



State of Connecticut
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127
<http://www.ct.gov/dep>

Protecting and Restoring Our Environment

Annual Report 2006

Gina McCarthy
Commissioner



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Cover Photograph: Harkness
Memorial State Park, Waterford

Introduction

The Department of Environmental Protection (“Department”) is pleased to present its Annual Report for 2006. While the mission of the Department remains the same, the leadership of Commissioner Gina McCarthy is bringing a sharper focus on the Department’s efforts to protect and preserve the environment and the natural resources of the state. The Department is also working closer with and seeking broader input from its constituents.

The 2006 Report is divided into two main sections. The first section highlights the Department’s accomplishments and progress within the following four major initiatives identified in 2005:

No Child Left Inside

Designed to encourage the public, families and children- including those from urban areas – to enjoy the outdoors by taking advantage of the recreational opportunities our state parks have to offer. This effort is also aimed at building the next generation of environmental stewards.

Landscape Stewardship

Promotes sustainable development practices by coordinating DEP programs that affect land use and development. Focuses on the agency’s efforts to improve support for municipalities, land trusts and others who face complex land use decisions.

Making “Doing the Right Thing” the “Path of Least Resistance”

Looks within the agency to achieve regulatory compliance and focuses on environmental outcomes for those we regulate to make compliance the “Path of Least Resistance.” Components to this theme include a strong enforcement presence, outreach programs and environmental justice initiatives.

“I have seen the Enemy and It is I” - Pogo

Focuses attention on the impacts associated with non-traditional sources of pollution – cars, electronic equipment, etc. and efforts to reduce greenhouse gas emissions and increase energy efficiency. This initiative addresses a wide

range of issues from transportation and recycling to toxins in consumer products.

The second section of the report features performance measures to benchmark the Department's progress towards achieving its long-term environmental goals of clean water, clean air and clean lands and protection and enhancement of natural resources and habitats. Performance reporting focuses on changes in environmental conditions flowing from the efforts of the Department and its many partners. An example of a changed environmental condition is an increase in the number of river miles supporting aquatic life, as defined in the State's water quality standards. Performance reporting also includes outcomes and output or activity measures. Reduced air emission levels from industrial sources and higher compliance rates with water discharge limits are examples of outcome-focused reporting.

I. Agency Themes

No Child Left Inside

No Child Left Inside is a major state initiative designed to reconnect families with the outdoors, build the next generation of environmental stewards and showcase Connecticut's state parks and forests.

Introduced in 2006 by Connecticut Governor M. Jodi Rell, and coordinated by the Department, the initiative provides the incentive youngsters and their parents need to turn off their computers, cell phones, and video games and go outside.

Many youngsters are caught up in the dramatic increase in organized sports and activities with little time for free leisure play while others may face constraints on their ability to enjoy unstructured play outdoors because of the potential for danger and violence in the neighborhoods where they live.



No matter what the reason, spending more time indoors and less time outdoors in unstructured play is taking a dramatic toll on the health and development of young people.

No Child Left Inside is much more than fun and games. It addresses serious issues facing our state parks, the health and well being of our youngsters and the future of our environment.

State Parks

A study of the recreational activities and preferences of Connecticut residents called [*Connecticut's Statewide Comprehensive Outdoor Recreation Plan \("SCORP"\)*](#) was conducted by the Department in 2004. The survey found that only 50 percent of Connecticut households visit state parks each year. The survey also revealed that 36.3% of those who do not use the parks said they did not visit because they are not aware of what the parks have to offer and 27.3% of those surveyed did not know the location of facilities.

No Child Left Inside seeks to turn these numbers around. The initiative provides a framework to build a constituency that will support a strong state park system. The initiative promotes the fact that Connecticut's network of 137 state parks and forests offer:

- Safe, convenient, and fun places for families to spend time;
- Recreational, cultural, and historical opportunities within a short 15-minute car ride from anyone's home; and
- Ideal venues for youngsters and families to develop an appreciation for Connecticut's forests, rivers, beaches and wildlife.

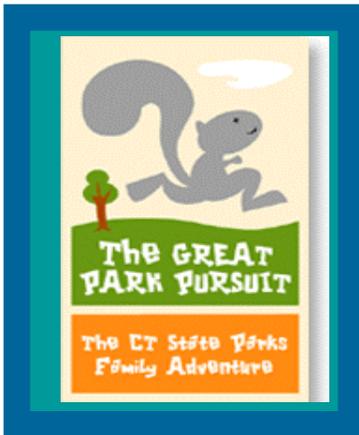
Through *No Child Left Inside* youngsters are again having fun and benefiting from time outdoors. They are reconnecting with nature, themselves, their peers and their families in new and healthy ways that will build stronger and more capable adults.

National Attention for Connecticut's No Child Left Inside Initiative

No Child Left Inside has attracted national and regional attention, generating numerous media stories. The Department has sent representatives to speak at conferences in other states and before federal agencies whose responsibility is for national parks and wildlife. After hearing about Connecticut's efforts, Massachusetts and New Hampshire decided to initiate their own *No Child Left Inside* campaigns.

The Great Park Pursuit

One of the key programs in the *No Child Left Inside* initiative is *The Great Park Pursuit, The Connecticut State Parks Family Adventure*. This adventure contest is specifically designed to introduce families to our state parks and forests. *The Great Park Pursuit* is a multi-week game that takes families on an interactive competition in Connecticut's parks and forests. By decoding clues, the game allows families to experience different parks and forests and participate in a wide variety of activities tied to either recreational offerings or historical significance found in the park system.



In 2006, more than 400 families accepted *The Great Park Pursuit* challenge to register online and then visit different state parks and forests over an eight-week period.

The contest consisted of "guided" events on five Saturday's, staffed and supervised by Department volunteers. The other three weeks were "self guided" events, where families went hiking or found a letterbox on their own.

At the "guided" events, teams participated in over a dozen activities, including everything from scavenger hunts, sack races, bird olympics, hiking, sand sculptures, fishing, arts & crafts, and more. At each "guided" location, teams were given clues to the location of the following week's park or forest. Clues were also available online at: www.nochildleftinside.org Teams were awarded points for participation at each park or forest location.

By the end of the eight-week period, 100 families had visited all eight parks. These families competed in a series of friendly competitions at Ft. Trumbull State Park, New London. Grand prize winners were selected based on the results of an exciting "slingshot" competition from the top of the historic fort.

The first place team, "The Bernard Family" of Hartford, shown above in the photograph, chose



the “camping” package for their prize. Second place winners chose a “hiking” package and third place winners chose a “kayaking” package. Top prizes were donated to the game by North Cove Outfitters of Old Saybrook. Flashlights and personal floatation devices were also given as prizes. Anthem donated water and trail mix each week to participants.

No Child Left Inside: Additional Programs

- ***Urban Fishing***

No Child Left Inside seeks to make an outdoor experience readily available to all residents of Connecticut. In keeping with this objective, the Department expanded opportunities for families in the state’s cities to spend time outside fishing. These additional opportunities complement the Department’s successful twenty year family fishing program. (See *Department Continues Successful Family Fishing Program*).

The Department added additional urban locations to its fish-stocking program – which put more than 700,000 trout in 97 lakes and ponds and 201 rivers and streams throughout Connecticut for the 2006 fishing season. The urban ponds stocked by the Department included Bunnells Pond, Bridgeport, Baummers Pond, Naugatuck, Fountain Lake, Ansonia/Seymour, and Valley Falls Pond, Vernon.

In addition, the Department designated two urban locations as Trout Parks – Black Rock State Park, Watertown and Wharton Brook State Park, Wallingford. Trout Parks are areas specially managed to enhance fishing opportunities for families and novice anglers. The areas are stocked more frequently to help ensure that fishing is successful.

- ***Park and Forest Interpreters***

Visits to Connecticut’s state parks and forests were made even more rewarding and enriching in the summer of 2006 with the addition of 10 people to the Department’s staff of interpreters for both shoreline and inland recreational facilities. With this additional staff, the Department has a total of 47 seasonal park interpreters. These interpreters served as guides to the park and provided educational and recreational programs for park visitors.

- ***Park Passes for Foster Families***

In 2006, Bank of America donated \$10,000 to the Connecticut Association of Foster and Adoptive Parents (“CAFAP”) to offer passes to foster families in the state. CAFAP purchased the passes from the Department and provided them to foster families. The park passes provide free admission to state parks where parking fees are charged. Bank of America’s donation provided state park passes to more than 1,300 of the 2,500 foster families in Connecticut.

- ***State Park Passes at Libraries***

Through a partnership with the Connecticut Library Consortium, the Department provided public libraries across the state with a Connecticut State Park & Forest day pass and a copy of the book, “The Shared Landscape: A Guide & History of Connecticut’s State Parks and Forests.” Library patrons planning to visit a state park or forest were able to borrow the book and the pass to use it for free parking at the major state parks where parking fees are charged. The pass was also good for admission to any museum located at a state park.

- ***Traveling Exhibit***

The Department organized a traveling exhibit – “Connecticut State Parks: Like Something Out of A Storybook” – for use at libraries and other events around the state in the summer of 2006. The exhibit highlighted classic children's literature that related to activities in Connecticut’s state parks.

- ***Reading Contest***

The Department partnered with the CT Library Consortium on their Collaborative Summer Library Program: **Paws, Claws, Scales and Tales** and **Read! America: This Land Is Your Land**. Each week throughout the summer, interpreters at state parks and forests conducted programs and activities that tied in with summer reading material available at public libraries.

- **Environmental Education**

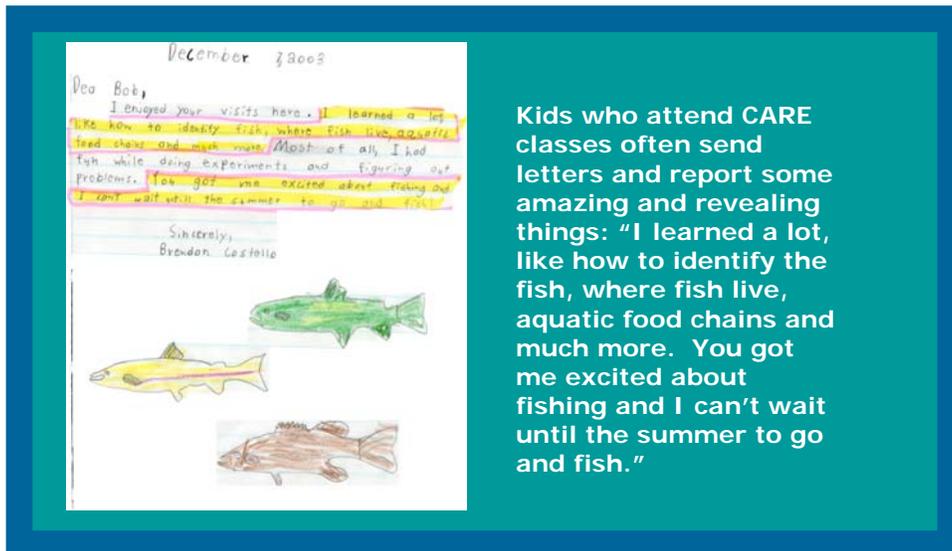
The Department co-sponsored the Connecticut Outdoor and Environmental Education Association's conference *No Child Left Inside* in March, 2006 at Quinnipiac University, Hamden, Connecticut. Commissioner Gina McCarthy spoke and the keynote speech was given by Richard Louv, author of "Last Child in the Woods: Saving Our Children from Nature Deficit Disorder."

Department Continues Successful Family Fishing Program

Connecticut Aquatic Resources Education ("CARE") is celebrating two decades of family fishing. The program is comprised of free classes and outdoor workshops that foster resource stewardship, promote an understanding of aquatic systems and fishery management decisions and encourage both an understanding and utilization of aquatic resources.

CARE's finest offerings are *Family Fishing* courses that include *Hooked On Fishing Not On Drugs®* lessons. *City Fishing* classes have reached 20,000 kids in summer camps with interactive lessons on water quality and pollution.

Over 500 Certified Instructors are part of a team of 2,000 volunteers who have contributed time worth more than \$2 million to the Department over 20 years. CARE Instructors have scheduled over 50,000 activities for 130,000 students. In addition, over 6 million people have viewed the Department's displays at shows, expos and fairs.



Kids who attend CARE classes often send letters and report some amazing and revealing things: "I learned a lot, like how to identify the fish, where fish live, aquatic food chains and much more. You got me excited about fishing and I can't wait until the summer to go and fish."

In 2006, CARE Instructors taught 5,000 citizens about water, fish and fishing. Classes were taught in every major city and most towns across the State. Celebrations around Opening Day of trout season in April and the Family Ice Fishing Derby in January are now annual events anticipated by families across Connecticut. New this year is the creation of a new *Family Fishing Day* to be held on May 12, 2007. This will be part of the "No Child Left Inside" initiative and events in Bridgeport will be included in the *Great Park Pursuit*.



Thousands of hearty New Englanders have attended CARE ice fishing classes and gone ice fishing at our annual Family Ice Fishing Derby in Coventry.

Landscape Stewardship

Poorly planned, high impact development in Connecticut fragments the landscape, consumes our precious natural resources, wastes energy, pollutes air and water, overwhelms our limited capacity to provide infrastructure, and changes forever the character of our communities and the State. Taking action to encourage and promote informed land use, development and conservation decisions is one of our most important environmental challenges.

Recognizing the significant need to embrace sound growth principles, on October 6, 2006 Governor M. Jodi Rell issued Executive Order 15 creating an Office of Responsible Growth within the Office of Policy and Management (“OPM”). The Governor’s initiative dovetails with the Department’s on-going Landscape Stewardship Initiative (“LSI”), which is a broad ranging effort with several major action areas. These include the following:

- Improving coordination between and focus of departmental plans and programs that influence land development and management;
- Coordinating with municipalities, land trusts, developers and other stakeholders to foster environmental awareness in land use decision-making;
- Continuing to identify, acquire, conserve and manage lands in a manner that protects the state’s biodiversity and improves and protects Connecticut’s natural resources and environment for present and future generations;
- Working to build a public constituency that understands the need for and supports sound land use decisions that protect the integrity of Connecticut’s diverse ecosystems.

All of this is being done with the goal of improving the understanding and connection people have with Connecticut’s diverse landscape of ridgelines and rivers, shorelines and wetlands, forests and fields that shape our cities and towns and are essential to the very identity of the places we live.

Perhaps most important to the success of this effort will be the active engagement of municipal officials and volunteers who work to preserve the unique character of their communities in the face of difficult land use decisions. The Department will continue to involve outside interests in this initiative including federal, state and local officials, regional planning organizations, private developers, non-governmental organizations and interested local citizens. To that end, the Department has established a committee of diverse stakeholders to help guide the Landscape Stewardship Initiative. For more information on the Department's Landscape Stewardship activities please go to <http://www.ct.gov/dep/landscapestewardship>.

Conserving Grassland Habitat

As part of the LSI, the Department in October 2006 embarked on a new effort to conserve grassland habitat in order to protect critical nesting and breeding grounds for birds and other species. This effort was selected as the first major statewide action to be addressed under [Connecticut's Comprehensive Wildlife Conservation Strategy \("CWCS"\)](#), which is a federally approved and funded strategy for wildlife management and conservation projects. Grassland is one of the priority habitats identified in this strategy because it provides habitat for eighty bird species in our state, thirteen of which are listed under the Connecticut Endangered Species Act, and several mammal, herptile (reptile and amphibian), and many invertebrate species.

Through Connecticut's Open Space Program, the Farmland Preservation Act, and the Community Investment Act a solid framework has been established for protecting and preserving natural resources and the beauty of Connecticut as well as the species that depend on these habitats. The Grassland Habitat Conservation Initiative strengthens efforts to achieve these objectives with a specific focus on a vital habitat which is in decline throughout the state, especially in the Connecticut River Valley, from the Hartford area north to the Massachusetts state line, where most of the prime habitat is located. This valley is the primary migratory corridor for grassland bird species that return each spring to breed and rear their young. These lands are also under intense land development pressure.

In support of the Grassland Habitat Conservation Initiative, the Department has committed \$3.2 million for the acquisition of grassland habitat and has set aside an additional \$4.5 million for future acquisitions. The objectives of the initiative are to:

- Complete a statewide survey to identify the location and quality of existing grasslands and lands suitable to create grasslands
- Establish a statewide goal for the number of acres of grassland habitat necessary to maintain a diverse population of grassland bird species throughout the state
- Expand efforts to acquire and/or protect grasslands in order to reduce the number of state threatened and endangered grassland bird species
- Make acquisition of wildlife habitat a key priority in the revision of the Department's Open Space Acquisition Plan
- Expand efforts to create partnerships and improve the dissemination of information among state and local official and landowners

Conservation actions to address grassland decline will be coordinated with key partners including the U.S. Fish and Wildlife Service, U.S. Department of Agriculture, Natural Resources Conservation Service, other state agencies including the Departments of Agriculture, Economic and Community Development, and Transportation, the Office of Policy and Management, CT Audubon, Audubon CT, CT Ornithological Association, The Nature Conservancy, CT Farmland Trust, CT Farm Bureau, Working Lands Alliance, Trust for Public Land, The Wildlife Management Institute, sportsmen's conservation organizations, and municipalities.

A Leadership/Policy Committee comprised of state agency heads or their designees will help provide direction to agency staff, foster support for the initiative, and assure a coordinated effort. A technical working group made up of state, federal and local agencies, landowners, academia, agricultural interests and open space advocates will enhance communication and the exchange of information that will help target future acquisitions.

Addressing the Needs of Connecticut's Forested Lands

In Connecticut, the eradication of the forest in favor of agriculture and commerce began with the arrival of the first European settlers and peaked around 1860. Now, 150 years after the forests of Connecticut hit bottom and began their long climb back, our forests cover nearly 60% of the state, are nearing maturity and are healthy. However, the pressures of a burgeoning Connecticut society are now again wearing on the forests of Connecticut and pose a threat to not only the forest products industry, but also the ecology of the forest and its contribution to a myriad of landscape values.

We have a responsibility to soundly use and manage the forests we live in, to reduce pressure on third world forests that often bear the burden of our demands, and to provide a clean, healthy environment for future generations.

The [Connecticut Statewide Forest Resource Plan, 2004-2013](#) ("SFRP"), published in 2005, issued a challenge to all interested stakeholders to work in conformance with the plan: to form a unified environmental voice, to create a growing and moving force under different flags, and to leave a better forestland for those who will follow us.

The SFRP serves as an overview and a means to coordinate future activities within all segments of Connecticut's forest community. The plan discusses issues and actions identified by various stakeholders regarding the State's forestlands and groups them within eight different subject areas. Those subject areas are as follows: Forest Ecosystem Health; Sustainable Forest Based Economy; Public Forest Stewardship; Private Forest Stewardship; Education and Outreach; Recreation; Research and Planning and Policy. These issues and actions provide direction for applying available state and federal funding and the resources of participating groups and individuals.

In 2006, the Department facilitated the establishment of a statewide Connecticut Forestland Council ("CFC") and eight committees of the CFC whose charge is to address the actions outlined in the SFRP. The CFC and its committees have been working to address the top five priority action steps of the plan identified by the participating stakeholders:

1. Education and Outreach – Create a uniform message to disseminate to all audiences regarding the value of forests, the definition of a healthy forest,

definitions and benefits of active forest management, respect for all forestlands, and the threats to Connecticut's forestlands.

2. Forest Ecosystem Health - Establish a baseline in forest ecosystem health to monitor both positive and negative changes in forest health.
3. Public Forest Stewardship - Increase management on State forestlands. Limited resources in state government are preventing our public lands in Connecticut from acting as a showcase for quality land use and management.
4. Private Forest Stewardship - Investigate and reestablish the balance of incentives versus disincentives to manage private forestlands, so that prime forestland does not always fall into development or suffer degradation through indiscriminate harvesting. Clarify the role of the Department's Service Forester and determine if more foresters are needed to help private landowners with these decisions.

As the recognized coordinating body for public and private collaboration in forest issues in Connecticut, the CFC has provided input for the Department's revision of "The Green Plan" for land and resource conservation. The Department looks forward to the CFC's continued involvement in the substantive issues affecting Connecticut's forested lands.

Sound Growth Principles Guide State Development Projects

The Department's Office of Environmental Review coordinates the review of a wide variety of projects including Federal and State projects under the National and Connecticut Environmental Policy Acts. The focus of these reviews is to evaluate impacts to natural resources, incorporate appropriate mitigation measures and ensure compliance with regulatory requirements.

During reviews, the evaluation of land use considerations is guided by the *Conservation & Development Policies Plan for Connecticut, 2005 – 2010* ("Plan of C & D"). The Plan provides the policy and planning framework for capital and operational investment decisions of state government. Growth management principles in the Plan include:

- to redevelop and revitalize regional centers and areas with existing or currently planned physical infrastructure,
- to concentrate development around transportation nodes and along major transportation corridors, and
- to support the viability of transportation options and to conserve and restore the natural environment, cultural and historical resources, and traditional rural lands.

The Department offers comments as to whether projects comply with the Plan of C & D. Several projects reviewed in the past year by the Department and endorsed as exemplifying sound land use planning principles include:

- relocation of a regional courthouse to downtown Torrington, an urban center, from the existing location in the more rural county seat;
- siting of a DOT maintenance facility within an interchange of two major highways in eastern Connecticut; and
- consolidation of two community college campuses into downtown New Haven, a site easily accessible by the transit bus system.

Urban Land Use and Water Quality

Great strides have been made in the water quality of Connecticut over the last four decades. Most of these improvements are directly attributable to minimization of impacts from point sources discharges - both through treatment and in some cases elimination of discharges. While we continue to regulate and minimize the impacts of point source discharges, we are turning greater attention to nonpoint sources. In the last year, the Department has invested considerable research and analysis into the impact of stormwater runoff from developed areas on water quality. In particular, we have focused on how water quality changes in response to increasing intensity of development. With increasing intensity of development comes more hard surfaces - like roofs, driveways, roads, parking lot and sidewalks. During a storm event, rainwater runs off these surfaces, rather than percolating into the ground - therefore these surfaces are known as impervious cover. We have identified a strong correlation between the amount of impervious cover in a

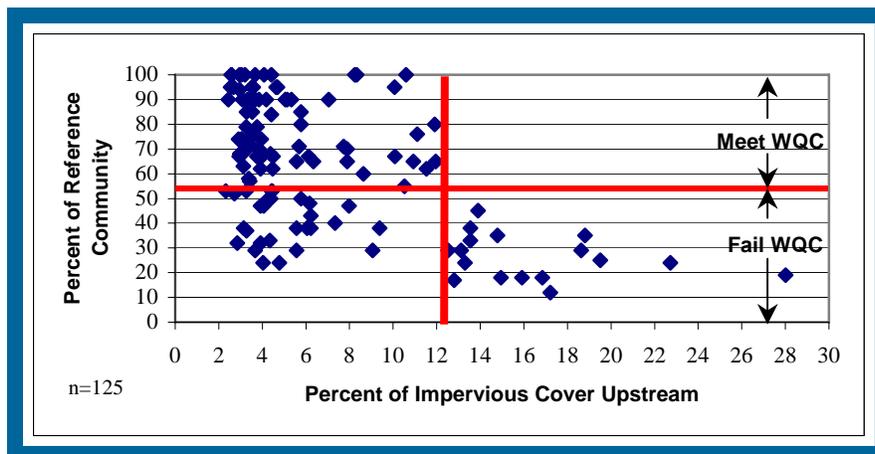
watershed and the diversity of macro invertebrates in a stream. As the impervious cover increases, the diversity decreases.

The 2006 List of Connecticut Waterbodies Not Meeting Water Quality Standards has a total of 105 stream segments that do not meet aquatic life goals established in Connecticut's Water Quality Standards because the macroinvertebrate community is impacted. At least 58% of these water bodies have stressors related to urbanization as the suspected cause of the impairment (e.g. stormwater run-off, habitat modifications, erosion, sedimentation etc.).

Modeling stormwater run-off impacts can be challenging because they need to reflect a complex mix of chemical and physical effects that can be quite variable. The use of surrogate measures of stormwater run-off impacts can simplify interpretation of cause and effect relationships and facilitate the development of mitigation implementation plans. The Department has developed a surrogate measure of stormwater run-off effects on streams, using an Impervious Cover ("IC") model that is applicable in situations where the most probable cause of the aquatic life support impairment is stormwater run-off. The IC model shows that greater IC increases impairment of aquatic resources.

The IC model established that above 12% IC the invertebrate community of a watershed is always impaired in our monitoring database (see Figure 1). The 12% target is translated into a Total Maximum Daily Load ("TMDL"), which defines pollutant-loading limits to protect aquatic resources and, in this case, is translated into the surrogate indicator of pollutant loading, or percent impervious cover.

Figure 1



The Department has used the IC Model to develop a TMDL for a small stream in Eastern Connecticut and has been able to engage stakeholders to focus on stormwater management efforts to restore aquatic life in the brook. In addition to setting targets for restoration, the IC model can be used in watersheds facing development pressure to help ensure consistency with water quality goals.

Watershed-based Planning Promotes Low Impact Development

The Department's Nonpoint Source Program, funded under Section 319 of the federal Clean Water Act, has been working to develop watershed-based plans ("WBP") as a better way to apply limited resources to meet water quality goals in impaired watersheds. The approach is a requirement of Section 319 funding and attempts to focus management action in watersheds where there are identified problems related to nonpoint source runoff. In collaboration with the Office of Long Island Sound Program's ("OLISP") Coastal Nonpoint Source Program, Connecticut's first WBP was completed for the Niantic River Basin in 2006.

While watershed-based plans are clearly aimed towards fixing existing water quality problems, the Department plans to implement them using a three-pronged approach. First, remediation of existing problems is the top priority of WBPs. Second, WBPs can help to ensure that new problems are not created by new development and other looming land use changes. The previous section on impervious cover ("IC") relationships to aquatic macroinvertebrate health is an example of how management action can be taken both to address an existing problem (too much impervious cover) and to ensure future development minimizes the growing effect of IC through low-impact development ("LID") techniques. The third prong of WBPs is to promote public awareness and stewardship to advance individual actions that are essential to pollution prevention and landowner management that minimizes environmental impact.

The Niantic River WBP recommends actions in all three areas to address existing, and growing, bacteria and nutrient impacts in the river and Niantic Bay. The strategy moving forward is to maintain an implementation committee composed of local and state officials as well as environmental advocates and the public. The committee was formed for the Niantic River last fall, shortly after the Niantic River WBP was completed. The Department has also reserved some Section 319 funds to help

implement the plan, which will be used according to the consensus of the implementation committee to address management and education priorities. Although the Niantic River WBP was the first, and serves as a model, the Nonpoint Source Program has already funded the Natural Resources Conservation Service to complete additional WBPs, with the Coginchaug River WBP slated for completion this year.

Nonpoint Source Program Success Stories

In addition to promoting watershed-based plans, the Department's Nonpoint Source Program under Section 319 of the federal Clean Water Act has a history of successful project implementation to help control nonpoint source runoff. The projects range from demonstration and research projects to full implementation efforts. Some recent projects include:

- A ten-year low impact development research project on Jordan Cove that was recently completed. A team of participants, led by researchers from the University of Connecticut, studied the benefits of a suite of best management practices in a new neighborhood under construction in Waterford. With strong participation of local officials, the developer, design engineers, and the public, the project showed that low impact approaches can be highly effective in reducing runoff and can be applied in new development situations without negatively affecting public safety or sale of the homes.
- During the 2004 growing season, the University of Connecticut Extension specialists worked with farms, businesses and schools to reduce the use of pesticides by implementing Integrated Pest Management ("IPM") or Nutrient Management programs in the Quinebaug and Shetucket River basins. Pesticide applications were reduced by 18%. The project succeeded in reducing the use of 25 of the 54 pesticides and eliminated the use of twelve products entirely. The growers in the program reported a net reduction in use of 332.9 pounds of insecticides, 57.9 pounds of fungicides, and 395.4 pounds of herbicides.

- In New Haven, Edgewood Park Pond had until the late 1980's provided passive and active recreation opportunities in the form of a park water feature and a fishery resource. The 2.7-acre pond, highly prized by the New Haven community for more than 70 years, was in danger of becoming a marsh. This was due to its highly eutrophic condition and influx of stormwater sediments causing reduced water depths as shallow as 1.5 feet in some areas. A major source of pollutants and erosion was eliminated by redirecting a storm drain that was the source of significant loads of sediments, road salts, oil, grease, and metals into the pond. The pond was dewatered and was dredged to a maximum depth of 10 feet removing the nutrient rich sediments and littoral plantings were expanded to reduce slope erosion and discourage geese and other waterfowl from accessing the pond. Pond bank plantings stabilized a steep slope along one side of the pond. Since the restoration project was completed, water quality has improved dramatically.
- In Ashford, agricultural practices along an approximate 1,000 linear feet section of the Mount Hope River had resulted in the alteration of a forested riparian zone. Cattle had trampled portions of streambanks causing streambank instability, erosion/sedimentation and degradation of the riparian zone and instream habitats for the resident fish community. Stream banks were stabilized with a combination of bank placed boulders, logs, erosion control fabric and vegetation. Tree and rootwad structures were installed along the stream bank to not only protect stream banks from erosion but also to provide much needed large, woody debris cover habitat for fish. Restoration also involved filling much of the channel to create a restored and stable stream width ranging between 20 to 36 linear feet.

First Former Nuclear Power Site Returned to a "Green Field"

On October 18, 2006, the U.S. Naval Nuclear Propulsion Program commemorated the first-ever chemical and radiological approval of a U.S. nuclear power reactor site for unrestricted future use – the Department of Energy S1C Prototype Reactor Site in Windsor, Connecticut.

The ceremony concluded twelve years of facility dismantlement and environmental characterization and restoration associated with returning the site to "Green Field" conditions. First, the reactor at the Windsor Site and all supporting facilities and utilities were removed and the materials properly disposed of. Then extensive environmental characterization of the site was performed, followed by remediation where necessary. Over 140,000 environmental sample results from the 11 acre site were analyzed and reported – a new standard in environmental remediation. Naval Nuclear Propulsion Program personnel and contractors worked in cooperation with the Connecticut Department of Environmental Protection and the U.S. Environmental Protection Agency to complete the project. These agencies also provided independent oversight of the project.

The site is now suitable for any future use, without restriction, from economic development to recreation. This important revitalization project illustrates the many benefits of landscape stewardship.



**Knolls Atomic
Power Laboratory
S1C Site in
Windsor,
Connecticut -
1987**

**Former Knolls
Atomic Power
Laboratory S1C
Site in Windsor,
Connecticut**



Pogo- “ I have seen the enemy and it is I ”

Much progress has been made over the past four decades to address the traditional, industrial sources of pollution. As a result, environmental protection efforts have expanded to focus on non-traditional sources of pollution and new pollutants, especially greenhouse gases. We are increasingly conscious of the environmental impacts associated with the materials and products we consume, the waste we generate, the energy we use, the transportation choices we make, and the buildings we construct. Consistent with this new focus, the State has made strides in implementing many of the recommendations in Connecticut’s 2005 Climate Change Action Plan to reduce greenhouse gas (“GHG”) emissions and increase energy efficiency.

Progress on Implementing the Climate Change Action Plan

2006 was a breakthrough year on climate change understanding and awareness. For the first time ever, the public ranked climate change as the most important environmental issue, both in Connecticut and nationally. Scientists, insurers, investors, planners, and policy makers continued to respond to dramatic climate impacts on ecosystems, coastal infrastructure, public health, and the economy. Indeed, the discussion on climate change solutions has moved from discreet policy circles to the mainstream.

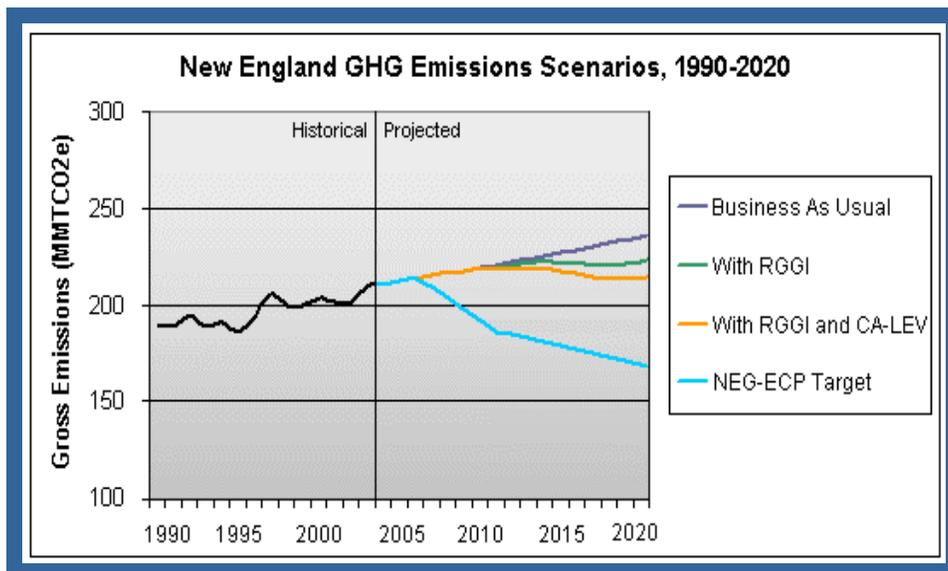
Connecticut is proud of its 2006 accomplishments in continuing to implement the 2005 Connecticut Climate Change Action Plan (“CCAP”), yet recognizes the enormous challenges ahead. Through 2006, both the Governor and the General Assembly continued to demonstrate their strong support of efforts to address climate change in Connecticut. The Governor’s support extended to the issuance *CT’s Energy Vision for a Cleaner, Greener State*; the development and implementation of critical regulatory programs to reduce GHG emissions from motor vehicles and electric power plants and the creation of an Office of Responsible Growth within the Office of Policy and Management (“OPM”).

The General Assembly continued to support the goals of the CCAP during the 2006 legislative session, and passed several key pieces of legislation, including clean car labeling requirements, raising energy efficiency standards for most state building

construction of \$5 million or greater and providing tax exemptions on certain hybrid motor vehicles and weatherization products for homeowners. Continued legislative support of the policies contained in the CCAP is critical if Connecticut is to meet the GHG emission reduction goals set forth in Section 22a-200a of the Connecticut General Statutes. The following actions highlight the state's successes in reducing GHG emissions:

- Connecticut, in collaboration with other northeast states, developed a model rule to cap greenhouse gas emissions from the region's power plants. Connecticut is currently in the process of developing regulations to further address GHG emissions.
- The number of Clean Energy Communities in the state doubled to over 30, each committed to purchasing 20% clean energy by 2010.
- Five Climate Change Leadership Awards were presented to individuals and organizations that were recognized for exemplary action.
- Results of a recent survey show that Connecticut residents have become highly aware of climate change (97%) and the importance of individual action to reduce climate pollution (70%).
- Partial funding was provided for 122 megawatts of clean combined heat and power projects.
- Connecticut spearheaded work to determine how to measure greenhouse gas reductions statewide.

Figure 2



The Department is sobered by both the continued rate of increase of GHG emissions in Connecticut and worldwide and the magnitude of reductions required to achieve climate stabilization. The Department's current accomplishments are a first step. As depicted in Figure 2 there are strategies such as the California Low-Emission Vehicle Program and the Regional Greenhouse Gas Initiative ("RGGI") that can help to achieve progress with target greenhouse gas reduction goals.

The Department will rely on growing support from the General Assembly and citizens to continue Connecticut's leadership on climate change action. The CCAP is the product of many people, groups, and companies in the state of Connecticut. It is not a state agency plan or a legislative plan; it is the state's plan. Its success depends on a broad base of support for implementation.

Additional information on the Connecticut Climate Change Action Plan can be found at www.ctclimatechange.com.

Regional Greenhouse Gas Initiative ("RGGI")

Connecticut continued its participation in the process to develop RGGI along with eight other northeast and mid-Atlantic states. Environmental and energy agency heads and staff from these states have continued throughout 2006 to finalize elements of a program that would cap CO₂ emissions from large power plants at "current" levels beginning in 2009 and achieve a 10% reduction from these levels by 2019.

The Governors of Connecticut, Vermont, New Hampshire, Maine, New York, New Jersey and Delaware signed a Memorandum of Understanding ("MOU") to move forward with RGGI in December 2005. Massachusetts and Rhode Island re-engaged in the RGGI process and signed the RGGI MOU in January 2007. Maryland is expected to sign the MOU sometime in the first half 2007.

A RGGI Model Rule was released in August 2006, and now individual RGGI states are working to develop state rules to implement the program. The Department is conducting a series of RGGI Workgroup meetings which began in December 2006 and continue into 2007. These meetings will be used to discuss sections of the Model Rule that were left for the states to develop state-specific policy on issues such as the size of the consumer benefit set-aside, uses for the consumer benefit set-aside and allocation methodology. Connecticut's rule to implement the RGGI program is expected to be completed in late 2007.

Additional information on the RGGI process can be found at www.rggi.org/index.htm and www.ct.gov/dep/cwp/view.asp?a=2684&q=332278&depNav_GID=1619.

Proposed Consumer Products Regulation Reduces Toxic Contaminants and Formation of Ground-level Ozone

Frequently used consumer products such as shaving cream, hairspray, floor wax, deodorant, carpet cleaner and air freshener, release volatile organic compounds or VOCs, substances that are precursors to the formation of ground-level ozone, a pervasive air pollutant with serious health and ecological impacts. Many commonly used consumer products also contain toxic compounds that can contaminate air and water.

During the summer months, Connecticut typically experiences ten to twenty days when ozone levels exceed federal standards. These exceedances come about despite the many actions Connecticut has taken to reduce ozone precursor emissions from traditional sources of pollution such as electric generating units, large industrial facilities and gasoline stations. To come into compliance with the federal ozone standards, Connecticut is now adopting measures to reduce ozone precursors from non-traditional, small and widespread sources. One such measure is a new regulation limiting the amount of VOCs and toxic compounds in over 90 consumer product categories.

The toxic compounds in consumer products not only contribute to ozone formation but also pose a water quality hazard. Chronic exposure to some compounds creates potential carcinogenic and non-carcinogenic health effects. To encourage the replacement of toxic compounds with less toxic alternatives of comparable efficacy, the new consumer product regulation prohibits the use of perchloroethylene, methylene chloride and trichloroethylene in contact adhesive, electronic cleaner, leather care products, adhesive removers, electrical cleaners and graffiti removers. The regulation also prohibits the use of paradichlorobenzene in toilet/urinal care products and solid air fresheners.

State Goes to Green Cleaning

State agencies will be buying and using environmentally and health-friendly cleaners as a result of Executive Order 14 signed by the Governor on April 17, 2006. The order cites exposure to harmful chemicals contained in cleaning and sanitizing products as well as releases into the environment from their wastes and byproducts as reasons to go green. The Department of Administrative Services, with Public Health and DEP, published a policy and guidelines to provide direction to state agencies in carrying out the green cleaning initiative.

As of January 1, 2009, the regulation requires that only products that meet the VOC content limits and toxic compound prohibitions may be sold in the state.

Manufacturers of consumer products are responsible for developing and distributing products that comply with the new regulation for sale at the retail and wholesale level. As a result, consumers may easily reduce their “environmental footprint” simply by purchasing customary personal and household products, as such products will have been reformulated to meet the requirements of the new regulation. The Department anticipates that the proposed regulation will help to provide a better environment for everyone.

State Solid Waste Management Plan Adopted

On December 20, 2006, Commissioner Gina McCarthy approved amendments to the State’s Solid Waste Management Plan (“Plan”). The amendments are comprehensive, replacing the 1991 State Solid Waste Management Plan. The Plan examines the status of solid waste management in Connecticut; establishes goals and objectives; and outlines strategies for achieving the goals set forth. The Plan will serve as the basis for solid waste management planning and decision-making for a twenty year planning horizon. Within the next five years Connecticut will focus on implementing the higher priority strategies listed in the Plan.

The Plan was developed in conjunction with a diverse stakeholder group. An initial public stakeholder forum was conducted in June of 2005, and an External Stakeholders Committee was formed consisting of stakeholders from government, regional solid waste management authorities, the solid waste management industry, the recycling sector, community and environmental organizations, and businesses/generators. The External Stakeholders Committee met regularly to advise the Department on the content of the Plan. The extensive public participation in the development of the final plan, included a public comment period, public informational meetings and public hearings where members of the public provided comments on the Proposed Amendments to the Solid Waste Management



Plan – July 2006. A Hearing Officer’s Report was prepared and submitted to the Commissioner for her review and consideration. The Report was accepted by the Commissioner; subsequently, the Plan was modified per the recommendations found in the Hearing Officer’s Report.

The Plan sets forth a vision statement consisting of three core elements. The Plan (1) advocates shared responsibility for changing the balance of solid waste management (i.e., everyone producing solid waste needs to be more aware of the ramifications of their actions and decisions and take more responsibility for the waste produced); (2) calls for a reinvigoration of efforts to transform our solid waste management system from one based mostly on disposal to one based on resource management and promotes a shift away from a “throwaway society,” toward a system that promotes a reduction in the generation and toxicity of the trash we produce and dispose through increased source reduction, reuse, and recycling; and (3) requires that we ensure that the waste that cannot be reduced, reused, or recycled, will be disposed in an efficient, equitable, and environmentally protective manner.

The Plan identifies a target of reducing the per capita municipal solid waste (“MSW”) disposal rate from an estimated 0.8 tons/person/year in 2005 to 0.6 tons/person/year by the year 2024. This equates to a 58% municipal solid waste diversion from disposal rate by the year 2024. Currently, the estimated state-wide recycling rate is 30%. Based on the priorities assigned to each of the 75 strategies listed in the Plan, a focus of efforts will be directed towards:

- Enhancing and improving existing recycling programs;
- Targeting certain waste streams, such as: the recycling of electronics, mixed paper, and commercial construction and demolition wastes; and the composting of commercial food wastes;
- Enhancing and improving the state’s solid waste and recycling database management systems;
- Conducting a waste characterization study; and
- Improving permitting and enforcement activities.

Achieving this vision will require everyone in Connecticut, including citizens, businesses, institutions, lawmakers, and government, to make wise decisions regarding the management of our wastes. The State Solid Waste Management Plan provides the foundation for the work that must be done to best manage our solid waste in a social, economic, and environmentally responsible manner.

The Department has established a standing State Solid Waste Management Advisory Committee to help guide implementation of the Plan. The purpose of the Advisory Committee is to assist the Department in implementing the Plan, identify emerging issues and solutions, and participate in any revisions to the Plan as necessary. The Committee membership is open to all and all meetings will be held in an open stakeholder Forum.

The State Solid Waste Management Plan and related material and information about becoming a member of the State Solid Waste Management Advisory Committee can be accessed at the Department's website at <http://www.ct.gov/dep/SWAdvComm>.

Mercury Action is Rising

Mercury is a heavy metal that can accumulate in living tissue. Exposure to mercury, when released into the environment through spills or incineration, can be toxic to humans and wildlife, or cause other health effects such as neurological and reproductive disorders. Therefore, proper management of used mercury-containing items and elemental mercury and elimination of non-essential uses of mercury in consumer products is important to protect human health and the environment.

In 2002, the Connecticut General Assembly ("CGA") passed into law Public Act 02-90 which established a program to eliminate non-essential uses of mercury in consumer, household and commercial products with the goal of reducing mercury in the environment. The 2006 CGA improved the State's mercury reduction laws by adding enforcement provisions and additional banned items. A summary of the 2006 legislative initiatives includes the following:

- *Mercury enforcement/penalty provisions.* The legislation establishes specific penalties for violating the laws governing the sale, distribution, labeling, and collection of mercury and mercury-added products. Anyone

who violates any provision of the solid waste management laws or any regulation adopted governing the sale, distribution, labeling and collection of mercury and mercury-added products may be subject to an order by the Commissioner. The bill allows the Department to pursue anyone who violates any law, regulation or order governing mercury to a fine of up to \$25,000 a day per offense.

- *Button cell batteries.* Starting July 1, 2011, the new legislation bans the sale and distribution for promotional purposes of button cell batteries containing mercury or any product that contains such batteries. Manufacturers of mercury button cell batteries are working cooperatively to meet this deadline and will be responsible for advising retailers about the ban and how to legally dispose of their remaining inventory.
- *Fluorescent lights and high intensity lamps must have an "Hg" placed on the lamps.*
- *Ban on the sale and distribution of high intensity discharge lamps.* Current law bans the sale or distribution of products containing more than 100 milligrams of mercury starting July 1, 2006. The bill exempts high intensity discharge lamps containing between 100 milligrams and 1 gram of mercury, including metal halide, mercury vapor, mercury capillary, mercury-xenon short arc and mercury short-arc lamps through July 1, 2013.
- *Universal waste exemption for mercury containing equipment.* The bill requires any waste from equipment containing mercury to be disposed of or otherwise handled in accordance with federal regulations for "universal wastes" until such time the agency adopts its own regulations. The regulations are to govern the disposal and handling of waste from equipment containing mercury.

Management of Dental Mercury

In January 2006, the Department revised its best management practices (“BMPs”) for dental offices in accordance with the Declaratory Ruling on the use of amalgam fillings in dental practices issued by Commissioner McCarthy on September 8, 2005. The revised BMPs address in more detail the installation of amalgam separators, the maintenance of such units and record keeping requirements of dental practices that place or discharge amalgam. Some of the specific modifications include:

- Amalgam separators must be operational at all times when dental procedures are performed;
- Amalgam separators and chair-side traps should be maintained in accordance with manufacturer specifications;
- Amalgam should be recycled whenever possible or, if not recycled, handled by a licensed hazardous waste transporter;
- Non-oxidizing/biodegradable cleaners should be used when cleaning of water pipes and vacuum lines to minimize the dissolution of amalgam; and
- Clarification as to what routine records should be maintained in dental offices regarding the use of amalgam and amalgam separators and that such records must be made available to inspectors when requested.

Another significant change in the BMPs involves the creation and display of a brochure entitled *Fillings: The Choices You Have, Mercury Amalgam and Other Filling Materials*. As part of the revised BMPs, all Connecticut dental offices who use amalgam, must prominently display the brochure so dental patients can better understand the advantages and disadvantages to human health and the environment of the use of mercury amalgam fillings and other filling materials used in dental procedures. The brochure is intended to assist dental patients in making choices regarding their dental and total health needs.

The Department is beginning a coordinated effort of inspecting dental offices for compliance with the BMPs and familiarizing newly licensed dentists with what is expected of them as it relates the use and handling of mercury amalgam. Inspectors from the Department’s Radiation Unit will conduct the initial inspections of dental offices while conducting routine “ionizing radiation” inspections. Manufacturers

assisted in training Department inspectors on the details of an amalgam separation unit. An inspection checklist that highlights the key components of the dental office BMPs has been developed for the inspection staff and will be used during their inspections.

State Park Harvest Feeds Community

People's Harvest, a food "rescue" and farm education program, is literally breaking ground at Mashamoquet Brook State Park to feed local low-income families in northeastern Windham County. This food rescue program takes excess fresh, locally grown food and distributes it to agencies that serve hungry people. People's Harvest volunteers grow vegetables on 6 acres of parkland. In addition, local gardeners drop off a portion of their homegrown produce to increase the food donations. The group's goal is to have home gardeners throughout the area donate 10% of their harvest to local food pantries, senior centers, and soup kitchens. Last year People's Harvest donated 1500 pounds of veggies grown at the state park and received donations of 1000 more pounds from home gardeners.

The project also reduces greenhouse gas emissions that contribute to climate change because locally grown food reduces pollution from long distance food transport and packaging. Since the average produce grown in the United States travels 1,500 miles from farm to table, locally grown foods can make a big difference. In addition, the project helps educate the public about food security, gardening, and nutrition and it provides fresh local produce to families that have limited access to gardens and farms.

Organic Land Care

In an effort to promote organic land care with municipalities, the Department has produced a DVD that provides information for municipalities interested in learning more about organic land care. The 7½-minute DVD defines organic land care and describes its benefits and potential challenges. The DVD highlights the experience of two Connecticut towns implementing it on their playing fields, including on-location interviews with Cheshire's Parks and Recreation Director and Granby's Director of Public Works. Also featured is footage from the University of Connecticut's Research Farm where different fertilizer formulations are being tested. The DVD was funded in part by a grant from the U.S. Environmental Protection Agency and produced by the Department and Middlesex Community College.

Organic land care generally means that no synthetic pesticides or fertilizers are used. Benefits include higher soil organic content and reductions in nutrient run-off, nitrous oxide (a potent greenhouse gas) from nitrogen fertilizers, mowing and water use. In a recent study, the University of Connecticut found that organic fertilizers also release nutrients more slowly, helping to prevent water pollution. Using organic methods allows for slower turf growth throughout the growing season, which ultimately results in less frequent mowing, reduced fuel usage, and lower greenhouse gas emissions.

Making Hospitals Healthier

The mission of a hospital is to protect and improve the health of those in the community being served. The potential environmental and health impacts from the operation of these institutions can, however, be significant. Hospitals, for example, use a wide range of toxic chemicals, generate large quantities of wastes, and consume vast amounts of energy and water.

In 2004, the Department, in coordination with Hartford Hospital, US EPA Region 1 and Hospitals For a Healthy Environment formed the CT Hospital Environmental Roundtable (“CHER”). This partnership was formed to provide education, tools and information about best environmental practices to help health care professionals improve operational efficiency, increase compliance, and improve the health of their communities. CHER also provides information to help facilities realize the cost savings and environmental benefits that can be attained through improvements in recycling, energy efficiency and water conservation.

CHER workshops provide a setting for hospitals to learn from each other by sharing ideas, presenting success stories, keeping up-to-date on available resources, and discussing issues that affect the health care industry.

Workshops are free and cover a variety of topics such as reducing solid, hazardous, biomedical, and pharmaceutical waste to purchasing environmentally preferable cleaning products and include pre and post-

The Institution Recycling Network (“IRN”) assisted a hospital with donating almost 20 tons of surplus materials to a clinic in Haiti. Later this same hospital used IRN to donate high quality x-ray equipment to another hospital.

tests, and questionnaires. Follow-up surveys have also been performed to collect data, provide additional assistance and continue to encourage participants to implement what they learned at the workshops.

This year, the workshops included: Everything You Wanted To Know About Green Construction including information on recycling construction and demolition materials, state regulations related to environmental, health, and safety requirements on construction and demolition sites and benefits of high performance buildings; Protecting CT's Children From Environmental Risks: Problems and Solutions including information on environmental hazards in air, water and soil; environmental pollutants in American children, safer environments for children in homes, child care settings, and schools; Renew Your Energy including the innovative steps St. Francis Hospital has taken to reduce energy consumption and costs, renewable energy options for hospitals, combined heat and power, evaluating energy performance and a tour of an operating fuel cell.

GreenCircle Award for Schools

The Department established the GreenCircle Award program to recognize businesses, institutions, individuals, and civic organizations that have participated in energy conservation, transportation, pollution prevention or recycling related activities or projects that promote natural resource conservation or environmental awareness. To date, more than 750 awards have been granted to businesses, institutions, individuals and civic organizations for their involvement in over 1,100 projects.

One example of some of the incredible environmental efforts being undertaken by Connecticut Schools is at the Warren Elementary School. The school has demonstrated a commitment to a wide variety of environmental activities in each classroom that enriches both the students and the Warren community. The activities involve every grade in the school (kindergarten through sixth); the library curriculum; parents of the Warren Elementary School students, as well as other



community volunteers. The school received its first GreenCircle Award in 1998 and has received an award every year since 2000.

In 2006, each class at the Warren School contributed time and effort to the school's outreach garden. The fifth grade class tilled and prepared the raised beds for spring planting. The sixth grade class started seeds indoors, and taught the younger students about planting and caring for the crops. An all school planting was held at the end of May, first and third grade classes selected and displayed prize vegetables for an exhibit at the Bethlehem Fair in September. Kindergarteners canned cucumbers for the annual community/school "Fall Harvest Luncheon". The second and fourth grade classes "put the garden to bed" at the end of the season. It is the dedication to this joint effort that provides the students with a tangible sense of community and the value of working together.

"Making Doing the Right Thing" the "Path of Least Resistance"

The Department is focused on achieving environmental results, providing flexibility and certainty in how to come into and maintain compliance, and leveling the playing field by keeping the costs of non-compliance high. By using a broad range of regulatory, permitting, assistance, and enforcement tools to maximize protection of public health and the environment and by maintaining a strong, credible enforcement presence, the Department can minimize the potential environmental impacts of regulated activities. The compliance assurance tools the Department employs include inspections, data tracking and monitoring, permits, compliance assistance, and enforcement.

Leveraging Strong Enforcement

The following four cases reflect the Department's ongoing commitment to maintaining a strong enforcement presence.

Home Depot Agrees to Pay Penalty and Make Improvements

The Department entered a consent order with Home Depot in May 2006 under which this major national retail chain agreed to pay penalties of \$425,000 for numerous violations of environmental regulations at its stores in the state as well as make major improvements in its environmental practices. The violations, which were identified through the Department's inspection of 13 Home Depot stores in Connecticut, involved the improper display, handling and disposal of products such as pesticides and fertilizers that contain hazardous materials. Home Depot was cited for failing to comply with the state's hazardous waste, pesticide and storm water management requirements.

The consent order requires Home Depot to pay a civil penalty of \$99,000, pay \$326,000 to an agency fund for supplemental environmental projects ("SEPs"), continue to implement and improve a comprehensive Environmental Management System to ensure that operations at all current and future stores meet with Connecticut's environmental requirements and hire a third party to audit ongoing compliance with environmental regulations at Home Depot stores in the state. The Department will use the SEP funds paid by Home Depot to further develop and

implement outreach and compliance assistance strategies for the retail hardware store sector.

The consent order cited violations at Home Depot stores in: North Haven, Berlin, Norwalk, Fairfield, Southington, Danbury, West Hartford, Enfield, New Hartford, Lisbon, Derby, Middletown and Waterbury.

As a result of the Department's action, Home Depot is putting Environmental Management Systems in place in all of its stores that include:

- Improved outdoor display and storage of various chemicals and products, such as pesticides, fertilizers, swimming pool additives, bags of concrete, deicing materials and pressure treated wood. These steps are designed to prevent spills and breakage that result in hazardous materials being caught up in storm water runoff.
- Improved indoor displays to prevent shopping carts and hand trucks from breaking open packages of products that contain hazardous materials
- Increased training for staff on proper handling and disposal of products containing hazardous materials
- New procedures – such as patches for broken bags – to prevent the unnecessary disposal of products
- Retrofitting existing stores and improved design of future stores to accommodate the environmentally safe management of products and hazardous materials

Home Depot has also worked with major manufacturers on improved bags and containers for pesticides and fertilizers. This will reduce breakage and the volume of hazardous materials that need to be managed and disposed. Products packaged in this new manner are being sold at Home Depot stores in Connecticut and nationwide.

Hartford MDC Fined \$850K for Illegal Sewage Discharges

A major settlement in May 2006 with the Hartford-based Metropolitan District ("MDC") will significantly reduce illegal discharges of raw sewage into the environment from the MDC's wastewater collection system. The MDC is a non-profit municipal corporation responsible for providing water supply, water treatment and

water pollution control to eight communities including Bloomfield, East Hartford, Hartford, Newington, Rocky Hill, West Hartford, Wethersfield, and Windsor. Reducing discharges of untreated sewage to local rivers and streams will enhance fishing and recreation opportunities in the Connecticut River. }tc "A major settlement with the Hartford-based Metropolitan District ("MDC") will significantly reduce illegal discharges of raw sewage into the environment from the MDC's wastewater collection system. Reducing discharges of untreated sewage to local rivers and streams will enhance fishing and recreation opportunities in the Connecticut River." }

The U.S. Environmental Protection Agency, the U.S. Department of Justice, the Connecticut Department of Environmental Protection, the Connecticut Attorney General's Office, and Hartford's Metropolitan District entered into the settlement agreement. Under terms of the settlement, the MDC is required to significantly reduce illegal raw sewage overflows from the sanitary portions of their wastewater collection system, which previously have been discharged to area waterways including the Connecticut River, in violation of the federal Clean Water Act. The MDC was also required to pay a fine of \$850,000, which was split equally between the United States and the State of Connecticut. Connecticut's portion will be used to fund supplemental environmental projects related to compliance assistance, water quality planning, assessment and restoration, and greenway enhancements.

Specifically, the MDC will implement a comprehensive, system-wide plan to ensure that all Sanitary Sewer Overflows ("SSOs") which are associated with insufficient capacity of the MDC's separate wastewater collection system are eliminated within 7 to 12 years. The MDC is concurrently working with the Department to reduce the levels of overflows from the "combined" portions of their wastewater collection system.

Properly designed, operated and maintained sanitary sewer systems are meant to collect and transport all of the sewage that flows into them to a publicly owned treatment works. However, discharges of raw sewage from municipal sanitary sewers can occur. These types of discharges, called SSOs, have a variety of causes, including but not limited to severe weather, improper system operation and maintenance, and vandalism. The untreated sewage from these overflows can contaminate our waters, causing serious water quality problems. Raw sewage discharges can carry bacteria, viruses, and other organisms that can cause life

threatening ailments such as cholera, dysentery, infections, hepatitis, and severe gastroenteritis.

Investigations documented that the MDC had discharged over 120 million gallons of untreated sewage in the past five years from eight unpermitted structural SSO locations in wastewater collection systems in the towns of Hartford, Newington, Rocky Hill, West Hartford and Wethersfield. The discharges occurred primarily during wet-weather when the capacity of the separate collection systems was exceeded by groundwater and rain water that were discharged to these separate systems by individual residences through the connection of sump pumps, roof leaders, foundation, yard and area drains. Blockages in the collection systems have also resulted in dry-weather raw sewage overflows in all of the MDC's member communities.

The MDC provides wastewater collection and treatment services to approximately 375,000 people, and owns or operates four wastewater treatment facilities, the largest of which is the Hartford Water Pollution Control Facility which discharges to the Connecticut River. The discharge permits for these wastewater treatment facilities do not authorize any SSOs.

Hamilton Sundstrand Corporation Agrees to Pay \$12 Million for Violating Clean Water Act

In February 2007, Hamilton Sundstrand Corporation, which designs and manufactures aerospace systems for commercial, regional, corporate and military aircraft and international space programs, plead guilty to two counts of violating the Clean Water Act, including illegally discharging metal bearing wastewaters to the Farmington River from its plant in Windsor Locks. The Department discovered operational problems associated with Hamilton Sundstrand's wastewater collection and treatment system during inspections conducted in August and September 2003.

At its Windsor Locks facility, Hamilton Sundstrand manufactures air, spacecraft and marine control systems and components. As part of its manufacturing process, the company generates various metal finishing and parts-testing wastewaters that contain toxic pollutants, including chromium and copper. Hamilton Sundstrand's wastewater discharge to the Farmington River is regulated under a permit issued by the Department, which limits the amounts of pollutants that may be discharged to

the river and requires discharge monitoring by the company to demonstrate compliance with the terms and conditions of the permit.

In its plea, Hamilton Sundstrand indicated that, from 2001 through 2003, wastewater discharges from its chrome reduction treatment system did not meet permitted limits for hexavalent chromium on a consistent basis prior to being discharged. Additionally, when grab samples of the company's discharge were analyzed and found to contain hexavalent chromium above permitted limits, Hamilton Sundstrand at times omitted the data entirely from its daily records. On other occasions, the data was recorded on the daily records, but then altered to conceal the permit violations.

In addition, in late August and early September 2003, Hamilton Sundstrand employees directed over 100,000 gallons of copper bearing wastewaters to the wastewater treatment system, which consumed available equalization capacity and caused discoloration of the system. To avoid a system overflow, Hamilton Sundstrand knowingly discharged tens of thousands of gallons of contaminated wastewater to the Farmington River in September 2003. Samples of the wastewater indicated significant violations of permitted limits for copper and aquatic toxicity.

In the plea agreement filed with the U.S. District Court, Hamilton Sundstrand agreed to be placed on probation for a period of five years, pay a fine in the amount of \$1,000,000 and fund the following Supplemental Environmental Projects at a cost of \$11,000,000:

- Contribute \$500,000 to fund ecosystem management projects in the Farmington River Basin such as river restoration, dam removal, fish habitat enhancement, sediment removal, and stream bank stabilization;
- Contribute \$2,000,000 to address water quality impacts caused by farmland application of surplus manure from dairy farms;
- Contribute \$500,000 to procure or develop and implement an electronic information management system for data required under the Clean Water Act and the Safe Drinking Water Act to enhance the Department's ability to monitor and assure compliance with permit terms and conditions;

- Contribute \$2,400,000 to the Department's Statewide Supplemental Environmental Projects Account to be used toward restoring and maintaining state waterways;
- Install and operate a 5.4 megawatt modern gas turbine cogeneration heat and power facility designed to significantly reduce emissions of carbon dioxide, carbon monoxide, nitrogen oxides and sulfur dioxide; and
- Spend \$5,600,000 on environmental improvements at the Windsor Locks plant, including improving its wastewater collection, treatment and reuse facilities to eliminate process wastewater discharges into the Farmington River and reduce groundwater remediation effluent discharges to the river.

Ecolab Agrees to Pay \$583,000 for Pesticide Control Violations

Ecolab, Inc., a national pest control company doing business in Connecticut, entered into an administrative consent order with the Department on January 19, 2007 for numerous pesticide application violations. The violations included improper application of various pesticides at restaurants, retail stores and hotels across the state, failure to oversee the work of employees with properly certified supervisors, and inadequate record keeping. Ecolab, Inc. maintains business operations at 628 New Haven Road in Naugatuck.

The Department first became aware of possible violations in July 2005 after receiving a report that a restaurant custodian arriving for morning shift became ill and fainted following exposure to pesticide residue remaining from a prior evening pesticide application by Ecolab Pest Elimination. Upon investigation by the Department, it was determined that Ecolab improperly applied pesticides in treating the restaurant, including gross over-application of a particular pesticide by more than 20 times the required application rate. A review of Ecolab's operating records revealed numerous misapplications of pesticides at other locations and the lack required certified supervisor oversight.

Under the consent order, Ecolab is required to take all steps necessary to comply with the laws governing the application and control of pesticides, pay a civil penalty of \$145,750 and pay \$437,250 to perform supplemental environmental projects ("SEPs"). The SEPs include sponsoring no less than 10 training sessions for people who are certified to apply or supervise the application of pesticides in the State,

funding and organizing pesticide disposal days for schools, day care centers, municipalities and farms, and funding the Department's Invasive Species Fund. Each SEP is estimated to cost \$145,750.

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 ("SEPs") in negotiating enforcement case settlements. As a component of monetary penalties, SEPs have 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. To be an acceptable SEP, a project must also be consistent with the Department's Policy on Supplemental Environmental Projects.

In addition to the SEPs discussed in the above cases, recent SEPs achieved through Department enforcement actions include:

- Stan Chem, Incorporated in East Berlin has agreed to design and install a closed-loop cooling system that will eliminate the company's cooling water discharge to the Mattabessett River. The closed-loop system, which is estimated to cost over \$350,000, will substantially reduce water diversion needs and actual water usage, and will eliminate as much as 250,000 gallons per day of discharges to the Mattabessett River.
- Davis Tree & Logging, LLC in Redding has agreed to pay \$175,000 to fund projects that will increase awareness of and improve compliance with environmental regulations in the fields of forestry, arboriculture and solid waste management. A portion of the compliance information and outreach will be directed toward the logging and land clearing business sectors.
- Gist and Herlin Press, Incorporated in West Haven has agreed to purchase and install a new solvent recycling distillation system. Once operational, the new system will significantly reduce the quantity of waste press wash solvent normally produced from the manufacturing process and will lower the amount of

hazardous waste generated by the facility. The system is expected to cost at least \$45,000.

- The Romatic Manufacturing Company in Southbury, which manufactures container caps for the cosmetic industry, has agreed to install and operate a heat-cleaning oven for cleaning cap-holding fixtures. Conversion to the new parts cleaning system is expected to cost at least \$65,463.
- The Torrey S. Crane Company in Plantsville has agreed to purchase and install an evaporator for the treatment of waste drawing fluid at an estimated cost of approximately \$6,900. Operation of the new system will significantly reduce the quantity of waste fluid generated from production. The company manufactures tin foils and solders for the plumbing, electronic and medical industries.
- Ciro Associates, LLC, which operates a solid waste volume reduction facility in North Branford, has agreed to contribute \$10,000 to the ReCONNstruction Center in New Britain. The ReCONN Center is a not-for-profit business that promotes environmental and social sustainability by acquiring and salvaging useful building material for resale or reuse, thus removing the material from the solid waste stream. The SEP funds will be used by the ReCONN Center to lease warehouse space or purchase capital equipment needed to operate its building materials reuse store.

Providing Tools for the “Path of Least Resistance”

General Permits

The Department uses both individual and general permits to regulate activities. Individual permits are issued directly to an applicant, whereas general permits are issued to authorize similar minor activities by one or more applicants. The general permit process is designed to be quicker and less costly for both the applicant and the Department. Each general permit imposes operating terms and conditions developed specifically for the underlying regulated activity, and is designed to produce broader environmental results. The Department is committed to ensuring compliance with both individual and general permits.

The following general permits were either newly issued by the Department or are under development.

Diversion of Remediation Groundwater

Effective October 2006, this general permit regulates the diversion of remediation groundwater greater than 50,000 gallons during any twenty-four hour period to prevent, intercept or treat a known or suspected contamination or pollution plume, or well point de-watering as part of soil remediation activities. These types of regulated activities are often connected with discharges of remediation wastewaters to surface waters or ground waters that also must be licensed under either a separate general permit, emergency or temporary authorization, or individual permit.

Contaminated Soil and/or Sediment Management (Staging and Transfer)

This general permit, which was issued in September 2006, authorizes the staging, transfer and temporary storage of contaminated soil and/or sediment, and regulates the management of excavated earthen materials for projects with duration of less than two years. Registration requirements under the general permit vary depending upon the maximum volume of soil to be staged at any one time and whether the soil will be stored at the excavation site or another location. The permit imposes environmentally protective management measures for handling soils where contaminated soils are typically managed, such as remediation sites, construction sites and utility installation projects.

Storage and Processing of Asphalt Roofing Shingle Waste ("ARSW") and/or the Storage and Distribution of Ground Asphalt Aggregate ("GAA") for Beneficial Use

Issued in May 2006, this general permit authorizes the storage and processing of asphalt roofing shingle waste, and the storage and distribution of ground asphalt aggregate for reuse as an ingredient in asphalt paving for sub-base, aggregate base and binder applications. Authorized facilities are required to comply with specific operating conditions that promote the proper handling, processing and use of such asphalt materials. The general permit provides a regulatory means for diverting

asphalt roofing waste away from the state's solid waste stream and toward beneficial use.

Discharge of Wastewaters Associated With Food Preparation Establishments

Effective September 30, 2005, this general permit prevents the discharge of fats, oils and grease ("FOG") from food preparation establishments to the sanitary sewer system. In the past, uncontrolled discharges of FOG into municipal sanitary sewer systems have contributed to raw sewage overflows and backups into basements resulting in unnecessary public health risks, pollution of surface waters, property damage. The general permit requires food preparation facilities to install grease interceptors that collect fats, oils & greases before they can enter the sewer system. The FOG waste is then periodically removed and treated, and is beneficially reused as a fuel in sewage sludge incineration process.

New General Permits Under Development in 2006

The Department has been continuing its efforts to streamline and facilitate its permitting process by developing new categories of general permits to cover many types of regulated activities. Examples of the general permits that are currently under development include:

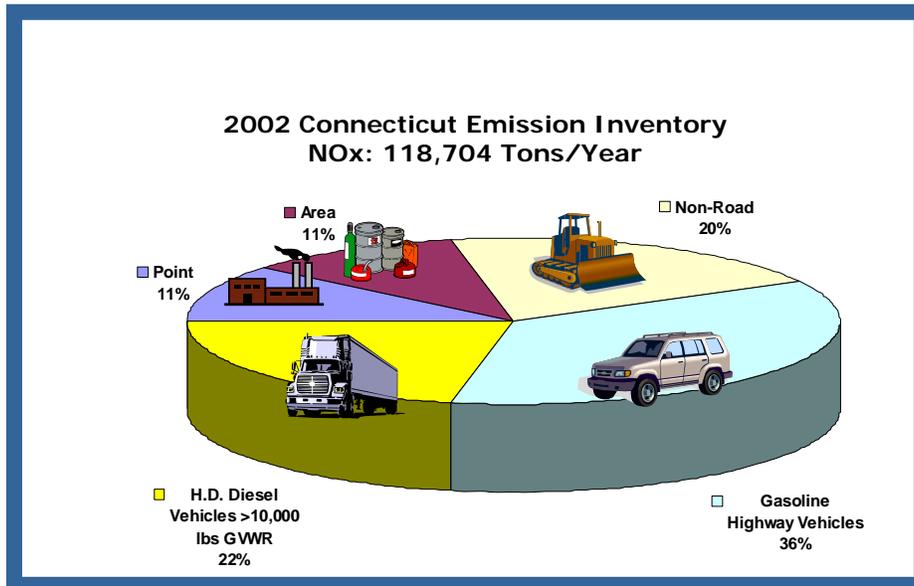
- **General Permit for Municipal Transfer Stations-** Will enable municipalities to more quickly obtain authorization to construct/operate municipal transfer stations processing up to 120 tons per day of solid waste.
- **General Permits for the Diversion of Water for Consumptive Use-** Will streamline the authorization process for certain types of consumptive water diversions in excess of 50,000 gallons per day that have minimal environmental impact.
- **General Permit to Install, Use or Remove Scientific Measuring Devices and Perform Survey Activities-** Will simplify the authorization process for these activities when conducted in areas such as tidal wetlands and navigable waters.
- **General Permit for Marina and Mooring Field Reconfiguration-** Will facilitate authorization for a marina to install or move certain boating access or support structures within an established field boundary.

- **General Permit for Maintenance of Catch Basins and Tide Gates-** Will allow quicker authorization for catch basin cleaning and tide gate repair within a closed water discharge system located in tidal waters or wetlands.

Reducing Emissions From Mobile Sources

Mobile and area sources are emerging as high sources of air pollution. For example, according to Connecticut's 2002 emissions inventory, 78% of all emissions of nitrogen oxides were from mobile sources. The Department has been implementing a series of strategies to address these emissions and improve public health through the reduction of diesel particulate matter and air toxics and reduction of greenhouse gases in support of the Connecticut Climate Change Action Plan.

Figure 3



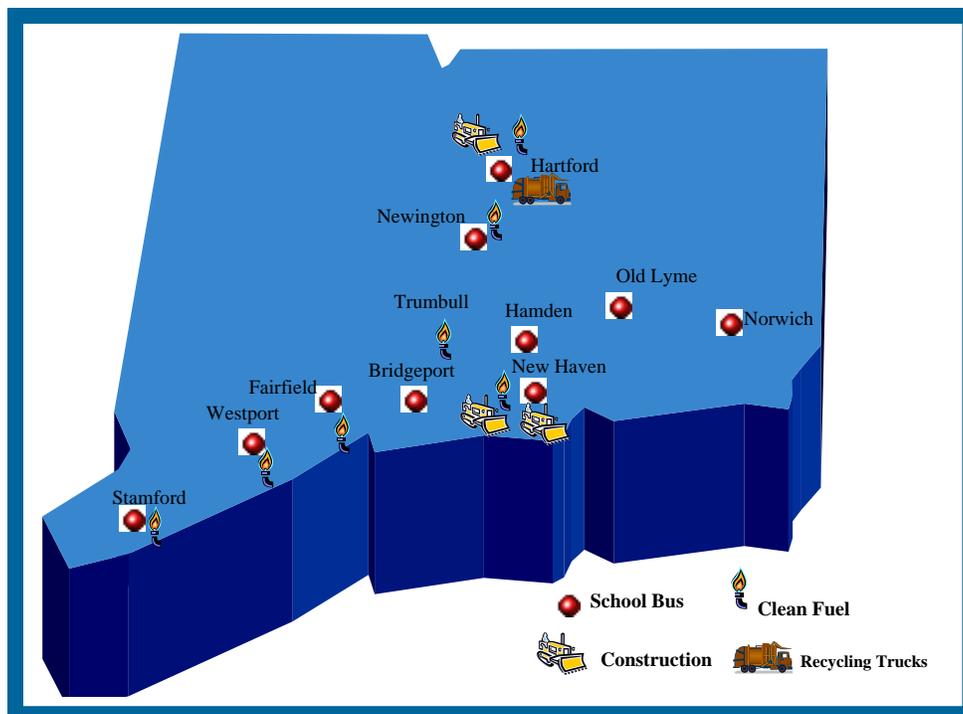
The following are measures that will assist in controlling air pollution from mobile sources by reducing emissions:

- Adopting the most stringent emission standards for motor vehicles. In 2005 Connecticut adopted California's Low Emission Vehicle standards to ensure the sale of the cleanest cars available in the State of Connecticut. This year, the Department will work with the Department of Motor Vehicles to develop a clean car labeling program to educate consumers on the environmental benefits of clean vehicle purchases.

- Increased education, outreach and enforcement on anti-idling. Unnecessary idling wastes fuel, costs money and results in increase air emissions. Turning off an engine, whether gasoline or diesel powered, can in many cases be a simple change a driver can make to help protect the environment. Over the past year opportunities for education and outreach with municipal partners has helped to raise awareness about Connecticut’s anti-idling rules. Over the next year the Department will look to enhance this effort and design a broader initiative to include additional partners from the private sector.
- Cleaning up legacy fleets. The combination of new emission standards for passenger cars and new federal standards for new diesel engines will help to ensure new vehicles include the cleanest technologies available on the market today. A challenge remains in addressing the legacy vehicles that can be on the road for many years. Connecticut has pursued an aggressive strategy to retrofit, retire or replace older diesel vehicles including school buses, construction equipment and garbage trucks.

As depicted in Figure 4, Connecticut has had numerous diesel reduction projects across the state and continues to be recognized as a national leader in reducing harmful emissions of diesel exhaust.

Figure 4



Efforts to reduce diesel emissions include:

- To date, 291 school buses have been equipped with retrofit equipment to reduce diesel emissions in New Haven, Newington, Norwich, Old Lyme and Stamford.
- Connecticut's Clean Air Construction Initiative has resulted in 150 pieces of construction equipment being retrofitted with diesel emission reduction equipment.
- Retrofit equipment has been installed on 31 transit buses in Stamford and projects to retrofit 191 transit buses in Hartford and 84 in New Haven are currently in progress.

The Connecticut Clean Diesel Plan, developed in response to Public Act 05-7, presented a comprehensive diesel reduction strategy to reduce the health risks from diesel air pollution consistent with the reduction targets in the 2005 Climate Change Action Plan. We continue to work with other stakeholders to move forward on the recommendations presented in the plan to pursue opportunities for funding the priority sectors identified for immediate action.

Anti-Idling Strategy

The Department has implemented the recommendations in the Connecticut Clean Diesel Plan by developing an anti-idling strategy. This past year the Department has made progress on several fronts with this strategy.

Educating the Public

Anti-idling signage provides on the spot notice to drivers and is critical to educating the public and improving compliance rates. Over the last year the Department has provided anti-idling signs to approximately 80 school districts some of which are Regional School Districts heavily reliant on busing students. The Connecticut Department of Transportation is also assisting the Department in this effort and has posted signs at rest stops in the state to effectively target the on-road transport sector.

The Department is in the process of developing a public relations strategy to increase awareness and to change the behavior of the general public, fleet operators and construction firms.

Improving Enforcement Tools

Enforcement of idling regulations is not new but it is being specifically targeted in order to increase compliance rates in the mobile source sector. The Department has redoubled and enhanced its enforcement of anti-idling regulations Sec. 18(b)(3)(C) by identifying substantial targets and leveraging communications opportunity around violations. The Field Operations Unit has dedicated staff to specific surveillance and inspection operations targeting warehouses, distribution locations, bus depots, and Bradley Airport. Other field staff have provided assistance by handing out brochures to those operating idling vehicles. The Department has participated in regional efforts to develop a model rule for idling regulation and has twice advanced legislation to improve enforcement by making excess idling an infraction.

Targeting Key Sectors

Waterfront ports for the transport of goods generate idling emissions from a variety of engines including cargo handling equipment, drayage trucks and passenger vehicles queued up for ferries; each activity creates its own unique challenges to limiting idling. This past year the Department has provided outreach to the port authorities at Bridgeport and New Haven including plans for posting signs at the ferry queue in Bridgeport and in the neighborhoods surrounding the port facilities in New Haven. In order to encourage inter-state consistency, the Department is also participating in the Regional Ports Workgroup of the New England Diesel Collaborative, which has identified excessive idling as an issue of common concern.

Public Access Improvements

New Website Launched

In January 2007, the Department launched its new website - <http://www.ct.gov/dep> - that offers more detailed and complete information about agency programs and initiatives and other environmental issues.

The website has been redesigned to be consistent with other state agencies and to provide a more comprehensive and 'topic oriented' approach to agency information, making it more accessible and easier to navigate for the general public and the regulated community. The range of information available on the Department's website has been expanded to better serve the needs of businesses, individuals and other stakeholders, and to promote social and economic development in Connecticut that is in balance with the natural environment.

The Department's new website better reflects the priorities of the agency. A new section on the website was created, for instance, to address land resources and planning. Another new topic under the main menu is "Environmental Protection Begins with You" which provides information for individuals about what they can do to help protect the environment at home, at work, and in the community. A new webpage focusing on Public Participation pulls together links to the Department Calendar, Volunteer Opportunities, News Releases and more. Also now available are all Department regulations and all agency-issued public notices, including notices for proposed regulations, and proposed general and individual permits.

File Room Re-designed

As information accessibility has evolved, so have the expectations for immediate access to accurate and complete information. In order to address this need, the Department has embarked on a major re-design of the File Room.

The public and Department staff access records in the File Room daily to research site information and compliance histories. It houses approximately 8 million files and consumes over 100,000 linear filing inches. There has been little done to improve the operation and infrastructure in the File Room since its inception in 1993.

The File Room re-design project includes a new infrastructure to house, organize, and manage the physical elements of Records Management. A High Density Mobile Aisle system has been installed to accommodate the existing universe of documents and provide slightly over 50% growth potential. A new Uniform Filing System has been implemented to provide standards by which files are organized, indexed, and accessed.

II. Measuring Progress

The Department continues to make progress achieving clean air, clean water, and clean lands and protecting and enhancing natural resources and habitats. Great efforts have been made to report and identify meaningful performance measures that reflect on the State's environmental quality. The Department measures performance in a number of ways that range from reporting on longer-term environmental results and outcomes to shorter-term compliance rates and Department outputs and activities.

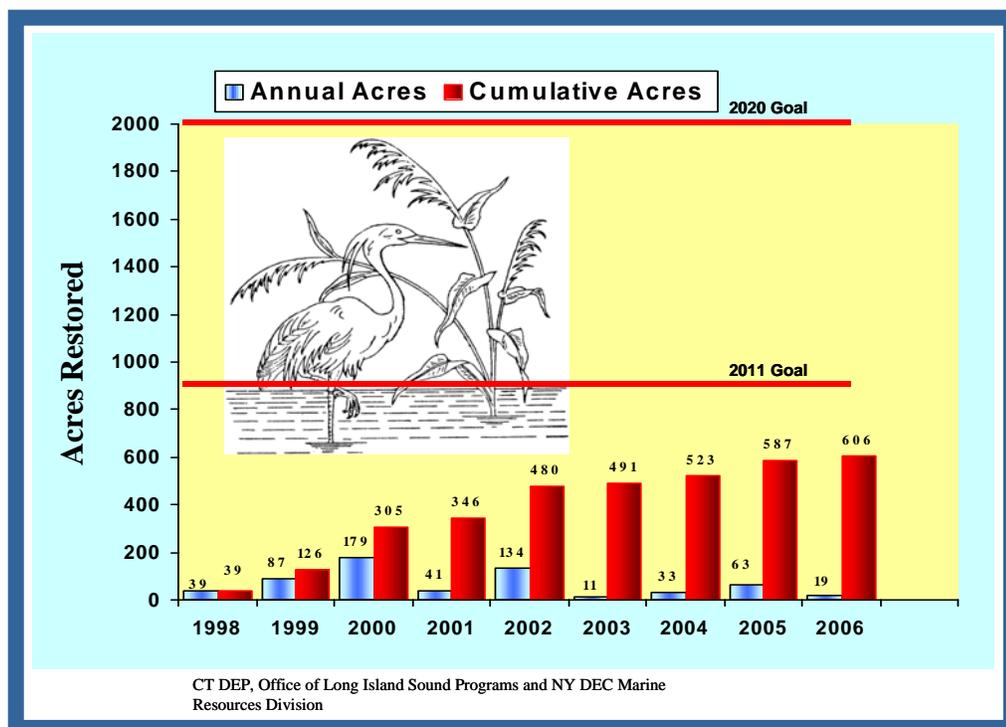
State of the Environment- Results and Outcomes

The following State of the Environment section reports on long-term measures of environmental quality such as air or water quality, species populations and restoration efforts.

Acres of Coastal Wetlands Restored

The coastal habitats of Long Island Sound ("LIS") are exceptionally productive and biologically diverse, and important to the economic and ecological integrity of the Sound. The Long Island Sound Study ("LISS") partners have been active in restoring wetlands and other coastal habitats around the Sound.

Figure 5

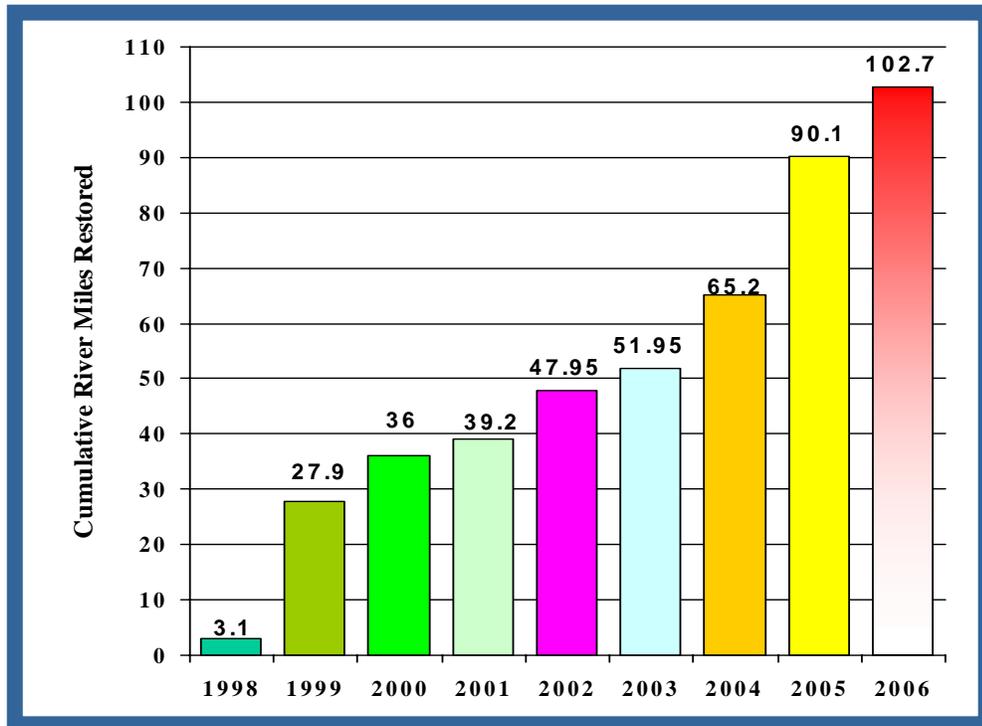


- As of 2006, more than 600 acres have been restored through projects such as the removal of tide gates, installation of larger culverts, removal of fill and control of invasive and non-native subspecies of common reed.
- In September 2006, the LISS Policy Committee (CTDEP, NYSDEC, and EPA Regions I and II) signed a new Memorandum of Understanding in support of habitat restoration for the next five years.
- The Memorandum establishes goals of restoring an additional 300 acres of coastal habitat between 2006 and 2011, for a 2011 goal of 886.5 acres, and attaining the full 2000-acre restoration goal by 2020.

Habitat Conservation and Restoration

Restoration of fish passage by removal of dams and other obstructions allows fish to move between the brackish waters of LIS to freshwater rivers for spawning or growth. In 1998, in partnership with the LISS, Connecticut and New York established a goal by 2008, of restoring 100 miles for fish passage in rivers where dams and other structures had blocked fish migrations.

Figure 6- Miles of Migratory Fish Corridor Restored

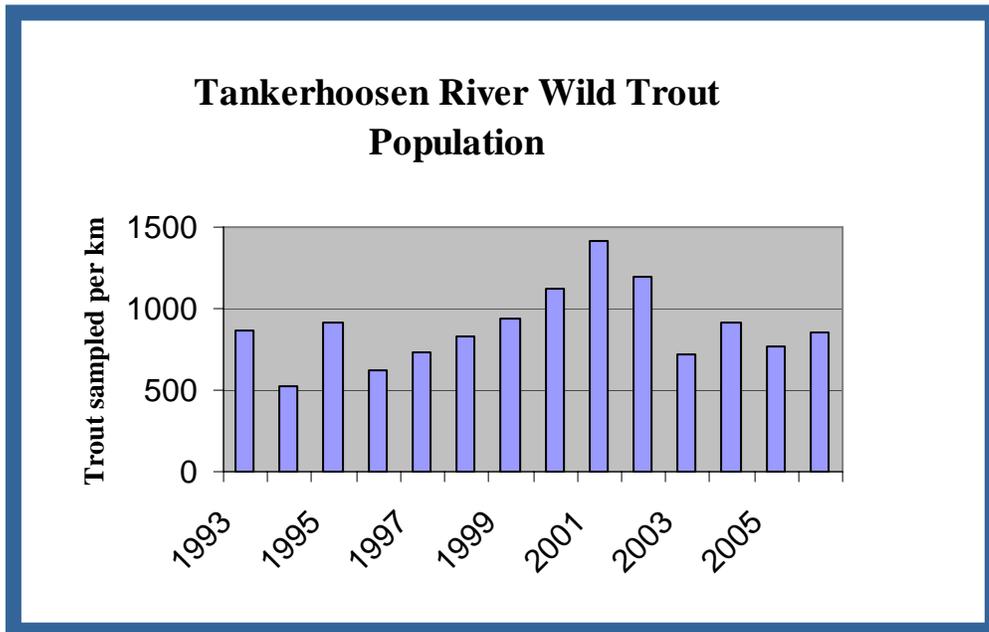


- The 100 mile goal was attained during 2006, primarily through dam removal and installation of fish passageways where dams and obstructions were not removed.
- The Memorandum of Understanding for habitat restoration sets the goal of restoring an additional 50 miles of riverine migratory corridor between 2006 and 2011, for a total goal of 150 miles by 2011.

Fisheries Management and Conservation

Fish populations in rivers, streams, lakes and ponds are monitored by the Department to evaluate the impact of recreational fisheries and to assess the health of aquatic ecosystems. Monitoring encompasses approximately 100 streams and 30 lakes annually.

Figure 7



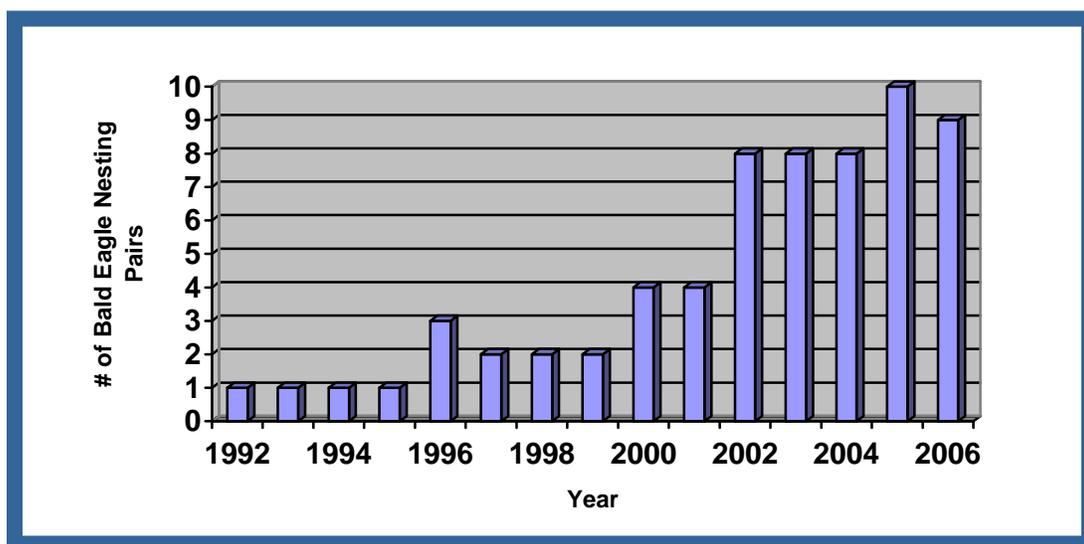
- Connecticut has twenty-nine designated Wild Trout Management Areas inhabited by self-sustaining populations of brook trout and brown trout. These species require clean cold water to prosper and are good indicators of environmental quality. Wild trout are also highly regarded and sought after by anglers.
- The Tankerhoosen River in Vernon is home to Connecticut's first Wild Trout Management Area (established in 1993). Annual monitoring of the trout population indicates that habitat, water quality, and fish populations are being effectively conserved.
- The abundance of wild trout in the Tankerhoosen River is primarily determined by variation in natural conditions. Samples average approximately 800 – 900 trout per stream kilometer with higher abundances following years with favorable rainfall and moderate temperatures and lower abundances following years with droughts and heat waves.
- Wild trout populations in many Connecticut waters exhibit more extreme variation in abundance that can be attributed to the deleterious effects of human activity such as contamination of waters or disturbance of flow.

Restoration of Bald Eagles in Connecticut

For the first time since the 1950s, a pair of bald eagles nested in Barkhamsted, Connecticut, in the summer of 1992 and produced 2 healthy chicks. Since 1992, the number of nesting pairs has increased in Connecticut as shown in Figure 8. This is due in large part to the increased protection of nest sites, restoration of habitat, and efforts to improve water quality.

Presently, up to 100 eagles winter in Connecticut from December to early March along major rivers and at large reservoirs. This number is slowly increasing, but there is still a challenge to reconcile human population growth and urban/suburban sprawl with the specific needs of this endangered species.

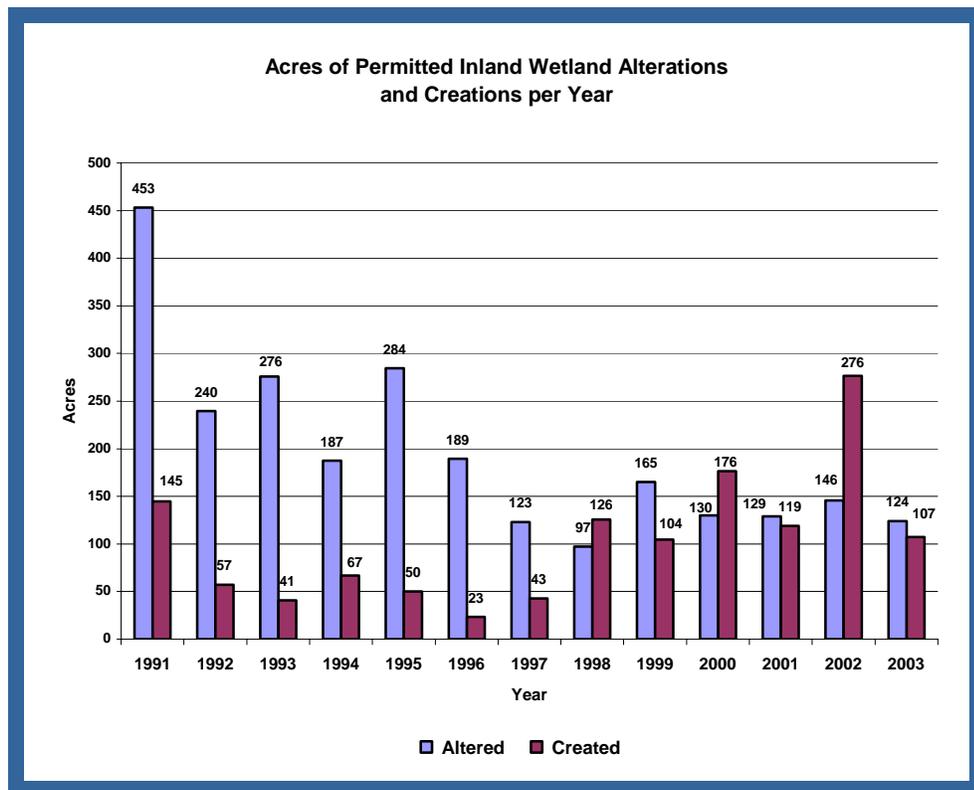
Figure 8



The bald eagle was first declared an endangered species with the passage of the federal Endangered Species Act in 1973. Due to the banning of organochlorine pesticides, success of reintroduction programs through fostering of nestlings and hacking of fledglings, habitat and nest protection measures and other efforts to restore bald eagle populations, the U.S. Fish and Wildlife Service ("USFWS") reclassified the bald eagle from endangered to threatened in the lower 48 states in 1996. While this reclassification does not alter conservation measures already in force to protect the bald eagle and its habitats, it is a step closer to the main goal of the Endangered Species Act, which is to restore endangered and threatened plants and animals to the point where they are viable, self-sustaining members of their ecosystems. Despite the reclassification of the bald eagle's status by the USFWS, the species remains endangered in Connecticut.

Inland Wetland Alterations

Figure 9



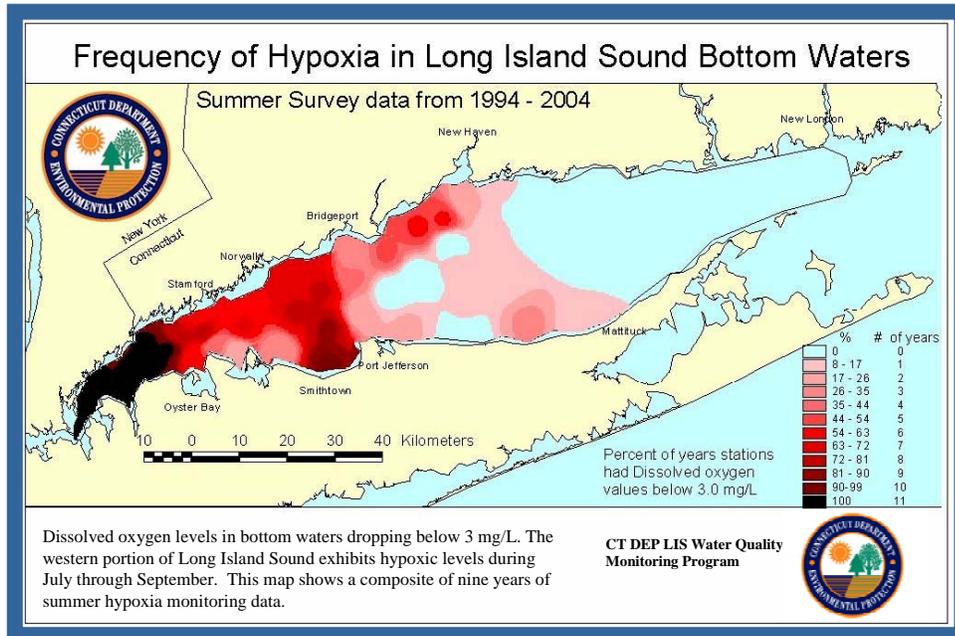
The long-term trend in Connecticut since 1990 indicates a steady decrease in the acres of permitted wetland alterations over time and an increase in wetlands creations over the same time period. The inland wetland (non-tidal) data for 2003 indicate that the mitigation of permitted inland wetland alterations is a continuing trend in Connecticut. Figure 9 shows that for 2003, 124 acres of inland wetlands were permitted to be altered while 107 acres were authorized to be restored, enhanced or created. The six-year average from the period of 1998 to 2003 shows that 1.1 acres are being created for each acre altered for a net gain of 117 acres.

Efforts to Reduce Hypoxia and Excessive Nitrogen

Since 1985 CTDEP has been engaged in the Long Island Sound Study partnership and investigating the causes and consequences of low dissolved oxygen, or "hypoxia", in western Long Island Sound ("LIS"), as well as implementing management activities to control sources of nitrogen, which is the dominant cause of hypoxia. 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.

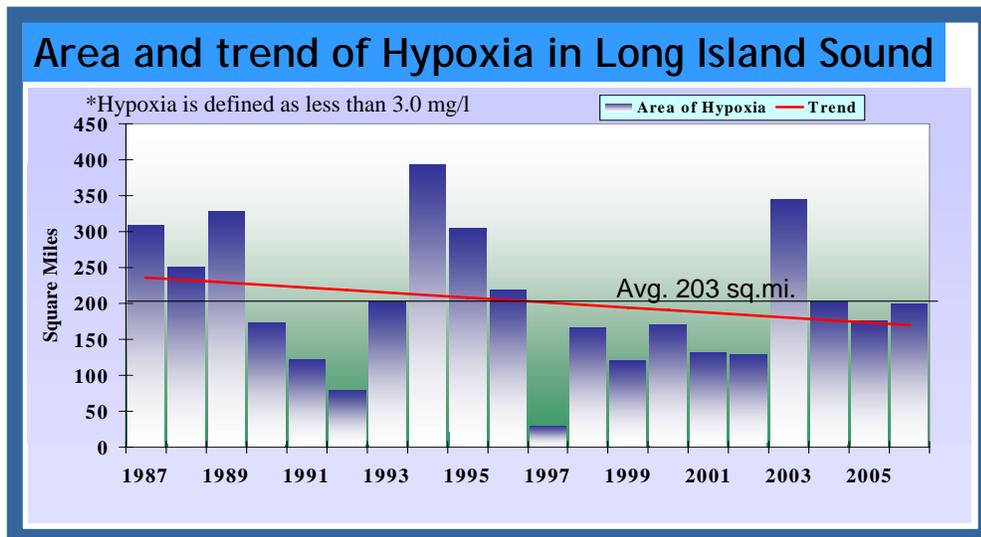
Efforts to Reduce Hypoxia and Excessive Nitrogen *(continued)*

Figure 10



- Figure 10 shows a 10-year composite of the geographic distribution of hypoxia, with the darker areas identifying locations where hypoxia below 3 mg of dissolved oxygen per liter (or “parts per millions”) recurs most frequently. All shaded areas at least periodically fall below both CT and NY water quality standards and criteria for dissolved oxygen.

Figure 11

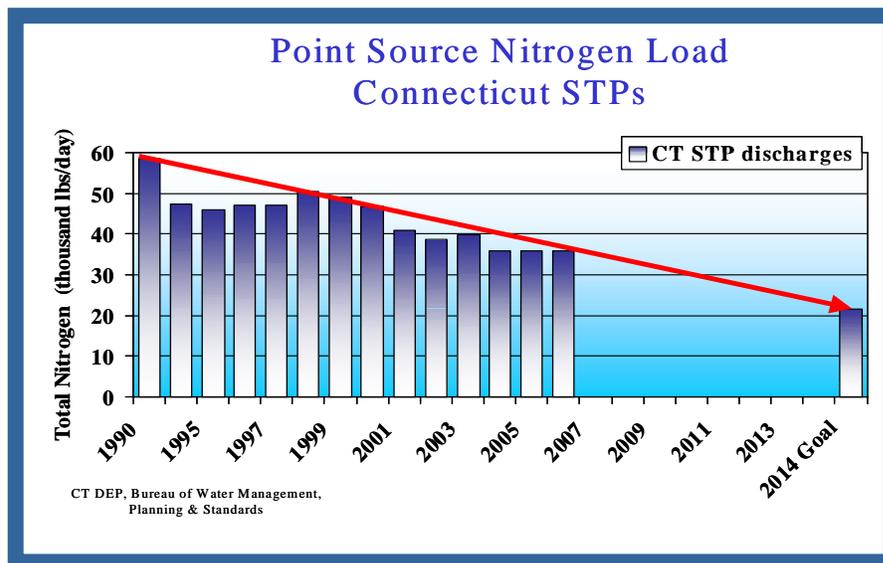


- Figure 11 shows the area affected by hypoxia (less than 3 ppm) on an annual basis and the trend, which has been towards improvement with less area affected over time.

Efforts to Reduce Hypoxia and Excessive Nitrogen *(continued)*

- The annual area affected is reduced by lowering nitrogen load, but, even if nitrogen loads are not reduced, there would be wide variation in hypoxic area because of natural weather conditions, especially annual rainfall and summer temperatures.
- In the past 10 years of the 20-year period of record, the area of hypoxia has exceeded the long-term average of 203 square miles only once (in 2003).
- The trend of improvement has also had to overcome a general warming trend, with 9 of the last 10 years being among the 25 warmest years on record nationally, and 2006 being the warmest year observed in the historical record. Warmer water holds less dissolved oxygen than cooler water.

Figure 12

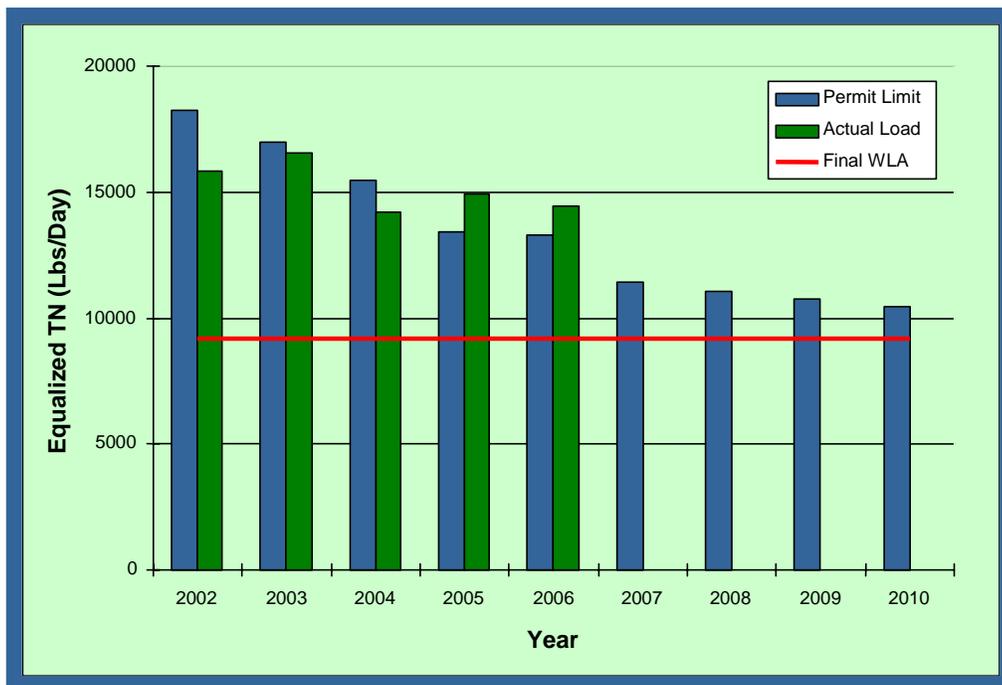


- Sewage treatment plants have been identified as a predominant source of nitrogen to LIS. The Department has issued a general permit that assigns annually decreasing nitrogen discharge levels to each Connecticut plant that collectively will meet the 64% target reduction for treatment plants by 2014.
- Since 1993, the State has financed nearly \$650 million in sewage treatment plant upgrades that included a nitrogen component, of which \$200M was specific to nitrogen removal capital costs. In that time, 33 plants have been upgraded and are now achieving significant nitrogen reductions.
- As a result, Connecticut sewage treatment plants have achieved a 42% reduction in 2006, more than two thirds of the way towards meeting the nitrogen reduction goal of 64%.

Acceleration of Nitrogen Reductions

To facilitate and accelerate nitrogen reductions from sewage treatment plants, Connecticut has instituted a nitrogen trading program for 79 municipal facilities. The program was initiated in 2002 and has recently completed its fifth trade. Under the nitrogen trading program, a plant that removes more nitrogen than required is able to sell earned credits to a credit exchange, thus receiving a financial benefit. The credits may then be purchased by a plant that is discharging excess nitrogen and needs to obtain nitrogen credits.

Figure 13

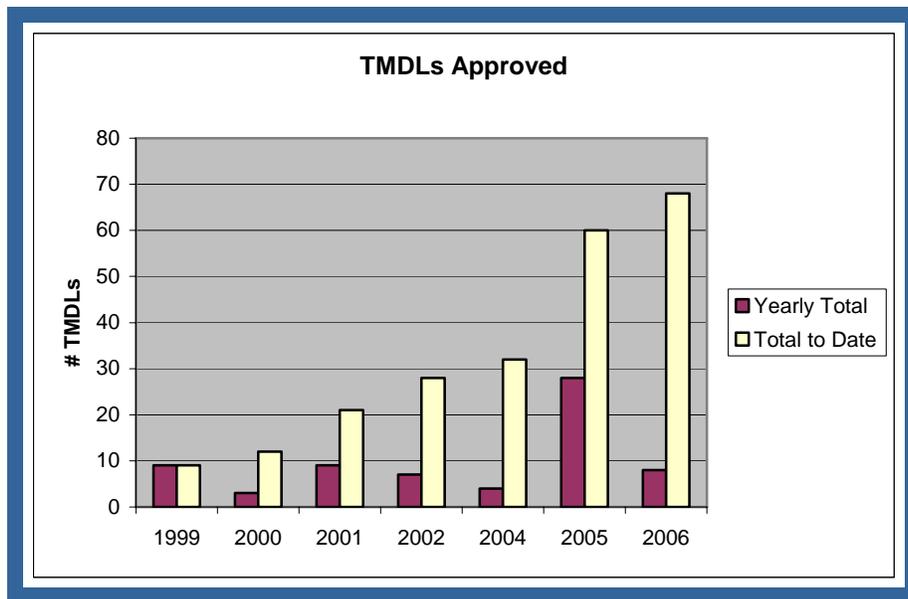


- Although the actual loads fluctuate above and below the annual permit limits because of weather conditions and the pace of nitrogen upgrade construction, progress towards the final waste load allocation (“WLA”) has exceeded the requirements of the Total Maximum Daily Load (“TMDL”) identified in the Water Quality Management Plan for Long Island Sound.
- In 2006, total nitrogen loads from the 79 facilities in aggregate was 14,439 equalized pounds of nitrogen per day, which represents a 42% reduction from the baseline and 67% progress towards the final WLA. The TMDL requires only 40% progress towards the final WLA by 2006.
- The pace of nitrogen removal is expected to increase as new nitrogen removal projects come on line, provided Connecticut’s Clean Water Fund is adequately funded. In 2006, Clean Water Fund limitations left several projects that were ready to implement waiting for funding because of shortfalls in available financing.

Reducing Adverse Impacts to Waterbodies- Total Maximum Daily Load (“TMDL”)

A TMDL is a calculation of the maximum amount of a pollutant from all contributing sources (e.g., point sources, nonpoint sources and natural background) 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.

Figure 14

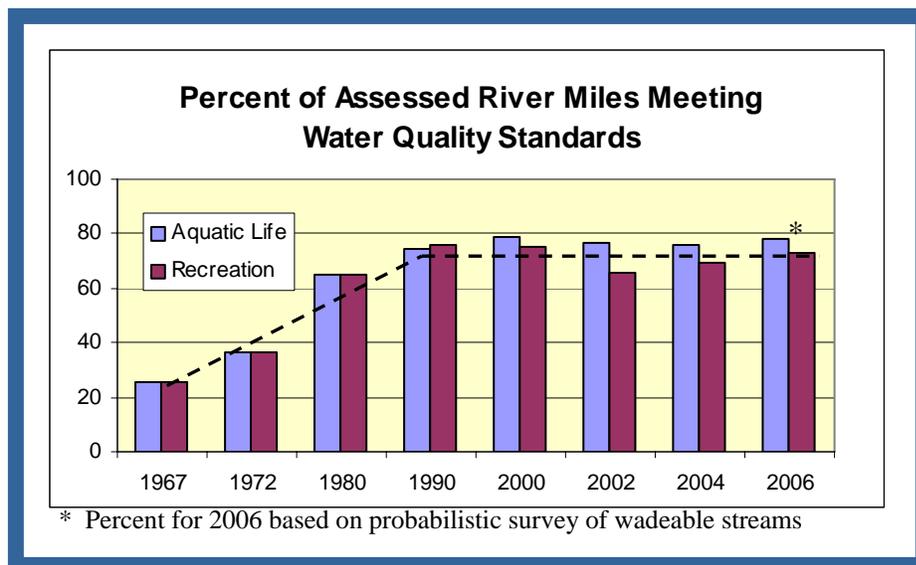


- A variety of TMDLs have been developed for both fresh and estuarine waters by the Department. To date, the EPA has approved 68 TMDLs in Connecticut affecting a total of 32 waterbodies. The types of pollutants addressed in these TMDLs ranged from metals, chlorine and ammonia to bacteria, nitrogen and phosphorus. During 2006, 5 TMDLs affecting 4 waterbodies were prepared and submitted to EPA for approval.
- Strategies to reduce pollutant loading include permitting and enforcement of point discharges, upgrade of sewage treatment plants, and reduction of nonpoint source discharges and stormwater run-off.

Water Quality Protection

Water quality is assessed in terms of how well a waterbody supports its designated uses, comparing monitoring data to criteria adopted in the CT Water Quality Standards. The various types of data used for assessments include: physical, chemical, biological community, indicator bacteria, aquatic toxicity, tissue contaminant, sediment chemistry/toxicity, as well as knowledge of pollutant sources (*e.g.*, combined sewer overflows). It is important to know that many changes have occurred in monitoring coverage and assessment methodology over the time span represented in Figure 15 below. Significant improvements in data collection and evaluation as well as stream measurement affect the trend statistics.

Figure 15

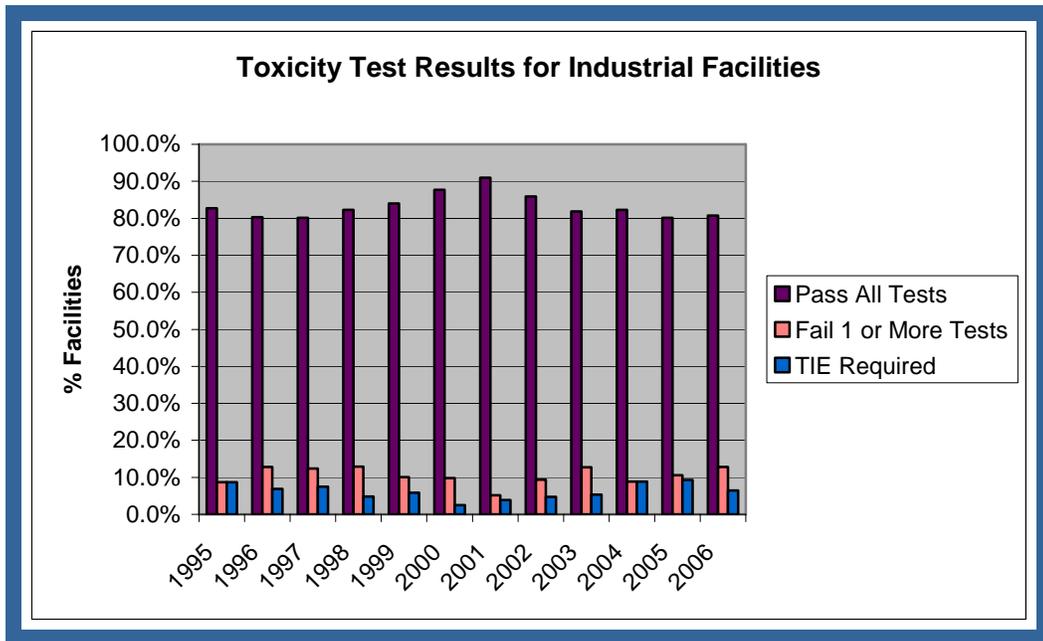


- The number of monitored stream miles was increased significantly between 1996 through 2001 through a rotating basin approach targeting one major drainage basin each year for five years.
- Between 2002 and 2004, the Department conducted a two-year probabilistic survey of wadeable streams (using a statistically representative random sample) and reported the results in 2006. This allowed characterization of water quality conditions of all wadeable streams in Connecticut.
- Significant progress was made between passage of the State's Clean Water Act in 1967 and the 1990s in addressing gross industrial and sewage pollution due to the Department's aggressive permitting and enforcement efforts and sewage treatment plant upgrades. Although a number individual streams or stream segments have improved in recent years, overall progress has slowed due to the complexity and cost of identifying and addressing remaining water quality problems.

Minimizing Impacts on Aquatic Resources

Impacts to the aquatic resources of the State are evaluated using toxicity tests that expose aquatic organisms to either surface waters to test ambient conditions or wastewater discharges to test effluent toxicity. The tests evaluate potential impacts to fish and invertebrate populations in Connecticut's rivers and streams.

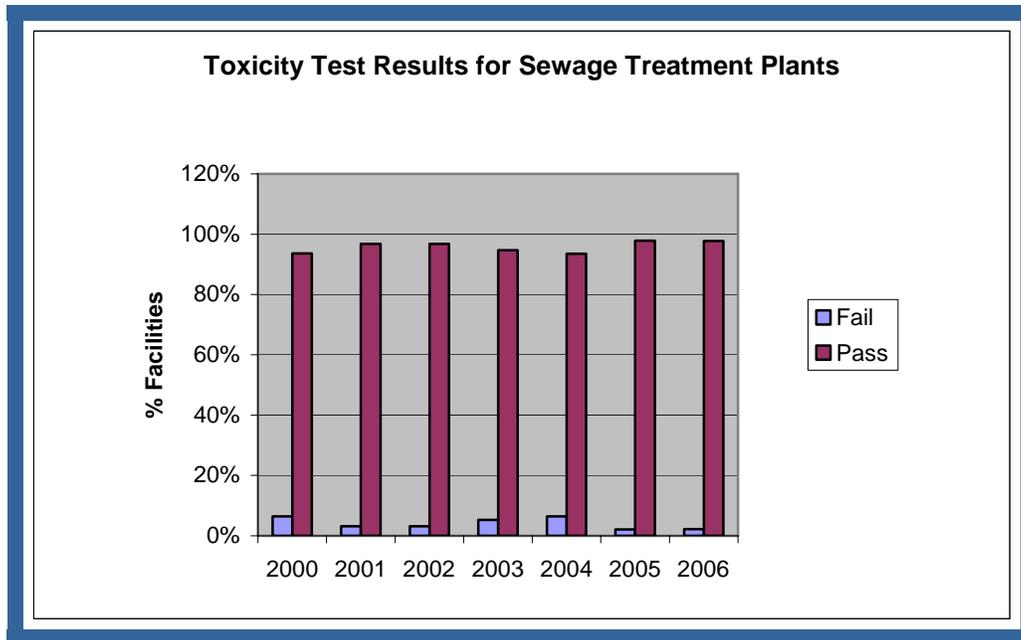
Figure 16



- A total of 156 industrial facilities monitored 276 discharges to surface water using toxicity tests. Less than 20% of the effluent samples failed at least one test.
- Of the 30 facilities that failed to comply with discharge toxicity limitations, Toxicity Identification and Reduction Studies ("TIEs") were triggered at 10, requiring an investigation into causes of toxicity in these effluents.

Minimizing Impacts on Aquatic Resources (continued)

Figure 17



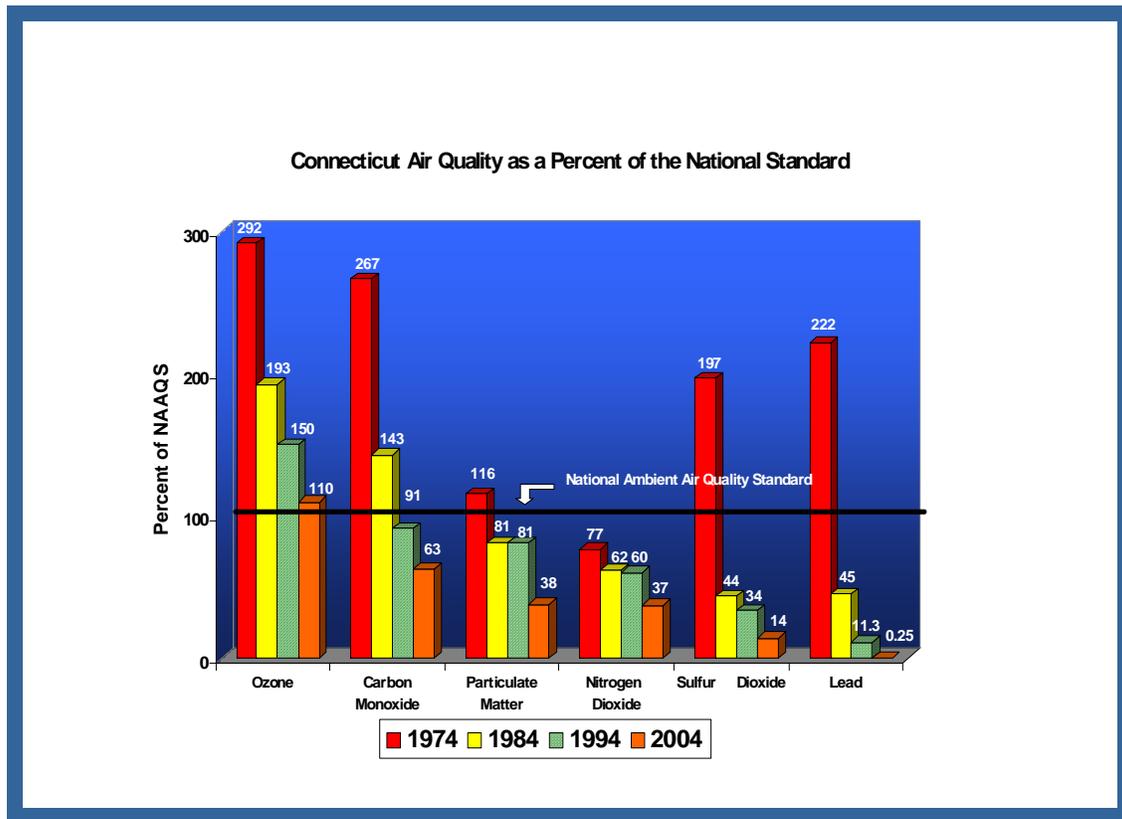
- 91 sewage treatment plants conducted a total of 280 toxicity tests. Only two sewage treatment plant facilities failed to comply with discharge toxicity limitations, defined as failing either two consecutive or three or more nonconsecutive toxicity tests within a year.

Progress on Improving Air Quality

Air pollution can adversely affect critical functions in the earth's atmosphere and high levels of air pollution can affect human health by triggering asthma attacks and aggravating allergies.

Over the past three decades Connecticut has made remarkable progress in improving poor air quality. Figure 18 highlights the air quality trends for the six criteria pollutants. Despite continued increases in vehicle miles traveled and business productivity, Connecticut is now classified as in "attainment" for PM10, carbon monoxide, lead, nitrogen oxides, and sulfur oxides.

Figure 18

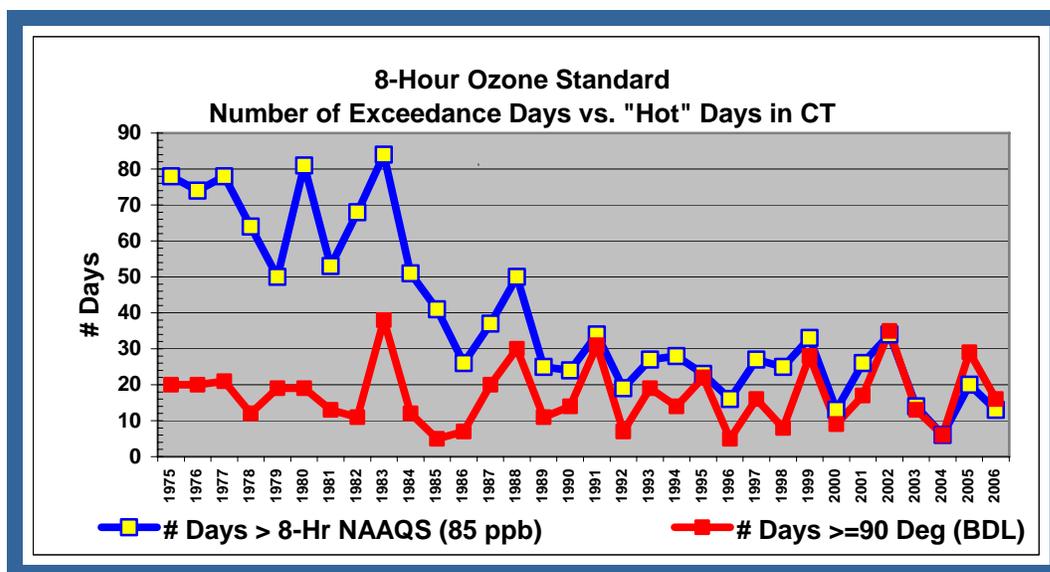


When the State has been designated as in attainment for an air pollutant, all regions of the State are in compliance with all the health-based standards for the particular pollutant. The designation of non-attainment for an air pollutant means that one or more of the standards for the pollutant have been violated in one or more regions of the State. Connecticut is in non-attainment for ozone and daily PM2.5 for portions of the state. In an effort to mitigate the harmful effects of these pollutants, numerous emission reduction strategies are being implemented to achieve healthy air quality within the State.

Ozone Attainment Challenges

In the last decade, EPA has shifted from a 1-hour ozone standard to an 8-hour ozone standard. While significant progress has been made in reducing ozone, monitored levels continue to exceed National Ambient Air Quality Standards (“NAAQS”) for 8-hour ozone. This pervasive pollutant is responsible for serious health and ecological impacts. During the summer months, Connecticut typically experiences ten to twenty days when ozone levels exceed federal standards.

Figure 19



There continues to be an overall downward trend in the number of ozone exceedances, even when days where temperatures in the state have been above 90 degrees are taken into account. To date, the Department’s design has focused on strategies to reduce emissions of ozone precursors such as oxides of nitrogen (“NOx”) and volatile organic compounds (“VOCs”) over the entire ozone season, May through October. An emerging focus has been to look at the environmental conditions on the “peak days” or high electric demand days, specifically the days of unhealthy air quality that often coincide with days of peak energy demand. Reductions of pollutants on these High Electric Demand Days (“HEDD”) will be key to meeting the ozone NAAQS. In an attempt to alleviate this problem, the Department has been participating in a regional effort led by the Ozone Transport Commission (“OTC”) to identify short and long term NOx reduction goals for high electric demand days.

Figure 20

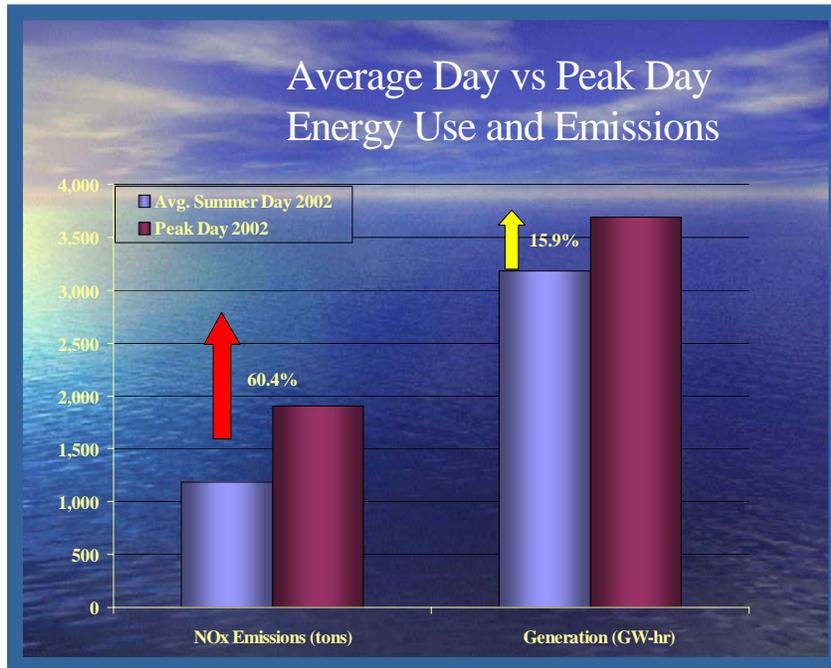


Figure 20 illustrates how in comparing energy use and emissions on the peak day, the increment of energy provided comes with an environmental cost in terms of increased emissions of NOx. A mix of energy strategies that include energy efficiency, energy conservation, load reduction and load shifting and other emission control strategies are being discussed and considered as part of an important effort to reduce NOx emissions on HEDD and to ensure both Connecticut's energy and environmental goals are met.

Progress In Meeting the Ozone Standard

A number of federal and state programs are, or soon will be, in place to further reduce the air pollutant emissions that cause the formation of ground-level ozone. On the federal level, EPA is requiring cleaner fuels and emission controls for new cars and trucks, as well as for new engines used in non-road applications such as construction and industrial equipment, boats, locomotives, and commercial and residential lawn mowers and other landscaping equipment. On the state level, the Department's current and upcoming plans include implementation of more restrictive emission limits for electrical power plants and industrial/commercial boilers, asphalt paving operations, industrial and commercial solvent usage, gasoline cans and other consumer products, and paints and other architectural coatings.

As a result of these new control programs, ozone-producing emissions of VOC and NOx are projected to decrease by 30% and 42%, respectively, between 2002 and 2012, helping Connecticut to achieve the 8-hour ozone NAAQ. Figures 21 and 22 illustrate the projected trends for VOC and NOx emissions.

Figure 21

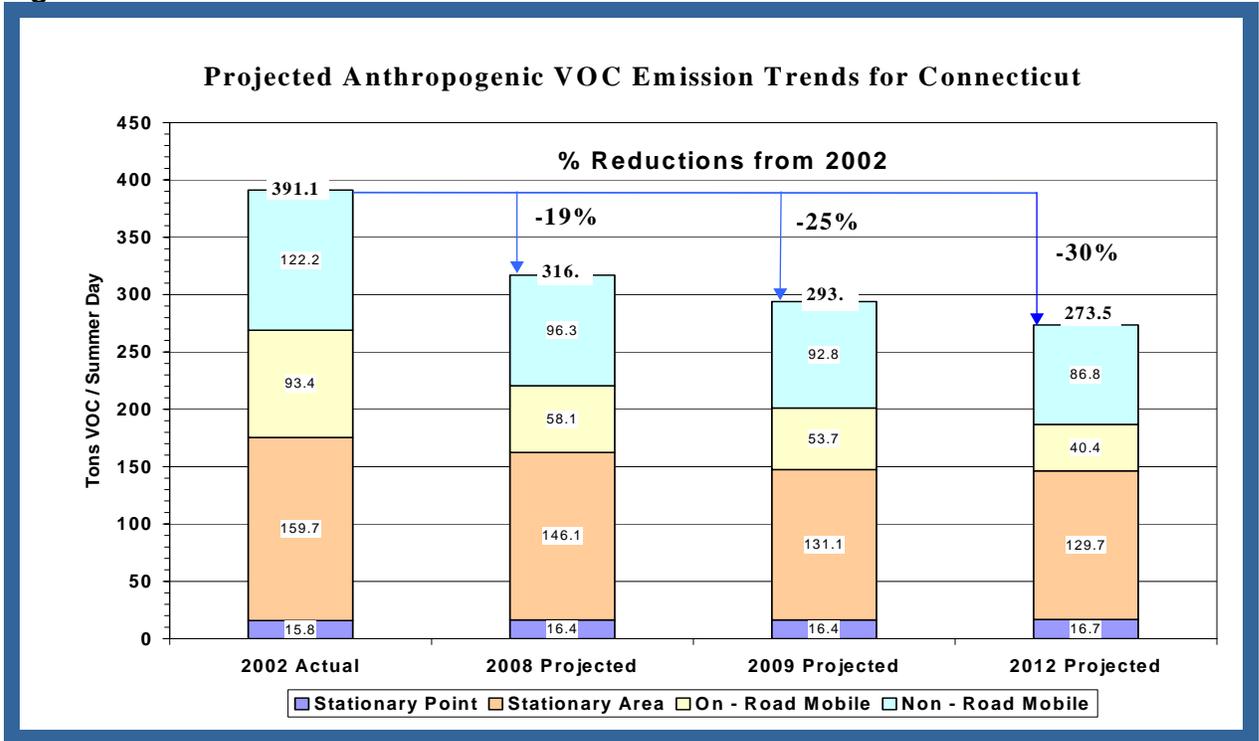
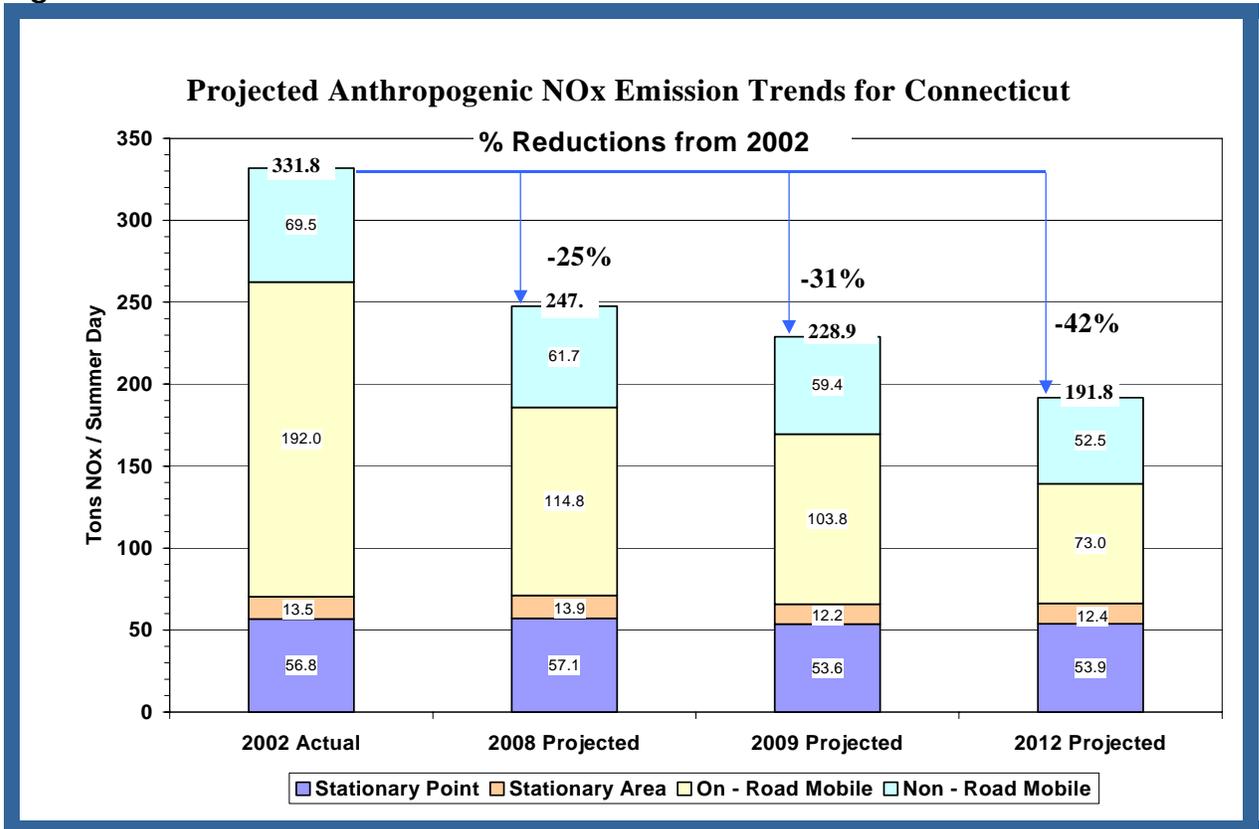


Figure 22

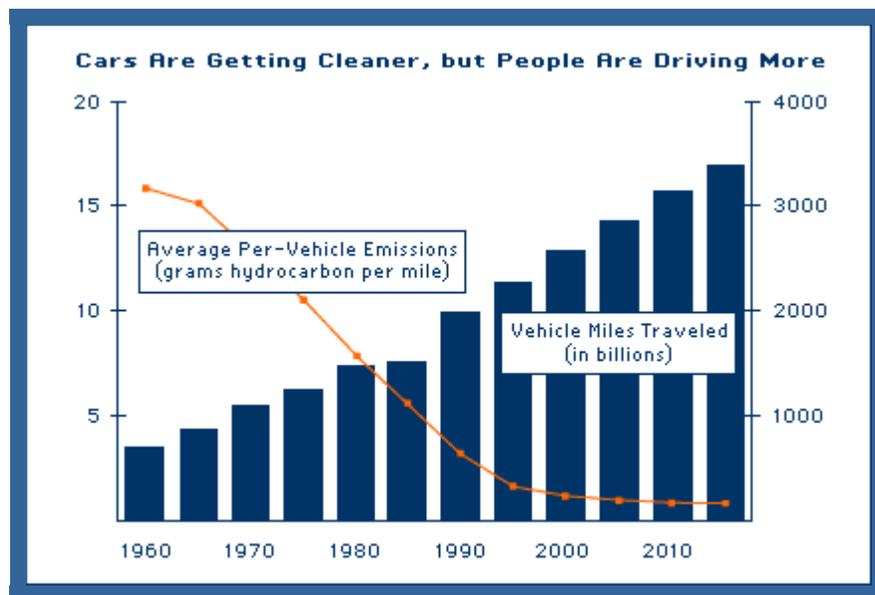


Reducing Emissions From Mobile Sources

Mobile sources, including on-road cars, trucks and buses and off-road construction equipment, contribute significantly to Connecticut's air pollution problem. The Department has been working hard to develop better solutions. Strategies such as encouraging the retirement of older dirtier vehicles to newer, cleaner ones, promoting equipment retrofits, encouraging better transit options, programs to reduce mobile source pollution must address not only vehicles, engines, and equipment, but also the fuels they use and the people who operate them. The road to clean air also depends on extensive collaboration with our partners including EPA; vehicle, engine, equipment and fuel manufacturers; state and local governments; transportation planners; the environmental community; and individual citizens.

This integrated approach to mobile source emission control is responsible for greatly reducing mobile source air pollution during the last three decades. Technological advances in vehicle and engine design, together with cleaner, higher-quality fuels, have reduced emissions considerably, even as people drive more miles. Of course growth in use of vehicles, engines, and equipment works against the improvements gained by making individual vehicles or engines cleaner. If our reliance on mobile sources keeps growing without further action, overall mobile source pollution will eventually outstrip these gains and could impact projections in the graphs above of emission estimates for 2009 and 2012. To avoid eroding the environmental benefits we have achieved in the mobile source sector, Connecticut will continue its efforts to promote even cleaner technology, retrofitting legacy engines as well as voluntary programs to reduce vehicle, engine, and equipment activity as part of the state's air quality solutions.

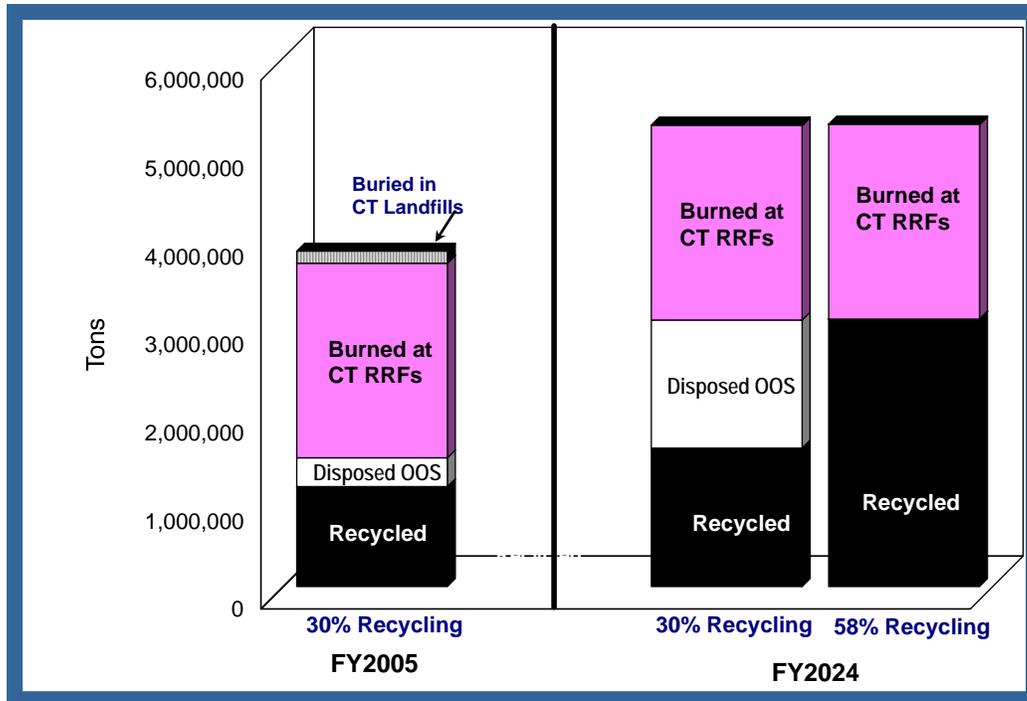
Figure 23



Solid Waste Management

The State Solid Waste Management Plan identifies a target of reducing the per capita municipal solid waste (“MSW”) disposal rate from an estimated 0.8 tons/person/year in 2005 to 0.6 tons/person/year by the year 2024. To achieve that reduction, Connecticut would need to achieve a 58% MSW disposal diversion rate by the year 2024. Currently the estimated state-wide recycling rate is 30%.

Figure 24. Management of Connecticut MSW: 2005 conditions and 2024 projections.



- Figure 24 compares current (2005) MSW management in Connecticut to that projected to the year 2024 under two scenarios: (1) the 2005 MSW recycling rate of 30% is maintained through 2024; and (2) an MSW recycling rate of 58% is achieved by 2024. Connecticut’s MSW in-state disposal capacity is based on assumptions regarding future disposal capacity at existing Connecticut landfills and resource recovery facilities; tons disposed out-of-state reflect projected in-state MSW disposal capacity shortfall.
- In 2005, MSW generated in Connecticut totaled 3.8 million tons. Of this total amount, 1.1 million tons was recycled, 2.3 million tons was disposed at in-state resources recovery facilities or at an in-state landfill, and 0.3 million tons was transferred to an out-of-state solid waste disposal facility.
- In 2024, MSW generated in Connecticut is projected to total 5.23 million tons. Two scenarios – using a 30% and a 58% recycling rate – are presented.
 - If Connecticut remains at the 30% recycling rate, then 1.57 million tons would be recycled; 2.21 million tons would be disposed at in-state

resources recovery facilities; and 1.45 million tons would be transferred to an out-of-state solid waste disposal facility.

- If Connecticut were to achieve a 58% recycling rate, then 3 million tons would be recycled, 2.2 million tons would be disposed at an in-state resources recovery facility, and there would be no MSW transferred out-of-state.

Figure 25. Projections of In-State MSW Disposal Capacity Shortfall

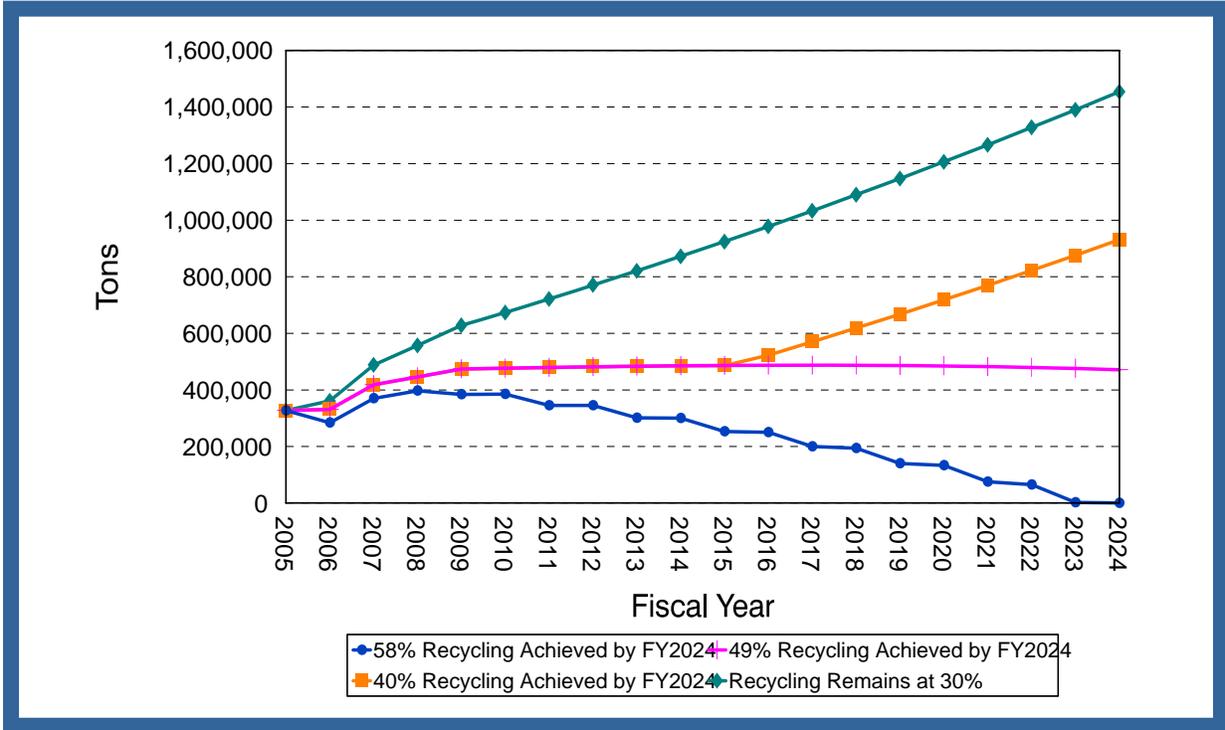


Figure 25 shows the projections of in-state MSW disposal capacity shortfall under four different rates of recycling. Unless Connecticut can successfully divert more waste from disposal, the in-state disposal capacity shortfall for MSW by 2024 varies at different recycling rates achieved: at 30% = 1.5 million tons; at 40% = 0.9 million tons; at 49% = 0.5 million tons; and at 58% = 0 tons.

Figure 26. Connecticut's Estimated MSW Recycling Rates per Material Sector for 2003

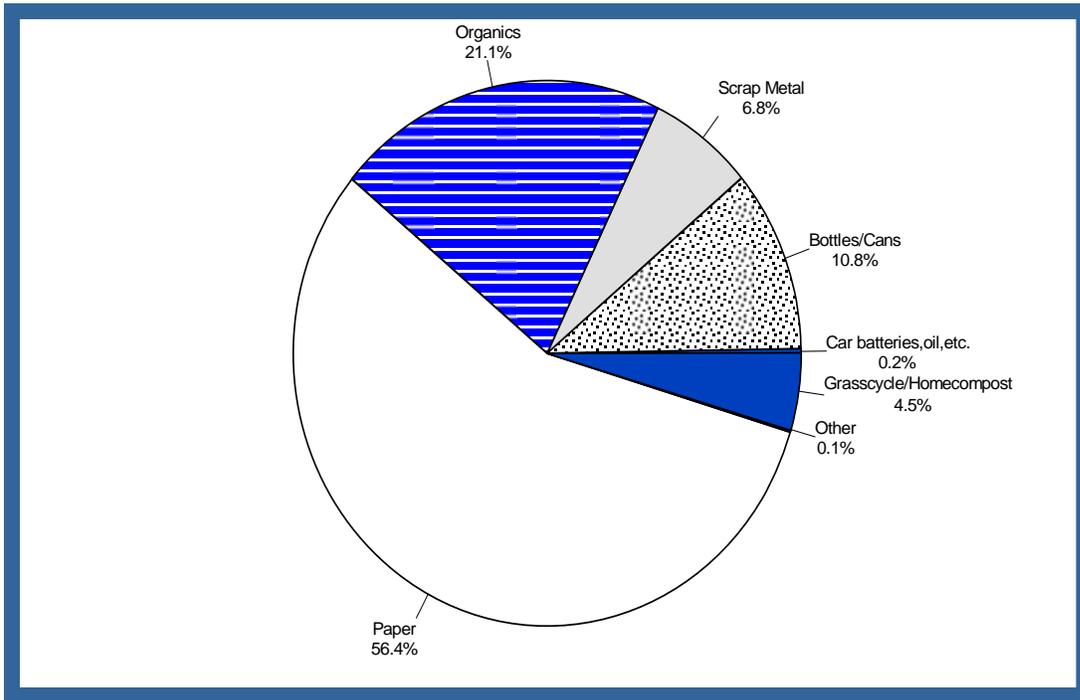


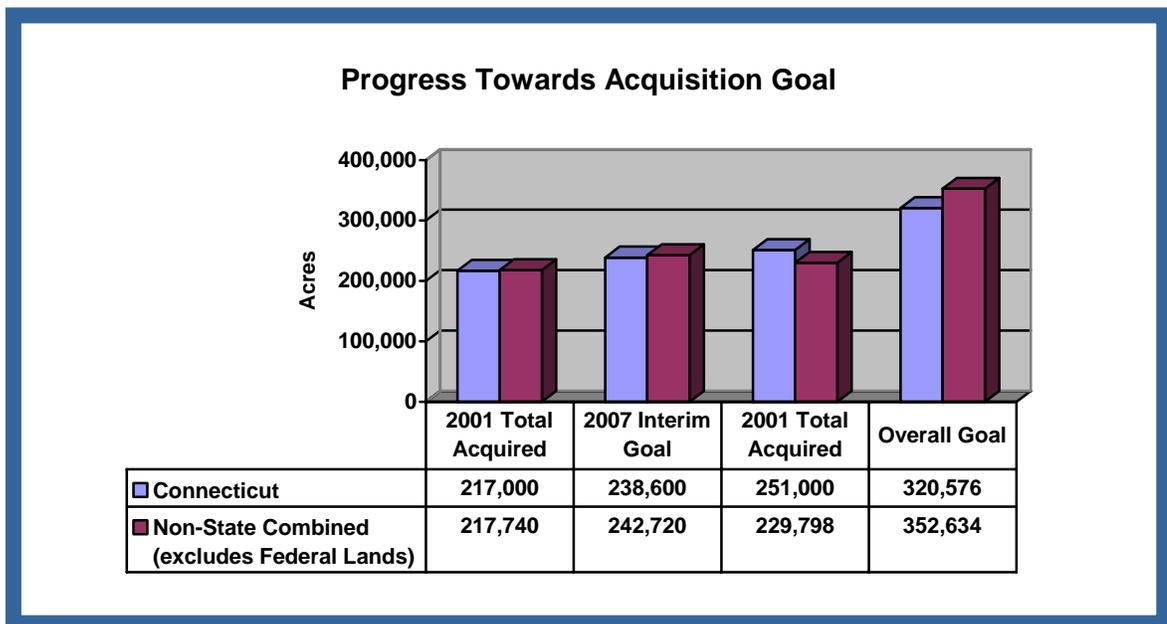
Figure 26 provides the breakdown by percent of recyclables per material sector for the year 2003. Paper consists of 56% of the recyclables; followed by organics (leaves and yardwaste) at 21%; bottles and cans at 10.8%; scrap metal at 6.8%; grasscycle/home compost at 4.5%, car batteries, waste oil, antifreeze, etc at 0.2%; and other material at 0.1%.

Increasing Protected Lands

As identified in [The Connecticut Green Plan: Open Space Acquisition 2001-2006](#) ("Green Plan"), Connecticut's vision for open space is to provide a diverse landscape that offers outdoor recreation to Connecticut's citizens, protects water supplies, preserves fragile natural communities and habitats for plants and animals, offers green spaces accessible to residents in cities, and provides a working natural landscape for the harvest of farm and forest products.

Connecticut is 3,205,760 acres in size. In 1997, the general assembly set a goal of preserving 21 percent (673,210 acres) of this land as open space available for recreation and required that 10 percent (320,576 acres) be protected by the State of Connecticut, and 11 percent (352,634 acres) be protected by municipalities, private non-profit organization, and water utilities (Class I and II watershed lands).

Figure 27



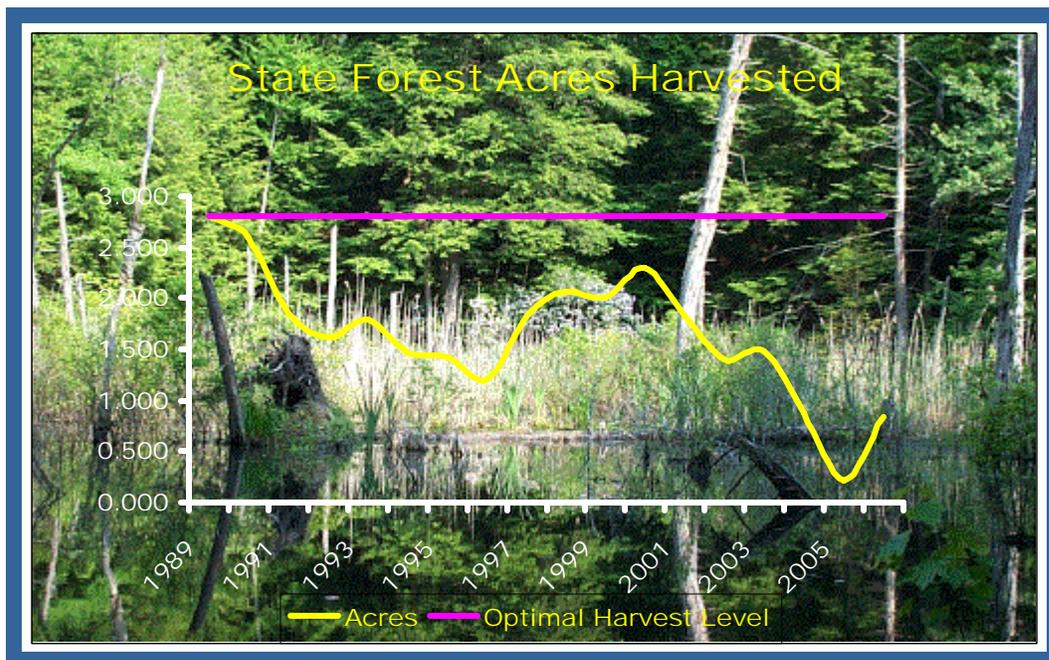
Since 1901, the State has acquired a total of 251,001 acres for its system of parks, forests and wildlife, fishery and natural resource management areas. This means that the state currently holds 78 percent of the open space land targeted for state acquisition. It is estimated that nonprofit land conservation organizations own 57,327 acres. Municipalities are estimated to own 74,971 acres of land as open space. Class I and Class II water company lands total approximately 97,500 acres. Together, open space acreage held by these non-State entities is 229,798 acres, which is 65 percent of their targeted open space goal. Figure 27 shows the progress made toward the acquisition goal as of early 2007.

Due to variations in funding, land offerings and opportunities, and other factors, new land acquisition and protection does not occur at a steady pace. To achieve the statutory goal for open space acquisition, on average, every five years the State needs to acquire 21,600 acres and to encourage our non-State partners to acquire 24,980 acres. From 2001-2006, the State acquired 34,001 acres or 157 percent of the 5-year average goal. The non-state partners are estimated to have acquired 12,058 acres or 48 percent of the goal.

Stewardship of the State Forest System

The Department is charged with the sound stewardship of forests, parks, and wildlife management areas owned by the State. Through the application of sound forest management science, the Department's Division of Forestry works to enhance the health, vigor and diversity of the State Forests. Utilizing detailed data collected from the forests, Department foresters develop 10-year plans of management and operational plans to guide and accomplish needed changes to the age and structure of forest stands. These changes increase the growth rate of the remaining trees and stimulate the development of seedlings and young trees, which will eventually replace the dominant trees as they age.

Figure 28



Presently, there are thirty-two State Forests, (169,250 acres), ranging from the first State Forest (Meshomasic) acquired in 1903, to the newest State Forest, (Centennial Watershed), dedicated in 2003. The State Forests constitute over 60 percent of all publicly-owned forested land in Connecticut (279,750 acres). Primary responsibility for management of these forests is assigned to the State Lands Management Program administered by the Division of Forestry.

Vigorous growth increases the forest's ability to withstand stresses such as diseases, insect infestations, periodic drought, air pollution, and natural disasters such as wind, ice and snow events. It also encourages increased diversity of species, age, size, and density. With increased diversity of forest growth comes a natural increase in diversity of forest-dependent wildlife species and increased opportunities for recovery of threatened species.

Essential to developing and maintaining a healthy, diverse forest is the ability to adjust forest density and species composition through judiciously harvesting the forest. The number of acres of State Forest harvested each year has mirrored the decline, rise, decline, and recent rise in staffing levels. Because careful harvesting is critical to managing a forest for long term health, vigor and diversity, the Department is

interested in seeking both additional resources and efficiencies in the use of existing resources so as to attain the optimal sustainable harvesting level of 2,800 acres per year.

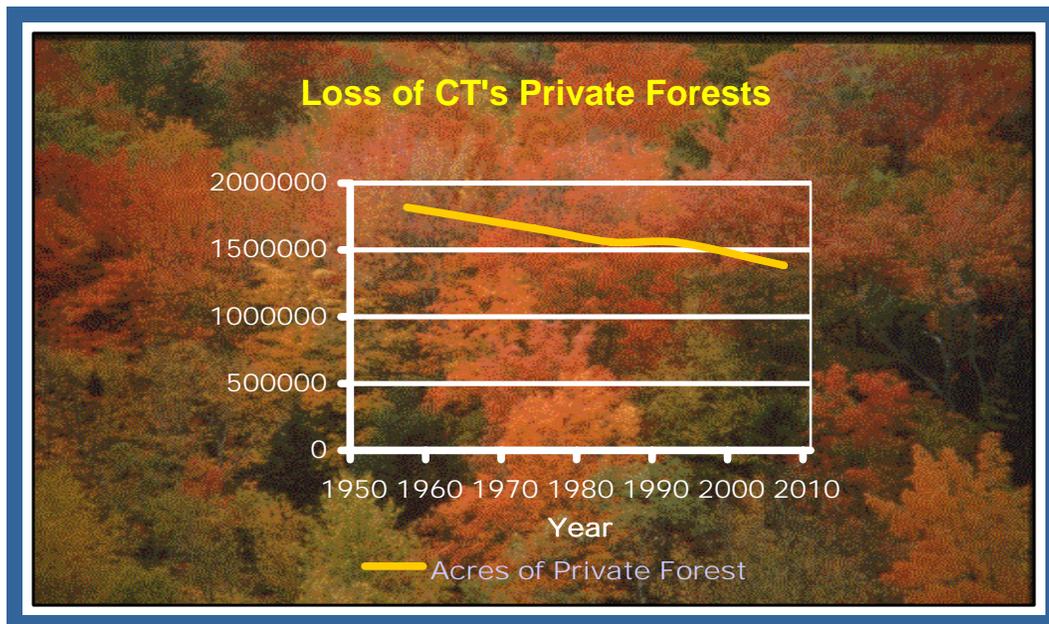
The State Forest system was originally designed to provide areas where proper forest management practices could be demonstrated for emulation by private forest landowners as well as provide a reliable source of wood fiber for Connecticut into the future. In recent decades the use of State Forests for unstructured recreation has increased.

The value of the State Forests and their management as a model of forestry management practices for private landowners increases as the amount of privately-owned forest land in Connecticut decreases (See Figure 29). For this reason, Goodwin State Forest in Hampton, for example, is currently being managed specifically to develop “outdoor classrooms” where a variety of forest management practices may be presented and explained to private forest landowners in workshop formats.

Reduction in the Rates of Fragmentation and Loss of Privately Owned Forest Land

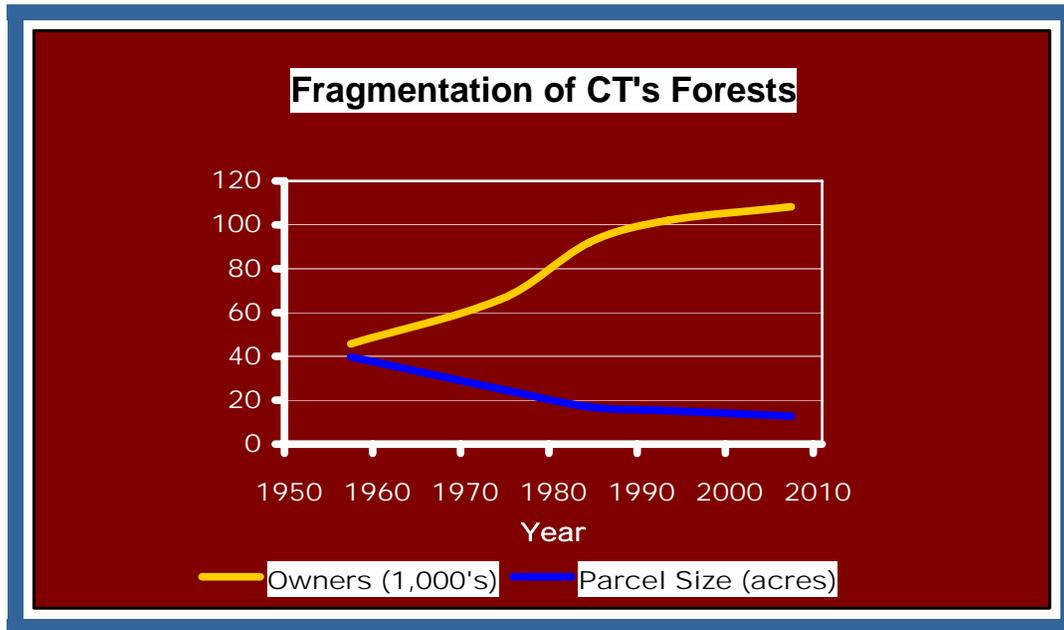
Over the span of the past 50 years, 23.9 percent (434,750 acres) of Connecticut's privately owned forested land has been consumed by development. On average, each day sees the loss of 23.8 acres of forest land. The rate of loss has remained relatively consistent through the period, save a slight easing of the rate of decline during the 1980's. The more aggressive rate of decline of forest land resumed in the early 1990's.

Figure 29



While the loss of forestland is of great concern, the impact of that loss is magnified by the alteration of the fundamental nature of the forest that remains. The forest is being fractured into ever-smaller pieces. Over that same span of 50 years, (in which the forest shrank by nearly 24 percent), the number of owners of the remaining forest increased by an astounding 137 percent (62,500 owners) and the average size of a parcel of forest declined by 67.9 percent (from 39.8 acres to 12.8 acres.)

Figure 30



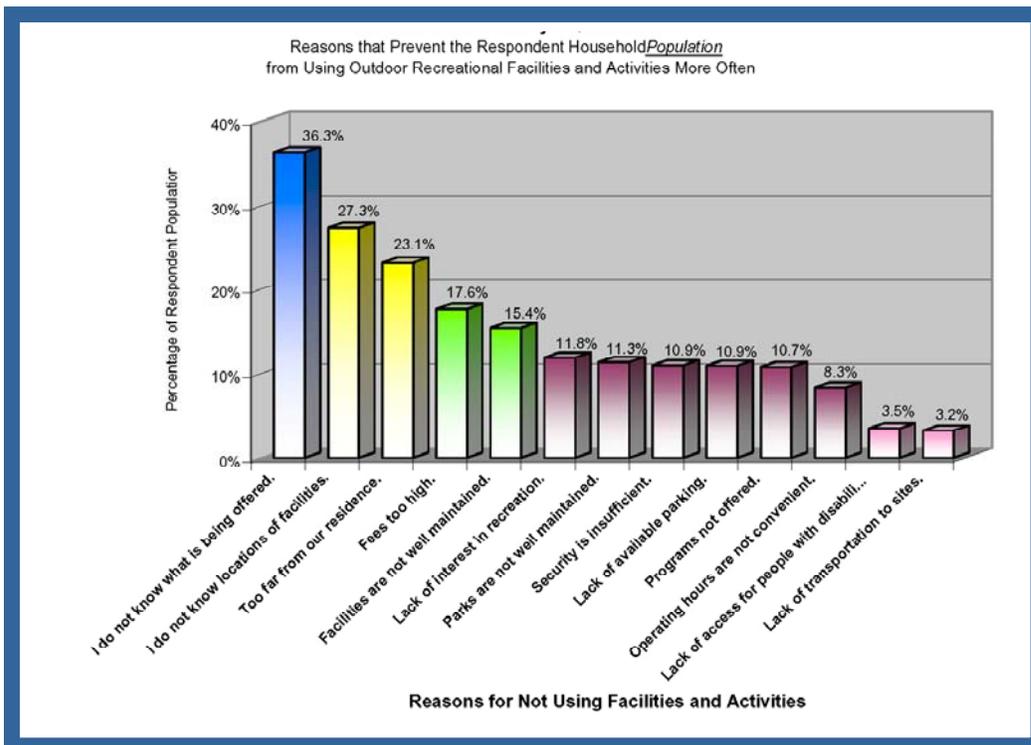
Today, the 1,383,247 acres of non-industrial, privately owned forest land in Connecticut is held by 108,200 owners. That land constitutes 77 percent of our state's forested lands. These lands provide a broad spectrum of ecological and environmental benefits to all Connecticut citizens. This land provides cleaner air, cleaner water, places to recreate, and essential habitat for wildlife and threatened species. However, the fragmentation of the forest into smaller and smaller pieces dramatically affects the ability of the forest to provide sustainable levels of these ecological and environmental benefits.

Through the Private & Municipal Lands Program administered by the Department's Forestry Division, the Department is working to raise awareness of this important issue and to slow the rate of loss of forest land and the rate of fragmentation of our remaining forest.

Increasing Outdoor Recreation Use and Experiences

Connecticut's inventory of outdoor recreation facilities includes state, municipal and privately held resources. The State system includes state parks, forests, wildlife management areas, natural area preserves, public boat launches and undesignated open space lands that offer a wide assortment of facilities including trails, beaches, camping, and picnic areas, as well as a variety of other activities such as fishing, hunting and various winter sports. Municipal areas include local parks and preserves, multi-use areas, swimming facilities, golf courses, athletic fields and courts. In addition, many municipal school facilities include areas for outdoor play.

Figure 31



A study of the recreational activities and preferences of Connecticut residents called [Connecticut's Statewide Comprehensive Outdoor Recreation Plan \("SCORP"\)](#) was conducted by the Department in 2004. The survey found that only 50 percent of Connecticut households visit state parks each year. The survey also revealed that 36.3% of those who do not use the parks said they did not visit because they are not aware of what the parks have to offer and 27.3% of those surveyed did not know the location of facilities.

Based on a 2005 study conducted by the University of Connecticut's Center for Population Research to count and assemble a database of recreational facilities in Connecticut, it is probable that the vast majority of the state's populous resides within one mile of a publicly accessible, outdoor recreation facility.

Through its *No Child Left Inside* initiative, the Department seeks to increase public awareness of the outdoor opportunities available to all residents of the State.

Compliance Rates

The Department's strategic planning process includes an analysis of compliance patterns and rates and environmental data. The analysis helps the Department identify the environmental problems or areas of noncompliance that need to be addressed. Available permitting, compliance assistance and enforcement tools are then evaluated to determine the appropriate application and integration of tools necessary to resolve the problem.

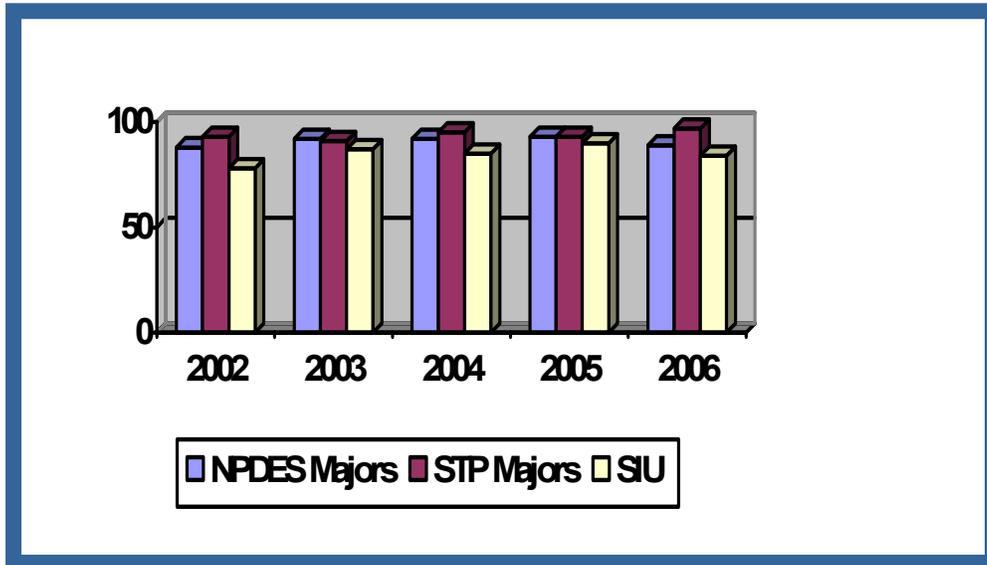
The compliance rates over the last several years indicate that major sources of air pollution, water pollution and large quantity generators of hazardous waste ("LQGs") have high rates of compliance with environmental regulations. These encouraging compliance rates are a result of a combination of factors. The factors include the Department's commitment to a strong enforcement presence through regularly scheduled inspections of those facilities and follow-up on violations found at those facilities, as well as effective permits and compliance assistance efforts. Another important factor is the commitment on the part of the regulated community to comply with environmental regulations.

While the Department is interested in maintaining the encouraging trend of compliance of major sources of pollution, these compliance rates inform the Department that there may be other areas of high noncompliance or environmental problems that need to be addressed. Specifically, the Department recognizes that smaller sources of pollution also need attention. Additional enforcement tools may need to be developed or adjusted to address these different entities.

Compliance Rate Trends

Figure 32 represents the facility compliance rates for categories of wastewater discharges including discharges to surface waters (National Pollution Discharge Elimination System ("NPDES")), sewage treatment plants ("STP") and significant industrial users ("SIU").

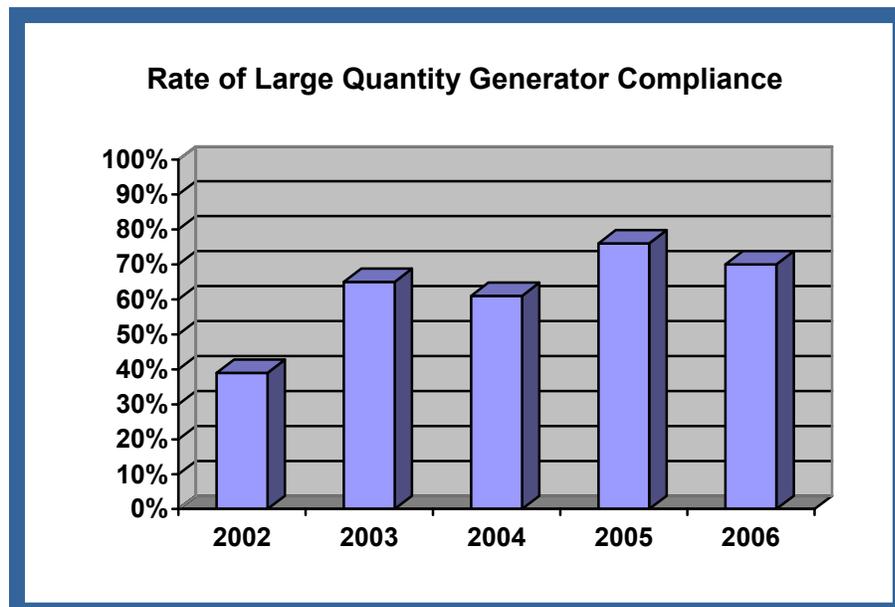
Figure 32



A high rate of compliance for these major discharges has been maintained for the last several years allowing the Department to begin to place a greater emphasis on compliance with general permits for other areas of water pollution such as stormwater discharges from industrial, municipal, institutional, and transportation and construction related activities.

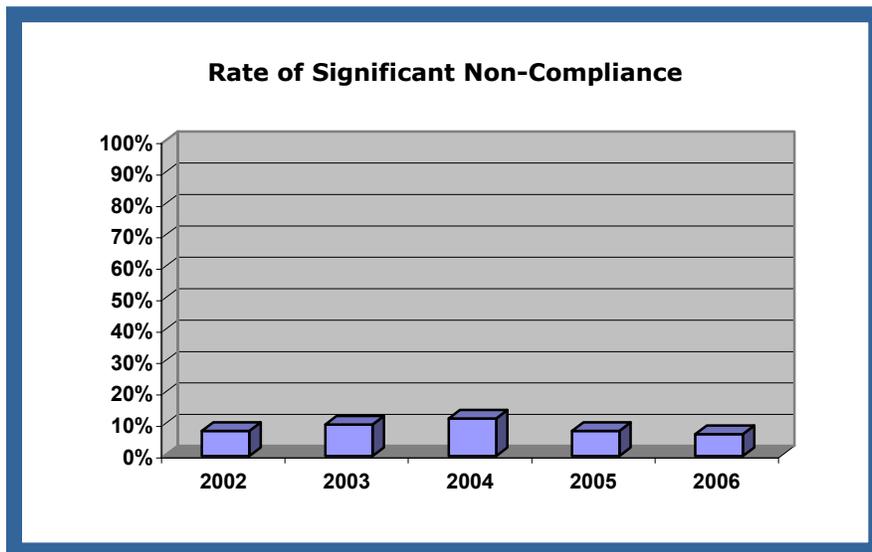
Figure 33 represents compliance rates for LQGs of hazardous waste. A LQG is one who generates greater than 1,000 kilograms of hazardous waste per month or accumulates greater than 1,000 kilograms of hazardous waste on-site at any one time. One thousand kilograms is typically equivalent to three to five 55-gallon drums of liquid waste.

Figure 33



For 2006, the compliance rate for large quantity generators was 70%, however the rate of significant non-compliance was only 7%, indicating that the remaining 93% of the violations observed were minor (See Figure 34). A facility is considered to be in significant non-compliance when the violations are so significant that the issuance of a formal enforcement action is required.

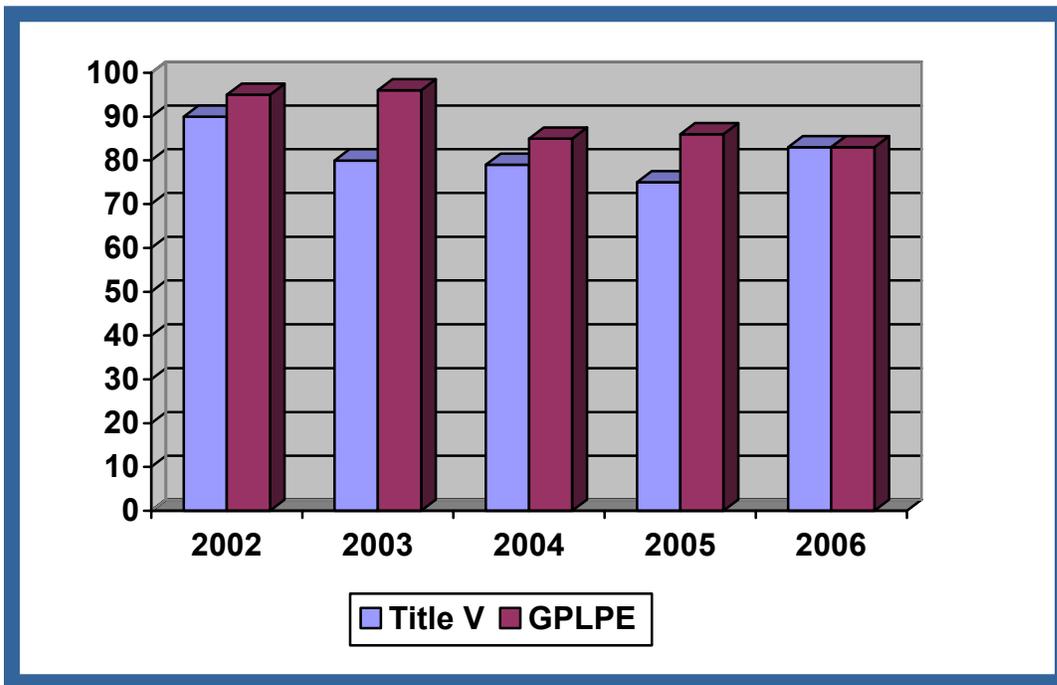
Figure 34



The Department will continue to maintain the high rates of compliance for LQGs while at the same time sharpening focus on small quantity generators (“SQGs”) of hazardous waste. Within the last several years, there has been a targeted effort to understand the areas of non-compliance for SQGs and to provide assistance for those areas to further safe waste management.

Figure 35 represents the compliance rates for facilities operating under a Title V permit or the General Permit to Limit Potential to Emit from Major Stationary Sources of Air Pollution (“GPLPE”). The owner or operator of a source otherwise subject to the Title V operating permit program may seek coverage under the GPLPE. The general permit enables the owner or operator of the source to cap or limit their potential and actual stationary source emissions at levels lower than the Title V thresholds, thereby eliminating the need for obtaining a Title V permit.

Figure 35



Over the last several years, a compliance rate of at least 75% has been maintained for Title V and GPLPE sources. This high rate of compliance enables the Department to also pursue other sources of air pollution, such as mobile sources.

The air emissions pie chart in the State of the Environment section of this report demonstrates that a high percentage of air pollution is coming from mobile or area sources as opposed to stationary sources. Additional compliance tools and strategies such as the anti-idling strategy are being developed to address this emerging area of air pollution.

Federal Fiscal Year ("FFY") 2006 Compliance Rates

The following tables show more detailed compliance rates for FFY2006 for particular industry sectors in the following Department media programs: Hazardous and Solid Wastes, Wastewater Discharges, Air Emissions, Pesticides, PCBs and Underground Storage Tanks. (The Federal Fiscal Year runs from October 1 through September 30.)

Unless otherwise noted the compliance rate for each category was calculated as follows:

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

Hazardous and Solid Wastes

Inspection Category	Inspection Projected FFY 06	Inspections Conducted FFY 06	Total # Facilities by category	# of NOV's FFY 06 (1)	# of inspections with SNC (1)	% of SNC Non-compliance	% inspected facilities in compliance
Treatment Storage Facility	8	5	8	0	0	0	100%
Large Quantity Generator	88	91	320	28	6	7%	70%
Small Quantity Generator	25	28	1676	23	8(2)	29%	18%
Transporter	5	5	211	2(3)	0	0	60%
Volume Reduction Facility	31	5	33	4	1	20%	20%
Resource Recovery Facility	7	2	7	0	0	0	100%
Transfer Station	30	8	143	2	0	0	75%
Landfill	40	10	36	1	0	0	90%

- (1) Does not include NOV's resulting from complaint investigations.
Does not include 21 NOV's issued to CESQGs
SNC (Significant Non-compliance) – The violator/violation is significant enough to require formal enforcement response.
- (2) Does not include 12 Home Depot sites
- (3) Does not include 3 used oil handlers

Wastewater Discharges

Inspection Category	# of Facilities	Annual Compliance Inspections Projected FFY06	Actual Inspections FFY06	%Facilities in Compliance based on inspections*	%Facilities in Compliance based on DMR review (not in SNC)
NPDES Industrial Majors	37	20	37	89%*	97%**
NPDES Sewage Treatment Plant (STP) - Majors	67	67	60	97%*	90%**
Pretreatment SIU-Significant Industrial Users	203	107	149	84%*	96%
NPDES Industrial-Minors	43	5	20	90%*	98%
NPDES- STP- Minors	30	3	20	90%*	93%

* 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.

Pesticides

Inspection Category	Inspections Projected FFY 06	Inspections Conducted FFY 06	# of Enforcement Cases Initiated in FFY 06	% Inspected Facilities in Compliance
Agricultural Use & Complaint Follow-Up	22	17	5	71%
Non-Agricultural Complaint/Concern Follow-Up & Use Investigation	60	89	55	38%
Market Place	75	97	15	85%
Certified Applicator Records	100	96	30	69%
Restricted Use Dealers	10	16	1	94%

PCBs

Inspection Category	Inspections Projected FFY 06	Inspections Conducted FFY 06	# of Enforcement Cases Initiated in FFY 06	% Inspected Facilities in Compliance
Referrals	8-13	9	4	56%
Complaints	12-17	22	5	77%
Clean-up Sites	10-15	19	2	89%
Other Neutral Scheme	10-15	15	1	93%

Underground Storage Tanks

Inspection Category- 98 Deadline Target List	Inspections Projected FFY 06	Inspections Conducted FFY 06	# of Enforcement Cases Initiated in FFY 06	% Inspected Facilities in Compliance
Operational/Structural*	150	726	9	61%/98%

***Operational inspection**- assessment of compliance with release detection and maintenance requirements

Structural inspection- assessment of tank and line construction, and corrosion protection

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. Unless otherwise noted below, non-compliance means that an enforcement action (e.g., an NOV, Consent Order, Unilateral Order or AG referral) was taken at a facility during Federal Fiscal Year (FFY) 2006.

Compliance Monitoring Activity – Federal Fiscal Year 2006

Facility/ Inspection Category	Report Reviews Projected FFY 06	Reports Reviewed FFY 06 ¹	Inspections Projected FFY 06	Inspections Conducted FFY 06	# 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	240	376	60	66 FCE	106 ²	18	83%	7	6.6%
General Permit to Limit Potential to Emit	360	638	90	90 FCE	338 ²	58	82.8%	15	4.4%
Minor Sources	10	54	150	52 FCE	1500	33	97.8%	2	0.15%
Stage II			1600	2364	1600	587 ⁴	63%	14	1%
Complaints			500	545					
Other (Enforcement follow-up inspections, routine investigations)			100	586					

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:

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

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 High Priority Violation ("HPV") or Federal HPV during FFY 2005.
- (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.

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

SNC is calculated as follows:

Radiation Division

# of Facilities	# of Inspections ¹	Inspection Rate (%)	NOVs Issued	Compliance Rate (%)
3641	215	5.9	19	91.5

1. Inspection Rate Calculation:

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

2. Compliance Rate Calculation

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

Outputs and Activities

The Department maintains a strong enforcement presence by conducting compliance inspections, taking appropriate enforcement action and enforcing strict permit conditions. This combination enables the Department to assure that compliance with environmental requirements is achieved and maintained by the regulated community.

The following are the FY06 enforcement statistics for the Bureaus of Air Management; Materials Management and Compliance Assurance and Water Protection and Land Reuse as well as the five-year Department-wide average. Also included is the Department's report on permitting efforts as required by CGS 22a-6r.

Overall, 2006 enforcement statistics reflect a continued commitment to enforcement to achieve the cleanest, safest environment possible for Connecticut's citizens. As previously discussed and illustrated in this report, the compliance rates for major sources of pollution remain high and when serious violations are encountered, the Department takes aggressive formal action as demonstrated by the Home Depot and Ecolab cases. In FFY06 the Department conducted 6,791 inspections (up from 6,420 in FY2005) and collected over \$1.3 million in combined administrative penalties and supplemental environmental project funds.

This continued maintenance of a strong field inspection presence and the commitment to enforce against significant violators are vital elements of the Department's enforcement program. Although the deterrent effect is difficult to measure, the message is clear—"Doing the Right Thing" is the "Path of Least Resistance".

**Department-wide Federal Fiscal Year 2006 Enforcement Statistics
(10/01/05-9/30/06)**

Action Type	Bureau of Air Management	Bureau of Water Protection and Land Reuse	Bureau of Materials Management and Compliance Assurance	Total
Notice of Violation	186	42	403	631
Consent Order	25	19	51	95
<i>Administrative Penalties Assessed</i>	\$105,322.50	\$84,250	\$755,225.50	\$944,798
<i>Supplemental Environmental Projects</i>	\$104,944.50	0	\$644,778	\$749,722.50
Unilateral Order	4	3	1	8
Attorney General Referral	7	0	11	18
Judicial Settlement	2	3	19	24
Penalties	\$900	0	\$1,053,212	\$1,054,112
<i>Supplemental Environmental Projects</i>	0	0	\$373,278	\$373,278
Chief State's Attorney Referral	0	0	3	3
Referral to EPA	2	0	13	15
Inspections Conducted	4,013	406	2,372	6,791

**Department-Wide Five Year Average
Federal Fiscal Years 2002-2006**

Activity	2002	2003	2004	2005	2006	Five Year Average
Referrals(AG/EPA/CSA)	35	45	41	28	36	37
Orders	244	236	160	140	103	177
Notices of Violation	1073	782	778	657	631	784
Total Enforcement Actions	1352	1063	979	825	770	998
Inspections	7774	7015	7345	6420	6791	7069

Permitting Statistics

10/01/05-9/30/06

Bureau	Permit Type	Applications Received	Permits Issued	Applications Closed ¹	Applications Pending (as of 9/30/06)
Air	General Permits	259	235	237	31
	Individual	175	157	173	175
	Short Process	65	30	38	33
Office of Long Island Sound Programs	General Permits	42	37	41	14
	Individual	163	122	132	297
	COP ²	234	216	228	26
Water - Inland Water Resources	General Permits	72	60	65	39
	Individual	202	161	181	208
Waste	General Permits	26	15	19	27
	Individual	66	65	70	126
	Short Process	771	738	744	145
Water - Permitting & Enforcement	General Permits	963	813	815	279
	Individual	121	119	160	449
All DEP	General Permits	1362	1160	1177	390
	Individual	727	624	716	1255
	Short Process	1070	984	1010	204
	Totals All Apps	3159	2768	2903	1849

1 Applications Closed represents the total number of applications that were closed including: permits issued; applications which are withdrawn, rejected for insufficiency, or denied on the technical merits of the application; and applications which were received but no permit is required.

2 COP = Certificate of Permission

Average Processing Times

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	Issue Permit Total Time	Close Application DEP Time	Close Application Total Time
Air	76	6	115	68	79	93	142
OLISP	76	36	65	65	91	97	123
IWRD	261	14	108	180	242	311	363
Waste	183	5	715	72	82	77	90
Water Discharges	45	38	530	79	99	203	238
All DEP ³	79	123	173	80	98	139	169

Timeliness

Bureau	On Schedule (vs. Plan)	On Schedule (vs. Revised)
Air	74.88%	85.31%
OLISP	60.53%	83.47%
Inland Water Resources	45.70%	53.85%
Waste	92.05%	97.92%
Water - Permitting & Enforcement	92.17%	97.85%
All DEP	81.50%	90.50%

³ All DEP averages are weighted averages.

Permit Related Revenue Information

CGS Section 22a-6r states the Commissioner shall identify: 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*	
10/1/05 - 9/30/06	\$4,198,056

* These figures represent application fees due on submittal and permit issuance fees. They do not include annual fees and other registration fees such as medical and industrial X-ray, pesticide registrations, UST’s, property transfer, LEP, etc.

General Fund Appropriation*	
7/1/05 - 6/30/06	\$1,159,523

* 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.

Amount of Permit Application Fees Refunded* (7/1/05 - 6/30/06)
Application Fees Refunded for a Total of \$ 22, 614

* Refunds reflect withdrawn applications, duplicate fees, etc.