements, and permit limits and guidelines, the Department manages activities such as air emissions, wastewater discharges, solid and hazardous waste disposal, pesticides use, stream encroachments, tidal wetland disturbances, dam alterations and water diversions in a manner and degree that is protective of the environment and of human health. Further, the Department employs a range of compliance tools, including data tracking and monitoring, facility and site inspection, compliance assistance and administrative enforcement, to verify and enhance the regulated community's understanding of and compliance with environmental requirements and, where needed, to compel compliance.

Enforcement of Significant Environmental Violations

Sound Manufacturing, Inc. Co-Owner Guilty of Illegal Hazardous Waste Disposal

In 1997, the Department became aware of alleged illegal waste disposal activities at Sound Manufacturing, Incorporated's facility in Norwich. Following an investigation by the Department, it was confirmed that lead-bearing sand blasting waste had been buried on site below a newly poured concrete floor. The Department's efforts to persuade the company to remove the material were unsuccessful and, in August 1998, the Department referred the case to the Chief State's Attorney and the Attorney General for enforcement.

A prolonged investigation and a three month criminal trial concluded in New London Superior Court in 2004. Brian Cote, a co-owner of Sound Manufacturing, was found guilty of illegal storage and disposal of hazardous waste and of conspiracy to illegally store and dispose of hazardous waste. Investigators discovered that, in November 1996, Mr. Cote hired a contractor to sandblast lead-based paint from the facility and then, acting with another individual, directed that the resulting hazardous lead-bearing waste be illegally buried below the building floor. Mr. Cote then refused Department requests to remediate the contamination after it was discovered.

Tyco Printed Circuit Group Fined Over $14 Million for Clean Water Act Violations

Significant State and Federal enforcement cases filed against Tyco Printed Circuit Group of Stafford ("Tyco"), a subsidiary of Tyco International, were resolved in August 2004. The cases, which involved numerous violations of the Federal Clean Water Act and Connecticut Water Pollution Control law, were investigated by the Department and EPA's Criminal Investigations Division, and were prosecuted separately in Hartford by the Offices of the U.S Attorney and the Connecticut Attorney General.

The federal action cited numerous Clean Water Act violations at Tyco's Stafford, Staffordville and Manchester facilities between 1999 and 2001, and described a variety of illegal practices that caused the facilities to discharge wastewater with higher than permitted levels of pollutants into municipal sewage treatment systems. Examples of these illegal practices included diluting potentially non-compliant wastewater samples, discarding samples containing excessive levels of toxic metals, and omitting samples that were not in compliance for pH.

Mount Tom State Park, Litchfield

Under a federal plea agreement, Tyco is required to pay a total of $10 million in fines. Of that amount, Tyco is required to pay $6 million as a federal criminal fine, fund $3 million in Supplemental Environmental Projects, and pay $500,000 each to the Towns of Stafford and Manchester to fund improvement in the towns' sewer and water treatment systems. Also in connection with the federal case, a former Tyco employee was sentenced in September 2004 for his role in falsifying reports submitted to the Department. The sentence included 3 years probation, 6 months of home confinement, a $4,000 fine and 150 hours of community service. Two other former Tyco employees were sentenced to probation for their roles in violating the Clean Water Act.

In addition to the federal action, a civil suit was brought against Tyco in Connecticut District Court for numerous violations of State water pollution control law at its three facilities. The violations included illegal bypasses of Tyco's wastewater treatment and monitoring equipment, failure to properly operate and maintain wastewater treatment and monitoring facilities, failure to develop plans for full containment of its hazardous waste storage area and for managing floor spillage, failure to perform required monitoring, and substantially modifying wastewater treatment facilities without obtaining Department approval.

In settlement of the State's allegations, Tyco agreed in August 2004 to pay a $2 million civil penalty, correct all alleged violations, maintain compliance with all statutory, regulatory and permit provisions governing water pollution control law, perform three annual environmental compliance audits to evaluate future compliance, install secure wastewater sampling units to enable discrete sampling by the Department, and perform a $2.4 million flow reduction project in order to reduce the flow of metal bearing wastewaters by 75%.

Environmental Improvements Using Supplemental Environmental Projects

Consistent with the Department's goals to protect and enhance public health and the environment, the Department continues to offer the use of Supplemental Environmental Projects ("SEP") in negotiating enforcement case settlements. As a component of a monetary penalty, an SEP has a deterrent effect on future violations while, at the same time, SEPs produce important benefits to the environment and public health and welfare that otherwise would not be realized. In accordance with the Department's SEP Policy, acceptable types of SEPs include

environmental restoration projects, environmental assessments, pollution prevention projects and pollution reduction and waste minimization projects. The following are examples of recent SEPs that have received funding through Department enforcement actions.

Improvements to the Ecosystem of Long Island Sound

Several SEP funded projects to restore tidal wetlands and provide passage for migratory fish were underway during 2004. Examples of these projects include:

- Rehabilitation of tidal wetlands in the lower Quinnipiac River in New Haven and North Haven to restore critical wetland functions and habitat. The tidal wetlands were originally impaired by mosquito ditches constructed in the early 1900's that were intended to drain the marsh.

- Rehabilitation of Castle Rock Marsh in the Lindsey Cove area of Branford by removing sediment, creating new ponds and restoring tidal flow. The marsh had experienced significant reductions in tidal exchange partly due to anthropogenic sedimentation within the main tidal creek, and invasive phragmites vegetation increased within the marsh causing further degradation.

- Fishway construction at the Trading Cove Brook Dam in Montville to provide passage over a 12' high dam for alewife, blueback herring, and sea-run brown trout.

- Fishway construction in Old Lyme on the north bank of Mill Brook downstream of the Upper Millpond Dam to provide passage for alewife and sea-run brown trout.

Habitat Restored in the Blackledge River

In 2004, the Department oversaw completion of a stream habitat restoration SEP in the lower Blackledge River in Colchester. The river channel had been significantly impacted by large flood events in 1973 and 1982, which caused severe streambank erosion and substantial soil deposition downstream within the Blackledge and Salmon Rivers.

Approximately 440 feet of streambank and river channel were restored utilizing natural stream channel design methods and soil bioengineering techniques. Living plants in combination with other natural materials, such as trees, boulders and rootwads, were used to rapidly revegetate the streambank and redirect river channel flow. The use of natural instream structures along with the creation of 200 feet of deep pools provide an improved habitat for the riverine fish community.

Pollution Prevention & Reduction Projects

Several SEPs designed to prevent or reduce future pollution were agreed to by companies in 2004, in settlement of past environmental violations. Example of these projects include:

- J.T. Slocomb of Glastonbury is undertaking a project to replace its solvent degreaser with a less toxic aqueous parts cleaning system at an estimated cost of nearly $40,000.

- Electro-Flex Heat, Incorporated of Bloomfield has agreed to install an acid regeneration system that is expected to virtually eliminate the company's acid waste stream. The estimated cost of the system is approximately $36,000.

- Winsted Precision Ball agreed to install a closed loop system for non-contact cooling water that will reduce its water usage, and to provide emergency response equipment to the Winsted Fire Department to enhance the Town's capabilities in responding to hazardous materials emergencies. The company also agreed to provide partial funding toward development of a greenway recreational trail in the Town of Winchester. The estimated cost of the SEPs to the company is $120,000.

Targeting Industries with Known High Noncompliance

Auto Recycling Industry Compliance Initiative: The Auto Recycling Industry routinely encounters numerous hazardous and non-hazardous materials including engine oil and other automotive fluids, mercury switches, lead batteries, refrigerants and asbestos. If released to the environment, such materials can significantly impact air, land and water resources and, therefore, need to be properly managed. Throughout FY 2004, the Department has been undertaking a coordinated compliance assistance initiative aimed at improving the environmental compliance of the Auto Recycling Industry. To date, the compliance initiative has consisted of compliance assistance and an education and outreach component that will be followed by a compliance assessment component and, if necessary, an enforcement component.

As part of the compliance assistance effort, the Department developed an environmental compliance guide specifically tailored for the auto recycling industry. The compliance guide was developed in coordination with the Automobile Recyclers Association to ensure that it would meet the information needs of the auto recycling industry. The guide, available at http://www.dep.state.ct.us/enf/autorecyclingguide.pdf, includes items such as a template for a Stormwater Pollution Prevention Plan specific to auto recycling operations and guidance on the proper handling of vehicle fluids.

The Department's compliance education and outreach efforts included a four-part training program hosted by the Department and funded with SEP funds generated from a prior enforcement action against a violating auto recycling facility. Each of the four training sessions focused on different regulatory topics, including hazardous waste identification and determination of operating status, proper management of hazardous waste and used oil, stormwater general permit requirements including development of a Stormwater Pollution Prevention Plan, responding to spills and best management practices for operation of vehicle crushers.

***Golf Course Compliance Initiative*:** In 2004, the Department continued its work on a compliance assurance initiative focused on unauthorized water diversions at golf courses across

Connecticut. Using a broad range of compliance assurance tools including inspection, compliance assistance, permitting, regulation and enforcement, the aim of the initiative was to produce 100 % compliance with water diversion requirements among the golf course sector.

The compliance assistance portion of the initiative began after a 1999 enforcement settlement with Great River Golf Club in Milford. The golf club had diverted waters of the State without a permit required by the Water Diversion Policy Act. In partial settlement of its past violations, the golf club agreed to pay $30,000 to fund a SEP to support water diversion compliance assistance, pollution prevention and water conservation programs. At the time, it was estimated that there were about 100 18-hole golf courses maintaining unauthorized water diversions.

SEP funding was used to provide compliance information and training pertaining to water diversions for irrigation by golf courses in Connecticut. The Department worked with the Institute of Water Resources at the University of Connecticut to develop best management practices for golf course water usage, and the resulting document was presented at a training conference targeted to 18 hole golf course owners, operators and consultants in October 2002.

By 2003, any golf course with an unpermitted diversion was able to come into compliance and avoid enforcement penalties under Public Acts 01-201 and 02-102, provided the golf course documented its water usage by January 23, 2003 and submitted the required diversion permit application by July 1, 2003. Following the amnesty period, there remained four 18-hole golf courses that had not sought the required diversion permits. The Department has issued final consent orders with penalties against two of the noncompliant golf courses, and has initiated enforcement actions against the remaining two noncompliant golf courses.

Strict Compliance for Major Air Sources

Under the Federal Title V program, all major air emission sources are required to have a comprehensive operating permit including, as necessary, a plan to address and resolve all outstanding compliance issues. In calendar year 2000, the Air Management Bureau was at the beginning of its program implementation efforts, and directed its focus on issuing permits for the State's largest emission sources. To ensure successful implementation of the Title V operating program, the Air Bureau sponsored an instructional Title V workshop, posted Title V instructions and guidelines on the Department's website, and utilized an external workgroup to participate in the development of forms for a Title V compliance certification and reporting program.

Because of these efforts, Connecticut currently has completed issuance of nearly all of its Title V permits and has begun working on issuing renewals of some of the original permits. To comply with their permits, Title V sources are required to submit semi-annual monitoring reports and progress reports for required actions under any permitted compliance schedules and to submit annual compliance certifications demonstrating compliance with all terms and conditions of the Title V permit.

Promoting Environmental Stewardship

Goal: Improve environmental quality in the State of Connecticut by fostering communications between the Department and *all* stakeholders; increasing access to information; and providing appropriate outreach and assistance.

Municipal Assistance and Outreach

An important group of stakeholders that have both a direct and indirect impact on environmental quality in Connecticut are our municipalities. Municipalities in Connecticut fall under a wide array of our regulatory programs; in addition, they themselves are responsible for assuring important environmental protections within their own town borders. This year the Department has increased outreach efforts with municipalities to further promote environmental stewardship. Of specific note are:

- ***Aquifer Protection:*** Connecticut's Aquifer Protection Area Program protects major public drinking water supply wells for present and future generations. In early 2004 the Department adopted new Aquifer Protection Regulations to help protect major public water supply wells from contamination. 122 Aquifer Protection Areas will be designated in 83 municipalities around the State. The Department and the municipalities will jointly implement new protective land use controls for the areas. The Department is working with municipalities on several levels to implement protection of these important resources:

  - Municipal contacts have been established for each of the 83 towns to facilitate program coordination and to designate local protection agencies.
  - A local implementation workgroup was formed by the Department in the spring of 2004 to assist in developing model municipal aquifer protection regulations, municipal guidance, and municipal agency training on the program.
  - The Department hosted six regional informational workshops on the program for all municipalities in the fall of 2004. Approximately one hundred people participated in the workshops that prepared them for upcoming program implementation. Department staff provided outreach materials and technical assistance, and talked directly with municipal officials about program issues.
  - A new page was added to the Department web site to make it easy for municipal contacts to electronically access recent information and news regarding the program, and ask specific questions.

Pattaconk Lake, Haddam
Cockaponset State Forest

More information about the Aquifer Protection Area Program is available online at: http://www.dep.state.ct.us/wtr/aquiferprotection/index.htm

- ***Stormwater Management***: Stormwater runoff from non-point sources of pollution and discharges have an adverse impact upon water quality and aquatic habitat. Mitigating sedimentation, erosion, and pollutants associated with stormwater runoff from impervious areas is one of the greatest challenges facing the Department today.

  o *Municipal Separate Storm Sewer Systems ("MS4s")* - With a focus on assistance regarding the requirements of the 2004 issued General Permit for the Discharge of Stormwater from small MS4s, this year the Department conducted over 50 stormwater presentations and workshops specifically aimed at municipal stakeholders. This is in addition to numerous individual meetings with municipal staff (town planners, public works, etc.). The Department also partnered with The Connecticut Conference of Municipalities on outreach for the MS4 program.

Outreach and Assistance Activities Summary

- 121 Education Seminars and Workshops - reaching approximately 4000 individuals;
- Inland Wetland Commissioners training for 96 municipalities;
- Comprehensive Guidebook developed for small businesses including:
  - Motor Vehicle Services
  - Garment Care Industry
  - Auto Recycling Industry
- Information line responding to over 1700 requests for assistance;
- Published newsletters on:
  - Pollution Prevention - "*P2 View,"* reaching over 2000 individuals; and
  - "*Managing Environmental Compliance,"* reaching over 1000 individuals.
- Comprehensive environmental assistance web pages resulting in over a quarter of a million hits.

  o *2004 Connecticut Stormwater Quality Manual* – This year the Department released a stormwater quality manual that provides guidance on the measures necessary to protect the waters of the State of Connecticut from the adverse impacts of post-construction stormwater runoff. The manual focuses on site planning, pollution prevention, and stormwater treatment practices. It is intended for use as a planning tool and design guidance document by both the regulated and the regulatory communities involved in stormwater quality management. The manual is available for download on the Internet at www.dep.state.ct.us/wtr/stormwater/strmwtrman.htm. Hard copies are currently being distributed to each municipality. Training sessions are planned for the spring of 2005.

  More information about the Stormwater Management Program is available online at: http://www.dep.state.ct.us/wtr/stormwater/stormwtrindex.htm

- ***Urban Communities*:** The Department continues to be committed to assistance and innovation strategies that will help environmental justice communities. This year work under taken as a part of an EPA Environmental Justice grant allowed the Department to involve five urban communities in improving the public participation process for permitting programs in environmental justice communities.

  Under this grant work, a review team was created to assess the existing procedures and develop a model multicultural public participation plan. The review team, consisting of Department staff, community representatives and a contractor, coordinated the project and trained the community representatives to evaluate existing processes and gather input from their constituents. The community groups included the East End Community Council, Inc.(Bridgeport), Christian Community Action, Inc. (New Haven), ONE/CHANE, Inc. (Hartford), Connecticut Parents United for a Lead Safe Environment (CTPULSE-Hartford), and New Opportunities, Inc. (Waterbury). Representatives of the community groups were trained on the Department's permitting programs, notification and public participation procedures and the adjudication process using a curriculum developed by the contractor. Each community group was then provided with funds to conduct training workshops in their communities using the same curriculum. Approximately 100 residents attended the training workshops and also provided recommendations on how the Department can improve its public participation process. The Department continues to work with the team and regulated community towards implementation. Some of the areas for improvement recommended by the residents and community groups include:

  - *Legal notice process* - increase print size, reduce technical language, make notice easier to locate in newspaper, place in local papers in appropriate languages.
  - *Additional community notification procedures* - mailings to applicable community groups and affected households, posting notices at proposed location of activity, local libraries and public access television, provide more detail on specific permit applications, make copies of permit applications more easily available.
  - *Provide easy to understand guidance* on the permitting and public participation processes and provide to community groups, municipal offices and post on Department web site.
  - *Develop consistent procedures and criteria* for Department staff to follow when preparing public notices and reviewing the applicant's community notification plan.

Collaborative Effort Results in Permit With Minimal Environmental Impact

The Department issued a water diversion permit to the Avon Water Company in April 2004 in connection with the Water Company's construction of a new public water supply well at the Fisher Meadows well field in Avon. This well will provide up to three million gallons of water per day to supply drinking water for the next 50 years to the citizens of Avon, as well as small areas of Simsbury and Farmington.

The applicant and Department staff were able to develop and issue a permit for an important water allocation with minimal environmental impacts while meeting the needs and addressing the concerns of the applicant, the Department, concerned citizens and neighbors. This permitting process demonstrates the result of cooperation and collaboration between an applicant and the Department and serves as a blueprint for a successful process. The following factors were keys to this success.

- The applicant was cooperative and committed to meeting environmental standards to protect the area in which its proposed well would be constructed.
- The applicant sought early coordination with the Department through a series of pre-application meetings over a number of years prior to the submission of its application and conducted additional or new environmental tests and assessments as advised and directed by Department staff.
- As a result of an in-stream flow study of the Farmington River, part of the Farmington River Wild and Scenic Study, the Department had information available regarding the flow parameters of the River for the protection of in-stream aquatic habitat.
- The applicant sought public input, holding three informational meetings in the Town of Avon with the public and Department staff. The applicant listened to the concerns of the public and accommodated many of their suggestions and requests.
- The applicant developed a park-like design for the well and pump house.
- The permit included additional conditions to address the public's concerns for the continued maintenance of the monitoring wells that were installed to ensure safe water levels.
- A public hearing was held in Avon at the beginning of the adjudicatory hearing process to provide the public with a chance to make comments on the application for the administrative hearing record.
- The applicant presented extensive and clear evidence to demonstrate that its application was complete and met the applicable statutory and regulatory criteria for issuance.

The water diversion permit incorporates conditions that were the result of environmental testing, site assessment and planning, extensive river and watershed data and investigation, and includes conditions to address public concerns and comments. This allocation of water for a new public water supply well with minimal environmental impacts reflects a responsible plan to satisfy the present and future needs of three growing communities.

Appendix A

Summary of Enforcement Statistics
FiveYear Average 2000-2004

Water Management Bureau

Program Activity	2000 FY	2001 FY	2002 FY	2003 FY	2004 FY	Five Year Average
Warning Notices						
Notices of Violations	356	347	384	259	**228**	315
Orders	41	50	45	42	**21**	40
Referrals(AG/EPA/CSA)	14	10	6	6	**3**	8

Air Management Bureau

Program Activity	2000 FY	2001 FY	2002 FY	2003 FY	2004 FY	Five Year Average
Warning Notices						
Notices of Violations	292	218	233	134	**262**	228
Orders	48	40	88	111	**58**	69
Referrals(AG/EPA/CSA)	6	4	1	5	**17**	7

Waste Management Bureau

Program Activity	2000 FY	2001 FY	2002 FY	2003 FY	2004 FY	Five Year Average
Warning Notices	24	20	5	1	**2**	10
Notices of Violations	524	490	384	355	**265**	404
Orders	127	112	103	66	**72**	96
Referrals(AG/EPA/CSA)	38	35	28	34	**21**	31

Department-Wide Five Year Average 2000-2004

Activity	2000* FY	2001* FY	2002* FY	2003* FY	2004* FY	Five Year Average
Referrals(AG/EPA/CSA)	63	53	35	45	**41**	47
Orders	230	215	244	236	**160**	217
Notices of Violation	1258	1100	1073	782	**778**	988
Total Enforcement Actions**	1551	1366	1352	1063	**979**	1253

*Including the Office of Long Island Sound Programs
**Does not include Warning Notices

Enforcement Statistics - FY 2004

(October 1, 2003-September 30, 2004)

Actions	Air Management Bureau	Water Management Bureau	Waste[3] Management Bureau	Office of Long Island Sound Programs	Total for Year (10/01/03-9/30/04)
Warning Notices Issued under CGS 22a-6s	N/A	N/A	2	N/A	2
Notices of Violation Issued	262	228	265	23	778
Consent Orders Issued	58 [1]	17	59[2]	9	143
Administrative Penalties Assessed (# cases)	$125,523(17)	$341,015(8)	$461,605(44)	$62,000(7)	$990,143(76)
Supplemental Environmental Projects (# cases)	$157,000(2)	$322,350(6)	$390,940(10)	$23,500(3)	$893,790(21)
Unilateral Orders Issued	0	4	13	0	17
Attorney General Referrals	12	3	10	0	25
Judicial Settlements					
Penalties	$105,500	$2,141,000	$4,121,297	$0	$6,367,797
Supplemental Environmental Projects	$1,170,000	$2,487,000	$183,000	$0	$3,840,000
Chief State's Attorney Referrals	1	0	0	0	1
Referrals to EPA	4	0	11	0	15
Inspections Conducted	4663[4]	1236	1250	196	7345

[1] Includes 28 Trading Orders and 10 expedited consent orders to address non-compliance with Stage II testing requirements.

[2] Includes 17 expedited consent orders to address UST non-compliance

[3] Includes the Remediation Division which was previously part of the Water Management Bureau

[4] 2263 of the 4663 inspections were Stage II inspections conducted by the Department of Consumer Protection under contract with the Department

Compliance Profiles by Industry Sector or Facility Type

The following tables depict compliance rates for particular industry sectors. An enforcement action is initiated by the issuance of an informal Notice of Violation ("NOV") or a Unilateral Order, Consent Order or Attorney General Referral. Multiple actions issued for the same case (i.e. a consent order issued following issuance of a NOV) are not counted as they will produce a higher rate of non-compliance than actually exists. Unless otherwise noted, the rate of compliance for each category was calculated as follows:

$$\% \text{ Compliance} = 100 - \frac{\#\ \text{enforcement cases initiated}}{\#\ \text{facilities inspected}} \times 100$$

Water Management Bureau

Inspection Category	# of Facilities	Annual Compliance Inspections Projected FFY04	Actual Inspections FFY04	%Facilities in Compliance based on inspections*	%Facilities in Compliance based on DMR review (not in SNC)
NPDES Industrial Majors	42	41	39	92%*	90%**
NPDES Sewage Treatment Plant (STP) - Majors	67	67	62	95%*	93%**
Pretreatment SIU-Significant Industrial Users	212	170	185	85%*	Not Available
NPDES Industrial-Minors	50	6	28	97%*	Not Available
NPDES- STP-Minors	32	3	19	95%*	Not Available
Stormwater	NA	NA	247	72%***	Not Available

* Based on whether a NOV was issued from the annual compliance inspection.
** Only NPDES majors are entered in PCS-SNC numbers can only be generated for these categories.
***68 NOV's were issued for stormwater violations. Many of the stormwater inspections are initiated by complaints regarding erosion problems at construction sites.

Air Management Bureau

Compliance & Field Operations Division

The Compliance & Field Operations Division conducts source surveillance using various techniques, including on-site inspections report reviews and record requests. The following table depicts compliance monitoring activity and compliance rates tracked by the Bureau of Air Management for key facility categories or industry sectors.

Facility/ Inspection Category	Reports Reviewed FFY 04[1]	Inspections Projected FFY 04	Inspections Conducted FFY 04	# of Facilities in Category	# of Facilities w/ Non-Compliance	Compliance Rate[5]	# of Facilities w/ Significant Non-Compliance (SNC)[6]	SNC Rate
Title V Sources	129	67	70	111[2]	23	79%	8	7%
General Permit to Limit Potential to Emit	254	84	90	391[2]	58	85%	2	0.5%
Minor Sources	40	150	167	1500	35	98%	4	0.3%
Stage II		1400[3]	2966[3]	1600	629[4]	61%	16	1%
Complaints		500	518					
Other (Enforcement follow-up inspections, routine investigations)		100	475					

Footnotes:

1. Includes quarterly Continuous Emissions Monitoring reports, semi-annual monitoring reports and compliance certifications.
2. Number of facilities in category means both those who have applied and those who have received permits under the applicable program.
3. Summation of Department of Consumer Protection (DCP) and DEP inspections.
4. Violations comprise DCP red tags, DCP repair orders (multiple repair orders issued to the same station on the same day are counted as a single violation), and NOVs.
5. Compliance Rate Calculation

$$Compliance\ Rate = \left[\frac{\#\ of\ \ facilities\ in\ category - \#\ of\ \ facilities\ w/\ non{-}compliance}{\#\ of\ \ facilities\ in\ category} \right] \times 100$$

6. SNC is defined as follows:

   (a) For Title V, General Permit to Limit Potential to Emit and Minor Sources, SNC means the facility was either a State of Connecticut Definitive HPV or Federal HPV during FFY 2004.
   (b) For Stage II facilities, SNC means there was either an actual failure of the vapor recovery equipment or a failure to demonstrate that the facility was maintaining a properly operating vapor recovery system.

   SNC is calculated as follows:

$$Non-Compliance\ Rate = \left[\frac{\#\ of\ \ facilities\ \ w/\ SNC}{\#\ of\ \ facilities\ \ in\ \ category} \right] \times 100$$

Radiation Division

# of Facilities	# of Inspections	Inspection Rate[1]	NOVs Issued	Compliance Rate[2]
3,641	464	12.7%	30	93.5%

1. Inspection Rate Calculation:

$$Inspection\ Rate = \left[\frac{\#\ of\ \ facilitie\ inspected}{\#\ of\ \ facilities} \right] \times 100$$

2. Compliance Rate Calculation

$$Compliance\ \ Rate = \left[\frac{\#\ of\ \ inspections - \#\ of\ \ NOVs\ \ Issued}{\#\ of\ \ inspections} \right] \times 100$$

Waste Management Bureau

Pesticides Program

Inspection Category	Inspections Projected FFY 05	Inspections Conducted FFY 04	# of Facilities By Category if Applicable	# of Enforcement Cases Initiated in FFY 04	% Inspected Facilities in Compliance
Agricultural Use & Complaint Follow-Up	22	20	N/A	4	80%
Non-Agricultural Complaint/Concern Follow-Up & use investigation	60	53	N/A	30	43%
Producer Establishment	5	4	N/A	0	100%
Market Place	75	86	N/A	20	77%
Certified Applicator Records	100	115	N/A	25	78%
Restricted Use Dealers	10	15	N/A	0	100%

PCB Program

Inspection Category	Inspections Projected FFY 04	Inspections Conducted FFY 04	# of Facilities By Category	# of Enforcement Cases Initiated in FFY 04	% Inspected Facilities in Compliance
Referrals	10-15	9	N/A	4	55%
Complaints	12-17	11	N/A	7	36%
Clean-up Sites	8-13	14	N/A	2	86%
Other Neutral Scheme	10-15	12	N/A	0	100%

UST Enforcement Program

Inspection Category	Inspections Projected FFY 04	Inspections Conducted FFY 04	# of Facilities By Category if applicable	# of Enforcement Cases Initiated in FFY 04	% Inspected Facilities in Compliance
98 Deadline Target List/Complaints	150	249	N/A	69	94%/68%*

94% are compliant with the 1998 federal deadline for closure of antiquated tank systems; 68% are compliant with leak detection/operational requirements

Waste Engineering & Enforcement Division

Inspection Category	Inspections Projected FFY 04	Inspections Conducted FFY 04	Total # Facilities by category	# of NOVs FFY 04 (1)	% inspected facilities in compliance	# of inspections with SNC (1)	% of SNC Non-compliance
Treatment Storage Facility	5	9	160	3	67%	0	0%
Large Quantity Generator	75	93	461	36	61%	11	12%
Small Quantity Generator	20	36	1733	29	20%	8	22%
Transporter	5	6	261	3	50%	1	17%
Volume Reduction Facility	20	21	31	1	95%	1	5%
Resource Recovery Facility	8	7	7	0	100%	0	0%
Transfer Station	44	40	126	5	87%	0	0%
Landfill	50	41	44	2	95%	2	5%

(1) Does not include NOV's resulting from complaint investigations.

SNC (Significant Non-Compliance) - The violator/violation is significant enough to require a formal enforcement response. In addition to assessing compliance rate based upon Significant Non-compliance as defined by the Environmental Protection Agency. This rate is indicative of violations that the Waste Bureau has determined require formal enforcement action in accordance with the Department's Enforcement Response Policy.

Appendix B

Permitting

In accordance with Section 22a-6r of the Connecticut General Statutes, the following section provides information on permit applications received, permit decisions, and permit application fee revenues.

DEP Permit Application Summary Data

The following tables summarize application and permit activity, as recorded in the Permit Application Management System (PAMS), ***[for the federal fiscal year (FFY = October 1, 2003 through September 30, 2004).]***

State Fiscal Year 03/04 Statistics

Bureau		Applications Received	Permits Issued	Applications Closed[1]	Applications Pending (As of 06/30/04)
Air	General Permits	61	134	212	20
	Individual	117	131	156	164
	Short Process	49	34	36	39
Office of Long Island Sound Programs	General Permits	42	33	40	16
	Individual	139	96	114	246
	COP[2]	182	151	169	33
Water	General Permits	1852	1768	1798	221
	Individual	377	181	247	784
Waste	General Permits	36	28	38	30
	Individual	36	23	30	125
	Short Process	801	748	818	67
All DEP	General Permits	**1991**	**1963**	**2088**	**287**
	Individual	**669**	**431**	**547**	**1319**
	Short Process	**1032**	**933**	**1023**	**139**
	Totals All Apps	**3692**	**3327**	**3658**	**1745**

[1] Applications Closed represents the total number of applications that were closed including: permits issued; applications that were withdrawn, rejected for insufficiency, or denied on the technical merits of the application; and applications that were received but no permit was required.
[2] COP = Certificate of Permission

Federal Fiscal Year 03/04 Statistics

Bureau		Applications Received	Permits Issued	Applications Closed[3]	Applications Pending (As of 09/30/04)
Air	General Permits	71	88	114	20
	Individual	112	141	159	144
	Short Process	44	43	46	21
Office of Long Island Sound Programs	General Permits	39	29	35	18
	Individual	147	99	117	255
	COP[4]	185	169	184	32
Water	General Permits	1096	1315	1346	244
	Individual	312	180	253	770
Waste	General Permits	31	22	30	30
	Individual	42	95	28	131
	Short Process	804	664	782	64
All DEP	General Permits	**1237**	**1454**	**1525**	**312**
	Individual	**613**	**515**	**557**	**1300**
	Short Process	**1033**	**876**	**1012**	**117**
	Totals All Apps	**2883**	**2845**	**3094**	**1729**

[3] Applications Closed represents the total number of applications that were closed including: permits issued; applications that were withdrawn, rejected for insufficiency, or denied on the technical merits of the application; and applications that were received but no permit was required.
[4] COP = Certificate of Permission

Average Processing Times[5]

Average Time in Days							
Bureau	**Sufficiency Decision**	**Sufficiency After Notice of Insufficiency**	**Tentative Determination** (N.B.: this statistic only includes individual permit applications)	**Issue Permit DEP Time**	**Issue Permit Total Time**	**Close Application DEP Time**	**Close Application Total Time**
Air	71	22	527	281	332	345	433
OLISP	82	54	55	62	97	96	144
Water	40	13	342	51	65	80	100
Waste	31	31	447	41	49	56	71
All DEP[6]	**46**	**29**	**195**	**70**	**87**	**104**	**133**

Timeliness

Bureau	On Schedule (vs. Plan)	On Schedule (vs. Revised)
Air	**84%**	**92%**
OLISP	**58%**	**85%**
Water	**88%**	**92%**
Waste	**92%**	**99%**
All DEP	**84%**	**92%**

[5] Average Processing Times are based on the state fiscal year period - July 1, 2003 through June 30, 2004
[6] All DEP Averages are weighted averages

Permit Related Revenue Information

CGS Section 22a-6r states the Commissioner shall report on the revenues received from permit application fees and any revenues derived from the processing of such applications as set forth in Chapter 439 of the General Statutes; the Department's appropriation from the general fund for permitting activities; and the number and amount of permit application fees refunded.

Revenues Received from Permit Application Fees and Any Revenues Derived from the Processing of Such Applications[7]	
07/01/2003 - 06/30/2004	**$1,991,494**

General Fund Appropriation[8]	
07/01/2003 - 06/30/2004	**$902,482**

Amount of Permit Application Fees Refunded[9]
$26,025

[7] This amount represents application fees due with the submission of the application and subsequent permit issuance fees. The amount does not include annual fees and other registration fees such as medical and industrial X-ray, pesticide registrations, USTs, property transfer, LEP, etc.
[8] There is no specific state budget appropriation for department permit programs. This figure reflects actual expenses, drawn from the general fund, for Air, Water, and Waste permitting and enforcement staff.
[9] Refunds reflect withdrawn applications and instances where submitted fees are in excess of required fees.