



# Annual Report

N. J. Department of Environmental Protection . . . on the road to a clean New Jersey

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**TO: Governor Thomas H. Kean,  
Members of the New Jersey Legislature  
and Citizens of New Jersey:**

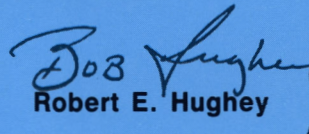
During the last four years, I have had a unique opportunity to watch the Department of Environmental Protection grow, take on major new responsibilities, and respond to historical problems throughout New Jersey. It has been said that this Department can never really win because any resolution of a difficult or emotional issue is bound to be unsatisfactory to someone. While the assessment sometimes seems accurate, it is hard not to be optimistic when the Department and its goals are viewed in perspective.

Because of the interest and awareness of New Jersey's citizens, the bipartisan support of the legislature, and the concern and leadership of the Governor, New Jersey has built the best environmental programs in the country. Of course, the spirit that makes us strive to be the best also makes it impossible for us to be satisfied.

During the years ahead there is going to be a constant need for new programs, faster responses and improved technology—and that is why the Department of Environmental Protection is such an exciting and challenging place to be.

It has been a distinct pleasure to work with people who care so much and try so hard. On their behalf, let me thank all of you for your support.

**Sincerely,**

  
**Robert E. Hughey**

# Division of Waste Management . . .



## Hazardous Site Cleanup

There are 850 sites on the National Priorities List (NPL) for Superfund. The Department has aggressively petitioned for New Jersey site ranking resulting in the placement of 99 state and federal sites on the NPL. Much work has been accomplished at New Jersey's NPL sites. At the end of 1985, the program had completed 34 cleanups at 30 NPL sites (with an additional 22 cleanups underway); 28 designs for cleanup projects completed at 24 NPL sites (with an additional 9 designs underway); and 29 feasibility studies completed at 23 NPL sites (with an additional 60 feasibility studies underway). The number of hazardous waste sites is largely due to the fact that New Jersey is the most densely populated state, has one of the largest concentrations of petrochemical and chemical industries, and, most importantly, has developed the most advanced cleanup strategy in the country.

The Division's Hazardous Site Mitigation Administration (HSMA) conducts the Department's federal Superfund programs and also administers New Jersey's Spill Compensation & Control Act programs. HSMA is currently updating the Hazardous Waste Management Plan which provides a cohesive strategy for hazardous site cleanup in New Jersey.

Highlights of cleanup activities that occurred at hazardous sites in 1985 include:

*“Newark will be the home of the first county resource recovery facility . . .”*

- Burnt Fly Bog (Marlboro Township, Monmouth County): In November 1985, the DEP began a removal of surface material at the upland portion of the site.

This involved removal

of approximately 15,000 cubic yards of asphalt pile material, 400 stockpiled drums and numerous remains of drums. These activities involved site preparation, transportation of material from the site and disposal of more than 600 truckloads to hazardous waste landfills in Williamsburg, Ohio and Niagara Falls, New York. This operation is expected to be completed in February 1986.

- Krystowaty Farm (Hillsborough Township, Somerset County): A waterline was constructed in order to provide public water to 27 residences when the potable wells were affected by off-site contaminant migration. The waterline construction was conducted by Elizabethtown Water Company between June and November 1985. From November to December 1985, approximately 7,800 cubic yards of contaminated soil was excavated and transported to a landfill in Fort Wayne, Indiana.
- PJP Landfill (Jersey City, Hudson County): On July 29, 1985 emergency action was initiated to eliminate the impact of severe smoke conditions at the site. This pro-

ject was successfully carried out by fire-fighting specialists from Texas, and entailed excavation of portions of the landfill in conjunction with dousing of the burning material with a fire-fighting foam. These activities continued for approximately four weeks and were successful in extinguishing the surface fires in an area of approximately six acres. While the fire and smoke conditions in this small area were suppressed, the fire worsened in areas at the opposite end of the site which were severely impacted by smoke. By October 10, 1985, most of the surface fires were extinguished and smoke was eliminated over most of the site. On October 29, 1985, on-site work began to implement an engineering design for long-term remediation of the site.

- Spense Farm/Pijak Farm (Plumsted Township, Ocean County): From July to November 1985, approximately 500 cubic yards of contaminated soil were excavated and stockpiled at these two Plumsted Township sites. The work was performed in accordance with a DEP Administrative Consent Order. Removal of the stockpiled material is

expected to begin in March 1986.

Through its enforcement program, the Division has participated in other cleanup activities. A major cleanup operation was initiated at the Ciba-Geigy facility in Toms River for the removal of approximately 16,000 drums. In April 1985, Ciba-Geigy was issued an Administrative Consent Order (ACO) and fined \$1.4 million. The ACO mandated company payment for cleanup of 14,000 drums of hazardous waste, and also required restructuring of environmental officers. DEP maintains an oversight role on the hired contractors with site cleanup for cell 2 scheduled for completion at the end of January 1986.

In September 1985, approximately 435,000 gallons of fuel oil spilled into the Delaware River when a Panamanian tanker ran aground on Cherry Island. After the operator freed the vessel from the island, the tanker proceeded to the Sun Oil Refinery in Marcus Hook, Pennsylvania. The Coast Guard responded initially to the spill and was the lead agency overseeing the cleanup. The USEPA, DEP, and Pennsylvania and Delaware State Agencies were all involved in the cleanup. The oil affected pristine marsh areas and estuaries in New Jersey, Pennsylvania and Delaware, as far as 10 miles downstream of the Delaware Memorial Bridge. The responsible party (Sun Oil) hired 21 contractors to work to contain the spill and recover the product. The Coast Guard did not conduct an extensive cleanup of the marsh areas, as it was concluded that the resultant environmental damage would be more extensive than the effect of a natural purge of the area.

### **Environmental Cleanup Responsibility Act**

Responsible parties continued to remediate their sites as a precondition of property sales under the provisions of the Environmental Cleanup Responsibility Act. Prior to the Transfer of a property, an owner must submit either a cleanup plan or a negative declaration. During 1985, 47 private party cleanups at a cost of \$15,237,179 were conducted through the ECRA process. In addition, 108 cleanups costing \$2,900,000 were conducted by private parties prior to DEP approval.

The ECRA fee schedule became effective October 1, 1985 and is expected to collect \$2.5 million which will supplement the \$400,000 appropriated from the New Jersey Spill Compensation Fund to implement ECRA.

### **Solid Waste Management**

To continue working toward a solution to the problem, *The New Jersey Solid Waste Management Plan Update: 1985-2000* was developed. This comprehensive document substantially updated the Department's 1982 State Plan and essentially defines the States' overall strategy for the management of non-hazardous residential, institutional, commercial and industrial solid waste for the remainder of the century. The update evalu-

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ates existing solid waste generation rates and disposal capacity, identifies landfill disposal and resource recovery needs, and recommends the implementation of appropriate technologies.

### **Resource Recovery**

Resource Recovery Implementation Grants are distributed annually by the Department to counties who apply and submit a proposal detailing interest in evaluating solid waste alternatives. Awards are granted based upon an assessment of county need in relation to the total statewide need and the proposal's merit in addressing the solid waste crisis. During 1985, grants of \$79,666 each were awarded to Bergen, Burlington, Essex, Passaic and Warren Counties. All these counties, with the exception of Essex, continue to pursue resource recovery related studies in preparation for the submittal of their final engineering designs and environmental impact statements.

The final Certificate of Approved Registration and Engineering Design Approval for the Essex County Resource Recovery facility was issued on December 11, 1985. This first mass-burn county resource recovery facility will be located in the City of Newark and have a maximum design capacity of 2,505 tons per day. The facility will consist of three independent processing lines for the incineration of waste, the generation of steam, and the handling of by-products. The issued permit imposes conditions on application including facility operations and maintenance, facility staffing and training, noise control, wastewater disposal, odor control, operations monitoring through remote telemetry, and monitoring of the residual ash produced by the facility.

### **Enforcement**

During 1985, the Division initiated 1,354 formal enforcement actions against violators of various statutes and regulations within the Division's jurisdiction. Of those, 501 enforcement actions have resulted in an assessment of \$4,302,763 in penalties and the collection of \$621,047 of those penalties. Overdue penalties are referred to the Attorney General's Office for further action.



Ron Corcoy

*Edgeboro Landfill*  
Rothacker



# Division of Water Resources . . .



## Water Quality

The Department has aggressively used the sewer extension ban program to prevent overloading of sewage treatment plants and resultant discharges of improperly treated sewage. The Sewer Extension regulations require that municipalities place a moratorium on sewer extensions once a treatment plant has reached capacity, or exceeded its permit limits and the moratorium can only be lifted when plant capacity has been increased or the treatment process is upgraded. Fifty facilities instituted sewer extension bans in 1985. As of the end of 1985, 111 facilities serving 150 municipalities were on bans. Aggressive use of the program, and resulting pressure from local communities and developers, has resulted in numerous solutions to long-standing non-compliance problems.

The Division certified \$80.2 million in grant awards committed to the improvement of the state's water quality by replacing inadequate treatment facilities or upgrading existing treatment facilities.

The Wastewater Treatment Fund and the Wastewater Treatment Trust, first proposed in 1982, were finally created by law in September 1985. With voter approval of the \$190 million bond issue in November 1985, financial resources are now available to provide low interest loans for wastewater infrastructure projects. The Trust is an important funding alternative to federal grants.

In the area of ground water protection, the Division of Water Resources has implemented an active ground water monitoring and enforcement program. New Jersey's groundwater inspection and enforcement

*“New Jersey landfills will no longer accept sewage sludge for disposal . . .”*

programs were rated as excellent, ranking second in the nationwide evaluation by the Council on Economic Priorities, an independent non-profit research organization.

The first two rounds of testing for hazardous contaminants in drinking water supplies were completed, as required by the 1984 amendments to the Safe Drinking Water Act. Actions were taken in the case of a few water suppliers to take wells out of service, to increase monitoring and/or to improve water treatment. The Drinking Water Quality Institute was organized and began work on establishing standards for contaminants.

As of March 15, 1985, all landfills in New Jersey were required by law to stop accepting sewage sludge for disposal. The Division has assisted sewage treatment plants in finding other methods of disposal. The State-wide Sludge Management Plan, which has been extensively reviewed by public officials, interest groups and state agencies is approaching completion.

In response to a federal directive encouraging expanded use of biomonitoring for both acute and chronic toxic effects, tox-

## *. . . on the road to a clean New Jersey*

icity tests were added as a municipal discharge permit condition. By the end of 1985, 43 municipal treatment plant permits included toxicity test requirements.

Toxicity testing is also being incorporated in industrial wastewater permits. Sensitive aquatic species are used to monitor the amount of toxics being discharged to State surface waters. These requirements have been applied to 50 industrial dischargers in 1985 and will be applied to all other suspected dischargers of toxics to surface waters during 1986.

### **Water Supply**

The Division designated the first of several "critical areas" in which depleted ground-water aquifers posed a threat to water supplies. Most of Monmouth County and portions of Middlesex and Ocean Counties were named. Users of more than 100,000 gallons per day have been required to plan for reduction in ground-water withdrawals of 40-50% depending on the aquifer used. Users must submit plans for achieving reductions, through use of alternative sources or conservation, by January 15, 1987. It is anticipated that the Manasquan Reservoir will provide an alternative supply for a number of these users.

General regulations under the Water Supply Management Act were adopted in March. These regulations provide mechanisms for coordinating actions by water purveyors, as well as creation of the "water supply critical area" program to restrict groundwater withdrawals in areas of aquifer depletion.

The 1981 Water Bond groundwater projects in Atlantic City, Camden and South River moved into high gear as the Geological Survey began deep exploration of the coastal plain aquifers with its new drill rig and state-of-the-art geophysical equipment. In order to define the ground-water resources of the Atlantic City region, two exploratory wells over 1000 feet deep were drilled 2 miles and 5.5 miles off the coast. Fresh water was discovered in both wells.

### **New Projects**

New Jersey's section of the 1984 National Needs Survey was completed. For those treatment categories that are currently eligible for construction grants, New Jersey ranks second in current needs and fourth in needs projects through the year 2000 on a national basis. The results of the Needs Survey indicated that nearly \$102 billion through the year 2000 will be needed in order for the nation to meet the requirements of the Clean Water Act. The 1984 Needs Survey has identified over \$4 billion in projects needed in New Jersey.

A joint USGS-NJGS mapping program was initiated to produce a modern geologic map of the State. The geologic map, which is expected to take 4 years to complete, will then be used to produce environmental maps capable of being

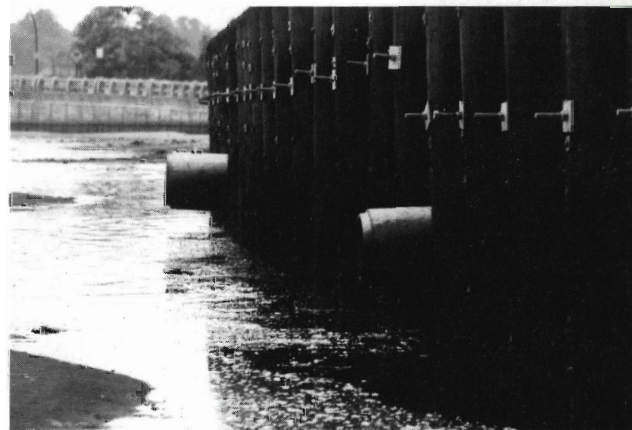
utilized by local government for rational land use planning.

### **Enforcement**

During FY'85, through the Division of Water Resources' enforcement program, over \$60 million was spent on hazardous waste cleanups by responsible parties. This program is entirely separate from the State Spill Fund and federal Superfund programs in that the hazardous waste cleanups are funded by those responsible for the pollution, at no additional expense to the taxpayers. The privately funded cleanups program provides for an equivalent type of remedial action as the Spill Fund and Superfund. Thus, the State has the flexibility of providing for cleanup at hazardous waste sites using a variety of funding methods, all capable of achieving the same goal. With the privately funded cleanup program, however, there is the added benefit that taxpayers do not have to bear the cost for remediating the consequences of private parties' actions.

During 1985, the Division issued 1,094 directive letters and 111 other formal enforcement actions against violators of various statutes and regulations within its jurisdiction. Of those, 105 administrative enforcement actions have resulted in an assessment of \$2,028,355 in penalties and the collection of \$1,711,443 of those penalties.

*Storm Drains on the Navesink River*  
Ron Varsaci



# Division of Environmental Quality . . .



## Air Quality

The Air Quality Program took steps toward several long term goals in 1985:

- In July, Commissioner Hughey signed proposed revisions to N.J.A.C. 7:27-16 ("Control and Prohibition of Air Pollution by Volatile Organic Substances") which would impose tougher air pollution controls on the fumes emitted at gasoline stations during refueling and at other gasoline vapor-producing industrial and commercial sources in an attempt to achieve the National Ambient Air Quality Standards for ozone. Public hearings were held in September and the revisions in their final form were expected to be adopted in early February 1986.
- All new motor vehicles purchased as of January 1, 1985 must be inspected one year from the date of registration as opposed to the previous two-year period. This rule change is necessary in order to comply with the State Implementation Plan (SIP) for motor vehicle emission control.
- Amendments to regulations which expand New Jersey's current anti-tampering/anti-fuel switching program were signed in late 1985. Annual inspection of all gasoline-fueled motor vehicles manufactured after 1974 which have catalytic converters and fuel-filler neck inlet restrictors was one of the requirements intended to insure that these devices have not been removed.

In addition:

- On April 29, 1985 the New Jersey State Implementation Plan (SIP) for lead was forwarded to EPA for approval.

***"Tougher air pollution controls have been proposed for fumes emitted at gas stations . . ."***

The measures committed to in this SIP, together with the phase-out of lead in gasoline, are expected to ensure that the National Ambient Air Quality Standards for

Lead will be attained and maintained in New Jersey.

- The Coalition of Northeastern Governors endorsed Governor Kean's acid rain financing proposal calling for pollution control devices to be financed through a revolving loan fund. Funds would be generated through an energy tax scaled to reflect statewide average sulfur dioxide emissions. The new policy will be used by the Northeastern governors in lobbying for a national acid rain control plan which is responsive to regional needs.

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## **Pesticide Control**

Proposed revisions to the DEP's current pesticide regulations were made in 1985. In addition to many technical changes, new sections address farmworker safety, termiticide use, annual submission of types and amounts of pesticides used, and aerial applications and equipment. The revisions should be adopted in early 1986.

The first "Pesticide Disposal Day," intended for homeowners, farmers, and other small quantity generators, was held in May in Morris County. Later in 1985, Burlington and Somerset counties held their own programs.

## **Radiation Protection**

A multi-disciplined team was officially assembled in early 1985 to address Phase I of the radium contaminated soil cleanup project in Glen Ridge, Montclair, and West Orange. The objective of Phase I is to demonstrate the feasibility of the complete remediation of residential properties, including removal, transport and out-of-state disposal requirements.

Work was completed at four homes and started at five homes. In September, the project was suspended because of legal action initiated by the State of Nevada over the use of a licensed low-level radioactive waste disposal site in Beatty, Nevada. New Jersey subsequently filed an action in the U.S. Supreme Court contesting the Nevada measures. The case is awaiting decision.

By October, excavation activity stopped because of the lack of storage space on site and at the transloading and trailer storage areas in Kearny. Until the state's lawsuit against Nevada is resolved none of the material can be shipped to the Beatty disposal site. DEP is investigating storage and disposal alternatives pending resolution of the legal actions.

As of this year, approximately four acres of commercial property and six residential properties in Lodi were successfully cleared of radioactive thorium. A total of 35,000 cubic yards of contaminated soil were removed and stored temporarily on the Stepan Chemical property adjacent to the chemical plant. Over 1,000 soil verification samples were collected and thousands of in-situ gamma exposure measurements were made to certify that this portion of the property could be released for unrestricted use.

In 1985, New Jersey became aware of the potential existence of high levels of radon being emitted along the "Reading Prong," a geological formation stretching from Pennsylvania through New Jersey, New York, and Connecticut. The Division has responded to 4,800 citizen inquiries regarding radon, conducted two radon briefings with local health agencies, and began the process of certifying radon testing firms.

Legislation authorizing a radon control program is expected to be signed in early 1986 to include a study of the geology, population, housing, construction and geography of the af-

ected area of our state.

## **Release Prevention and Response Administration**

A one of DEP's regulatory milestones of 1985, Governor Kean signed the landmark "Toxic Catastrophe Prevention Act" on January 8, 1986.

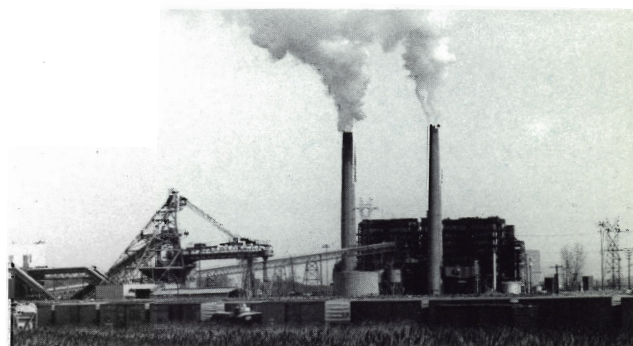
The first legislation of its kind in the United States, it is designed to prevent the occurrence in New Jersey of a catastrophic accidental chemical release of the type which took place in Bhopal, India in December of 1984.

The bill strengthens DEP's regulatory authority over companies which handle extraordinarily hazardous substances. These facilities are required to register their operations with the Department by May 1986. The Department will then review the facilities' existing risk management programs and require modifications to them if necessary. If a given facility does not have such a program, it will be requested to submit its operations to an accident risk assessment performed by an independent consultant.

## **Enforcement**

The Division pursued 4,822 enforcement actions against violators of the various statutes and regulations under its jurisdiction. Some of these enforcement actions have resulted in an assessment of \$1,709,735 in penalties and the collection of \$1,026,694 of those penalties.

*Bergen Power Plant*  
Jim Cress



# Division of Parks and Forestry . . .



## State Park Service

During 1985, several new state park facilities were opened and dedicated including:

- The Interpretive Area of the Visitors Center at Batsto, Wharton State Forest.
- The Liberation Monument at Liberty State Park depicting an American soldier carrying a concentration camp victim. The monument, sculpted by Nathan Rappaport, was dedicated to the Armed Forces of the United States.
- The ocean beach access ramp at Island Beach State Park allowing visitors with physical limitations access to the water's edge.

Interpretive programs were held at the ocean bathhouses at Island Beach State Park during the months of July and August. The program makes educational programs concerning the coastal environment more accessible to the thousands of visitors visiting the beach.

In May, the first Friends of the Parks Conference was held at Skylands Manor. Participants of the Conference included historic sites curators, members of the "friends" groups associated with State Parks and other interested individuals. The conference, titled "Interpreting Our Heritage" emphasized the need for quality interpretation programs at the historic sites of the State. The event was attended by over a hundred people and will be held on a bi-annual basis.

## State Forestry Service

The Forestry Bureau submitted a project proposal to the Northeast Regional Biomass Program of the Coalition of Northeastern Governors to assist New Jersey companies interested in wood energy conversions. The project will supply systems of information, raw material supply data, feasibility analysis through consultants, and other assistance concerning the financial viability of wood energy conversions.

*"The Certified Local Governments program will increase funding for historic preservation . . ."*

Not since April 1963 has the fire danger or potential for disaster been as high as it was in 1985. The drought which began in June of 1984 continued and intensified. Open burning was banned statewide and the woods were

closed between the New Jersey Turnpike and Garden State Parkway in south and central New Jersey in an effort to reduce the number of fires and prevent the disastrous type of fires that occurred in 1963. The first woods closure imposed since 1977 was in effect 15 days. It was highly successful at reducing forest fire occurrence and preventing a possible wildland fire disaster in central and southern New Jersey. In 1985, 1,838 fires burned 10,334 acres.

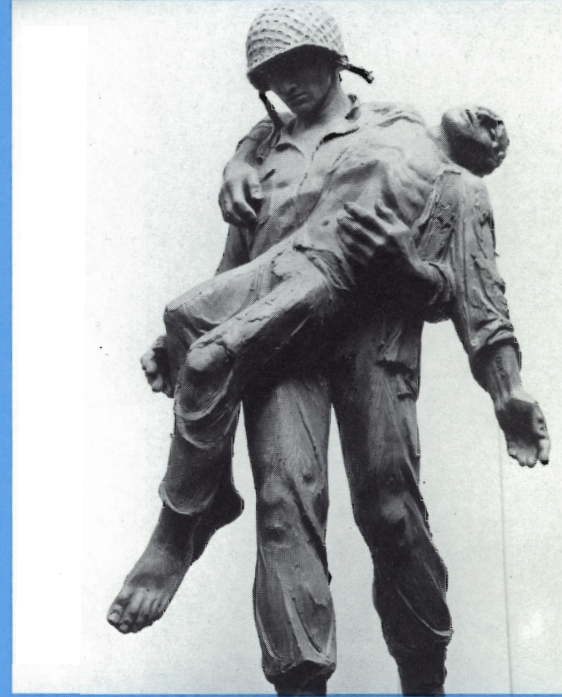
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## Natural Lands Management

In August, the Pine Barren Plains were listed on the Register of Natural Areas. Pine Barren Plains, encompasses approximately 13,358 acres and contains the largest and perhaps the most representative "Pygmy Forest" community type worldwide.

## Historic Preservation

Under the new Certified Local Government (CLG) Program local governments can become certified and receive increased technical assistance and funding for historic preservation. The program authorized by the National Historic Preservation Act Amendments of 1980, is designed to provide better coordination between local, state, and federal historic preservation programs. Certification offers local governments eligibility to apply for a portion of the State's federal grant funding for historic resource survey and historic preservation planning projects.



*The Liberation Monument*  
Dept. of Defense



Barry Leitch

# Division of Fish, Game and Wildlife . . .



## Fisheries

During 1985, the Marine Fisheries Administration provided the technical assistance and information which resulted in the formation of the New Jersey Marine Fisheries Development Commission. This new commission, formed by executive order of Governor Kean, will coordinate the efforts of various state agencies which impact on the catching, processing and marketing of the state's marine fisheries resource. With funding provided by the Port Authority, New Jersey will be able to better utilize, market, and manage these valuable resources.

The Pequest Trout Hatchery and Natural Resource Education Center exceeded expectations.

- The production of trout for our state's fishermen was excellent with over 600,000 fish produced for both fall and spring fishing excitement.
- Tourists, schools and families began to visit the new Natural Resource Education Center attached to the hatchery. Approximately 3 thousand visitors toured the facility during a pre-opening celebration held the last week in April. Educational exhibits and materials are now being designed and will be constructed using funds raised in the private sector by the New Jersey Natural Resource Education Foundation.

## Non-Game and Endangered Species

New Jersey continues to lead other states in the Northeast in efforts to reestablish endangered and threatened wildlife:

- The eagle restoration project successfully released 11 young bald eagles into southern habitats in 1985. Two of these 11 eagles were adopted by the Haddonfield Middle School. The

*“583-Acres of wetlands were purchased with funds received from the first duck-stamp sale . . .”*

student body raised \$6,400 and donated the money to the “Check-off for Wildlife” program to help raise two young eagles.

- In past years the osprey was successfully reintroduced in coastal areas of

the state and subsequently removed from endangered status. This year six young ospreys were released into Northern New Jersey environments. If successful, this fish eating hawk will stand with the bald eagle and the wild turkey as examples of our State's commitment and efforts to properly manage New Jersey's environment.

The Department was responsible for organizing a major effort to secure habitat for migrating shorebirds on the Delaware bayshore. Through money provided by PSE&G as a mitigation for the Salem Nuclear Plant, the Division has started acquiring land, restoring marsh and collecting information on shorebird use and possible human use conflicts.

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## Wildlife Management

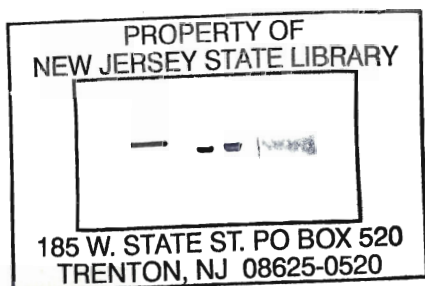
The first wetlands were purchased with funds raised with the sale of state-issued duck stamps and associated art prints. The landmark purchase was a 583-acre tidal marsh and upland habitat tract located near Heislerville in Cumberland County. The property is located on the western side of West Creek with about 4,000 feet of tidal frontage. This coastal tract will be available as open space for birdwatching, hiking, photography, crabbing, fishing and hunting. The first year's revenues from the stamps totaled more than \$600,000 and will be used for wetlands acquisition and conservation.

New Jersey's efforts to restore the wild turkey to all areas of the state continues to be successful with large turkey populations found in 14 of the 21 counties. Live trapping and transfer of turkeys into unoccupied range will continue for another three to four years until all available turkey habitat has been stocked. More than 1,100 square miles of turkey range has been opened for hunting during the spring gobbler season.

Cooperative efforts between New Jersey and Arkansas biologists continues to swap New Jersey ruffed grouse for Arkansas wild turkeys. The theory behind the trade is that wild turkeys from Arkansas will adapt more readily to the oak and pine forests of southern New Jersey than birds from northern forests. Arkansas, meanwhile, is using New Jersey ruffed grouse to rebuild a population of these popular game birds.

Deer harvest totals in New Jersey continued to set new records during 1985 with a total take of 25,619 deer. The state's deer herd remains in a very healthy condition with statewide population estimated at 135,000 animals spread over the state's 5,000 square miles of deer range.

*The Osprey has been removed from endangered status*



## Division of Coastal Resources . . .



The first comprehensive set of amendments to the Coastal Resource and Development Policies were developed in 1985 with considerable public input and assistance. A new mitigation policy is proposed to consolidate compensation or mitigation requirements for disturbances or loss of wetlands, intertidal and subtidal shallows or other environmentally sensitive areas along the coast. It also raises the Division's standard to generally require two acres of mitigation for every acre destroyed.

In addition, the effect of the proposed amendments will be to clarify vague language in various sections of the Rules. The policy revisions should enable developers, homeowners, professionals, trade groups, and other interested individuals to better interpret the policies and determine the requirements for acceptable actions in the coastal zone. The policy changes will take effect in February, 1986.

With the Division of Parks and Forestry, the Division built and placed New Jersey's first barrier-free beach access walkways at Island Beach State Park. The Division also worked with the Borough of North Wildwood to add a similar walkway to provide beach access for handicapped persons.

The legislature passed an amendment to the Waterfront Development Act which provides the DEP with the power to issue financial penalties to waterfront owners who illegally place structures in areas below mean high water. Penalties of up to \$1,000 for each separate offense, are allowed by the amendment, with a maximum of \$100 per day additional penalty for every day the violation continues.

### Shore Protection

The Division received a 4 million dollar grant from the U.S. Department of Commerce under the federal Coastal Zone Management Act. The grant runs from September 30, 1985 thru December 31, 1986. Two million dollars of this grant is

*“New Jersey's first barrier-free beach access walkways were installed at Island Beach State Park . . .”*

a one time provision for an Emergency Beach and Dune Restoration Program presently being implemented by the Division. The major focus of this program is a series of small grants to coastal municipalities and counties to

allow them an opportunity to develop and repair and enhance dunes along their beaches. The program provides funds to purchase and install sand fencing, plant native dune vegetation and construct oceanfront walkways over dunes adjacent to streetends in an effort to prevent future overwash. Also included within this grant are funds for four major studies:

- Wetlands Buffer Delineation
- Marina Pollution Assessment
- Identification of Future Coastal Mitigation Sites
- Lakes Bay Area Wide Water Quality Monitoring

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Hurricane Gloria hit the New Jersey coast on September 27, 1985. Only minor damage occurred along the coast, the worst of which occurred in Cape May County and along Delaware Bay.

During 1985 a Coastal Storm Hazard Mitigation publication was issued by the Division which addressed the techniques of hazard mitigation on barrier islands.

Governor Kean signed the second appropriations bill from the 1983 Shore Protection Bond Issue, providing the Division with 10.8 million dollars for shore protection projects. The following efforts are planned for 1986:

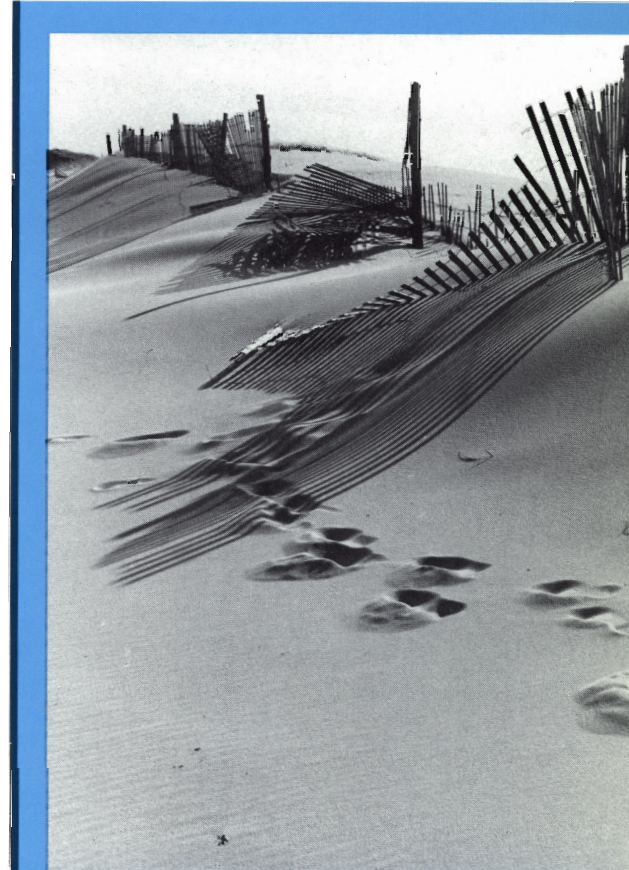
- Major beachfills in Avalon, Stone Harbor and Atlantic City
- Jetty repair in the Shark River Inlet and Middle Township
- Bulkheads in Point Pleasant Beach, Burlington, Keyport, Ocean City and Atlantic Highlands.
- A new south jetty in Barnegat Inlet

In addition, projects are proposed in conjunction with municipal and state park development in Elizabeth, Bayonne, Florence and Salem. Funds will also continue to be available for emergency repairs.

### **Mapping Programs**

During 1985, 193 maps were prepared and adopted by the Tidelands Resource Council.

Many coastal wetlands maps were revised and updated in 1985 to show which areas of the state are regulated under the Wetlands Act. Attendance at public hearings on the maps was high—in Ocean County, hearings attracted over 500 people to review and make comments on the maps.



Earl Baker



*Barrier-free beach access walkway*  
Karen Kominsky

## Green Acres . . .



For Green Acres, 1985 was the year of the Green Trust. The year opened with the first appropriation of funds from the 1983 Green Trust. In January, pre-application packages for funding assistance under the Green Trust went out to all of New Jersey's 567 municipalities and 21 counties.

In the area of aid to local governments, \$19 million in loans and \$9.6 million in grants was designated for county and municipal acquisition and development of park and open spaces.

- The Perth Amboy Marina was dedicated in 1985. The project is a joint funding effort of Green Acres, Land and Water Conservation Fund, and local monies. State and federal funds totaled 90% of the costs.
- In April, the City of Camden received a boost when Governor Kean, officials of Campbell's Soup, and representatives from Green Acres attended a ceremony celebrating both Campbell's renewed commitment to Camden and Green Acres funding (1.5 million) of phase three of Camden's Waterfront Park.
- In May, a lake and boathouse were dedicated at Mercer County Park. These additions to the county's largest park have already proven extremely popular.
- In June, park dedications included: the third public golf course in Morris County (Punch Brook), Allentown Lake in the Borough of Allentown (which was assisted in both the acquisition and development of this site for recreational facilities, passive areas, and lake restoration), and the James J. Howard Transportation Center in Asbury Park for which Green Acres assisted in the funding of the landscaping.
- In 1985, eight years of planning efforts came to fruition when

*"The Green Trust provided \$28.6 million in loans and grants to local governments . . ."*

Lafayette Township dedicated a blue heron rookery covering over 250 acres. This was a cooperative effort between Green Acres, the Sussex-Warren Resource Conservation and Development Project, and

the township. Access to the area will be controlled.

- Plainsboro Township in Middlesex County, dedicated the Cranbury Brook Trail which was developed with a 50%- \$104,800 grant from Green Acres. The project is situated in a rapidly growing area and includes a 3-mile jogging path.
- In Ocean County, the Lake Shenandoah field sports complex was dedicated. The project used \$537,000 in Land and Water Conservation money (through the 1983 Jobs Bill) as a match for the county's share. It is part of a 7 mile County greenway which is being acquired with the help of Green Acres funds. The 113 acre complex includes 6 soccer and two softball fields and involves the redevelopment of an old sanitary sewage facility area.

In the area of state acquisitions, \$9,200,000 was designated for the purchase of additional lands.

## *. . . on the road to a clean New Jersey*

- A conservation easement on 910 acres in the heart of Allamuchy State Park was acquired at a cost of \$1,365,000. This conservation easement will allow the Boy Scouts to retain use of the site while protecting the site's natural condition.
- Acquisitions to state lands included purchases at Ringwood and Liberty State Parks as well as lands for the historic Delaware and Raritan Canal State Park.
- In order to protect the last remaining bald eagles nest in the state, 1,500 acres were purchased in Cumberland County.
- Land and Water Conservation Fund monies (\$173,000) were combined with Public Service, Electric and Gas mitigation monies to acquire land which will protect critical horseshoe crab habitats. These sites (Moore's, Reed's and Cook's beaches) are important feeding grounds for wildlife on the Atlantic flyway.
- In the Pinelands, over ten thousand acres were acquired during 1985:
  - 2,694 acres are in the Cedar Creek Headwaters (preservation area). These acquisitions will serve as additions to Double Trouble State Park, Lebanon State Forest and Greenwood Forest. This acquisition will also provide protection for the headwaters of the Cedar Creek.
  - 2,290 acres, also situated in the preservation area, were acquired as additions to Bass River State Forest. Ultimately, this project will connect state-owned lands in Wharton State Forest with Bass River State Forest.
  - 2,443 acres were purchased in the Upper Wading River project (preservation area). This acquisition will be an addition to Greenwood Forest and provide protection for the headwaters of the Upper Wading River.
  - 2,650 acres were acquired in the protection area of the

Pinelands as part of the Makepeace Lake project. This project will provide an environmental connector between the northern preservation area and the state-owned forests in the southern portion of the Pinelands. The Makepeace Lake project will also provide protection for a wide variety of rare plant species.

The purchase price for the above 10,076 acres was \$6,926,937. Funding for these acquisitions was provided by State Green Acres Program, Federal Land and Water Conservation Funds and Federal 502 Program.

Also, early 1985 saw the release of a 28 minute film called "Green Acres—Preserving New Jersey's Open Space." Funded in part by Exxon and produced by the N.J. Network the film traces the history and future of the program. The videocassette is available for loan to interested groups.

James Currie



# Office of Science and Research . . .

1985 brought growth and expanded program responsibilities in the Office of Science and Research (OSR):

## **Risk Assessment**

The Risk Assessment Unit of OSR, which estimates the relationships between the degree of toxic chemical exposure and the extent of health effects, provided the Department with technical support on numerous emerging issues. The Unit initiated several research projects tailored to answering specific health related questions for the State such as the cleanup problem question: "How Clean Is Clean?". In the autumn, the group in conjunction with the Division of Waste Management, began a seminar series on "Concepts in Risk Assessment," inviting speakers each month to discuss different aspects of the risk assessment process.

In order to better address the issues of risk communication, the OSR conducted a Risk Communication Workshop. Using radon as a case study, experts from around the country, met, were briefed on the radon findings, and discussed strategies for explaining to the public the problems of radon and DEP's plans for management. The recommended approach was for the State to immediately take the initiative in explaining the problem and to develop an active public information campaign to address the public's needs. The approaches developed, as a result of this conference, will be adaptable to a variety of environmental contamination and public health problems.

## **EPA Grant Awarded**

Through the efforts of OSR, New Jersey was chosen as one of five demonstration states to receive a grant from EPA's

*"The EPA granted the DEP funds to explore new ways of improving environmental decision making . . ."*

Office of Policy, Planning and Evaluation. The grant was for participation in a pilot project exploring ways to improve environmental decision making. The program provides technical and financial support to the states to demonstrate im-

proved methods of compiling, analyzing, and displaying existing environmental data.

## **New Jersey's Safe Drinking Water Act**

In 1985, OSR continued to fulfill its A-280 responsibilities involving data analysis, maximum contaminant level development, research projects, and quality assurance activities. Statistical summaries of the initial round of monitoring results were prepared on a contaminant and regional basis. Additionally, 7 contaminant-specific risk assessment support documents evaluating the health effects of the contaminants were



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prepared. The remaining 15 documents are in preparation. Research studies are also in progress related to the detection, transport, and fate of drinking water contaminants. OSR's Office of Quality Assurance has certified 32 laboratories to perform the A-280 testing.

### **Right-to-Know**

The Right-to-Know program has been very busy despite a setback at the beginning of 1985 when manufacturers were exempted from the law's requirements by a court decision that ruled federal programs preempted the state law. An appeal decision in October reinstated the DEP survey program for manufacturers. The DEP has sent surveys to 60-65% of the approximately 50,000 employers covered under the law. About half of those surveys have been returned. Data for 2,500 chemical users has been entered into the database. DEP inspectors have conducted more than 60 on-site facility audits during the year to verify information submitted on employers' surveys.

### **Special Investigations**

The study of dioxin contamination continued for the third year in New Jersey. Sampling was performed at 23 additional locations and one third were found to have detectable levels of 2,3,7,8-TCDD, the most hazardous dioxin compound. OSR, in conjunction with the Division of Waste Management, met with the site owners to discuss the development of remediation plans for controlling and cleaning up this very potent toxin. Another significant area of potential economic and health problems is fishing (recreational and commercial) and the consumption of commercially important, dioxin-contaminated marine or estuarine species. Risk evaluations performed by OSR's Water and Biota and Risk Assessment Units demonstrate an excess risk of cancer for persons consuming contaminated fish and crabs. As a result of these findings the Departments of Environmental Protection and Health issued sale and consumption prohibitions in affected areas.

Toms River residents and local government officials expressed concern about possible environmental and health problems that might result from industrial waste being discharged into the ocean from a plant facility of Ciba-Geigy. The effluent discharge is carried out to the ocean through a 10 mile long pipe and released 3500 feet offshore. OSR conducted extensive effluent analyses to assess the problem and worked through the spring to develop a plan of action that required a consultant to perform water quality sampling of the shore surf zone and to sample at and around the pipe discharge. Biological sampling was conducted at the same time. Based on the findings and after consultation with a scientific peer review group, OSR will make recommendations for further

study. The findings will also contribute to DEP's review and approval of Ciba-Geigy's beach monitoring permit requirements.

### **Geographic Information System**

During 1985, digital base maps with existing statistical database management and mapping technologies were used in a number of cooperative projects with other OSR units and DEP divisions. Digital statewide wetlands, water supply, watershed, population, and waste manifest data sets were compiled into a series of maps and tables to assist the Hazardous Waste Facilities Siting Commission in identifying areas of the State for more detailed evaluation regarding the siting of hazardous waste treatment facilities.

*Sampling New Jersey's bays and estuaries*  
Ron Varsaci



# Management and Budget . . .

## Financial Management, Planning and General Services

On October 8th the first DEP conference for minority and women-owned business was held. The purpose of the conference was to familiarize participants with contracting opportunities and procedures through the Department. As a result of the conference, numerous requests to participate in DEP contracts and subcontracts were received from interested applicants.

A consulting firm was selected to assist the Department in increasing minority business participation. The firm will make recommendations in identifying, listing and evaluating minority and women-owned businesses and assuring that these businesses are made aware of the unique contracting requirements of certain DEP agencies.

The federal budget period for all federal grants from the Environmental Protection Agency was converted to coincide with the State fiscal year. During 1985, federal grants amounting to \$21 million (excluding Superfund grants) were awarded to the Department.

Through a grant received from the Environmental Protection Agency, a Grants Monitoring System is being developed. When implemented, information will be available to division directors and program managers regarding the status of each grant awarded to the DEP.

*“The first DEP Conference for minority and women-owned businesses was held in 1985*

*...”*

Under P.L. 1985, c.115, the responsibilities for the administration of the New Jersey Spill Compensation Fund were transferred to the DEP. This transfer has placed the administration and operations

being performed under this fund within one department, eliminating duplication of effort. Procedures are now being streamlined and reporting functions are being consolidated as they relate to Spill Fund activities. Efforts are also being increased in the area of cost recovery in order to maximize the recovery of expenditures due back to vendors.

## Personnel and Data Processing Services

In the data processing arena, one of the major accomplishments was the establishment of the Department's Data Center with the procurement of an IBM 4381 mainframe computer and associated hardware and software. This was possible in large part due to continuing funding from the Governor's Data Processing Initiative Funds which, to date, have provided \$2.6 million in funding.

In the office automation and microcomputer arena, the Department moved to consolidate all office automation and microcomputer support under the Division of Personnel and

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Data Processing Services. 1985 saw the initiation of in-house training including "Introduction to the Microcomputer" for better than 100 DEP employees. Plans were also completed for the initiation of a Departmental resource center in which all future training and office automation enhancements will be conducted.

In the environmental and staff training area, there was a 71 percent increase in the number of DEP employees participating in courses sponsored by the Bureau of Environmental and Staff Training. This involved approximately 230 courses as sponsored by the Department.

The Training Office, under the Right-to-Know legislation, acquired and installed the Department's fit test booth. The booth is used to test and fit employees who may use respiratory protection equipment.

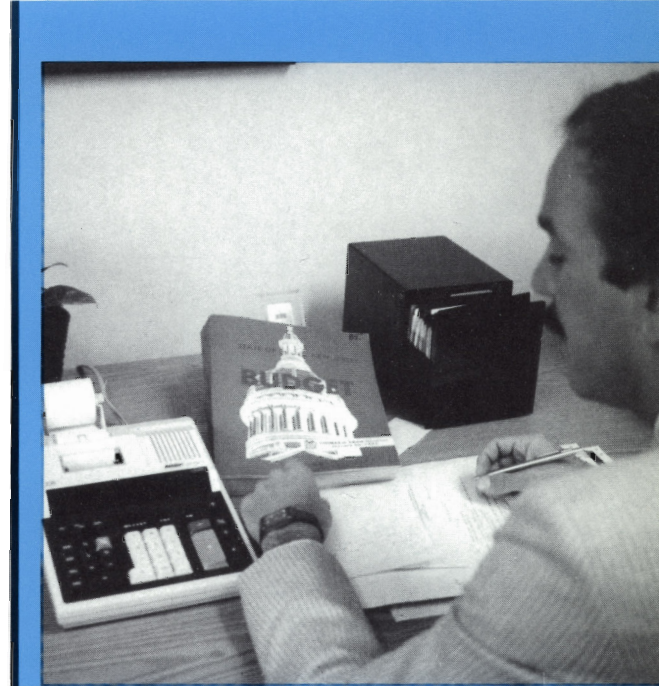
*"A new Data Center was established including the DEP's own mainframe computer . . ."*

The past year also witnessed the resurgency of a vigorous college recruitment program which, in 1985, was targeted at Departmental vacancies in the areas of Environmental Engineer and Environmental Scientist. Better than 12 colleges and universities were visited during the year with over 70 interviews being conducted.

Major reorganizations addressing management and personnel in four divisions were completed affecting about 1,500 managers, technicians, professional and clerical employees. The new division organizations are more responsive to changes in missions and objectives.

An enhanced promotional system accounted for over 500 promotional examinations within the Department. This appears to be the largest single year for promotional activity in the history of the department.

The Personnel Outreach Program, designed to educate departmental employees in the various facets of state employment, was dramatically enhanced for 1985 with 37 such presentations made around the state to various employee groups.



Greg Johnson



# Environmental Infrastructure Financing . . .

1985 brought tremendous progress in the area of environmental infrastructure financing. The Legislature adopted major portions of Governor Kean's proposals for the financing of wastewater treatment facilities, resource recovery and other solid waste facilities, landfill closure activities and joint/cooperative ventures with the private sector.

## The 1980's Perspective

With federal support being phased out, it is apparent that the State will have to provide additional financial assistance to local governments, especially in light of strict environmental enforcement programs, mandating the installation of expensive new technologies.

The development of innovative mechanisms for maximizing the effect of available funds proved to be the answer. An especially innovative approach is the development of infrastructure "trusts." These entities are semi-autonomous authorities which have the powers to issue their own debt, independent of the general obligation debt issued by the state. The Transportation Trust Fund and the Wastewater Treatment Trust (below) are examples of this approach. New Jersey has also pioneered the use of revolving loan programs and public/private cooperation in meeting its infrastructure financing needs.

## The New Jersey Wastewater Treatment Trust

As part of the major environmental infrastructure financing package of 1985, the New Jersey Wastewater Treatment Trust was established. This new entity is an innovative vehicle for increasing the amount of funding which the State can provide to local governments for the development of wastewater projects, while protecting the credit rating of the State.

*"New law changes encourage resource recovery development . . ."*

The Trust will be capitalized with \$40 million from the sale of general obligation bonds. The Trust may use these funds to "leverage" (borrow) additional funds, and provide substantially more in loans to local borrowers than the initial \$40 million. In conjunction with a State-managed revolving loan fund, which is to receive \$150 million from the bond sale, the Trust will provide financing to local wastewater projects at interest rates significantly below market rates.

## Resource Recovery Loan Program

The environmental infrastructure program also substantially expanded the funding available for resource recovery development. The issuance of \$85 million in bonds, which, combined



## *. . . on the road to a clean New Jersey*

with a previously authorized bond issue for \$50 million, and a general appropriation of \$33 million, will be utilized to provide low- or no-interest loans to offset the high cost of these facilities.

Several other changes designed to encourage resource recovery development were also enacted in 1985. A series of taxes and charges was levied on waste disposed of in landfills, to support solid waste planning programs in addition to establishing dedicated county funds to be used to reduce resource recovery tipping fees. A charge is also placed on the disposal of waste outside a county's borders.

In addition to these taxes, a municipality which hosts a solid waste facility is entitled to a benefit of at least \$1.00 per ton of waste accepted at the facility. Higher amounts may be negotiated. These changes were designed to make the transition from landfilling to resource recovery easier from a financial standpoint.

### **Landfill Closure**

A final element is a program of assistance to municipalities facing the high costs of closing landfills. The Sanitary Landfill Closure and Rate Relief Fund was established and provided an initial appropriation of \$8 million. The fund will provide grants and loans to municipalities to close landfills in an environmentally sound manner.

### **Privatization: A New Option**

Concurrent with these financial innovations was a realization of the benefits which result from public/private partnerships in the development of major projects. The involvement of private investors in a project can result in lower user fees than projects financed entirely by either the public or private sectors.

During 1985, legislation was enacted to allow for these beneficial public/private partnerships in resource recovery services, wastewater treatment project contracting and water supply projects.

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*The 1985 DEP Annual Report was prepared by the Resources Interpretive Service.*

**To report abuses of the environment,  
call DEP HOTLINE (24 hours a day)  
(609) 292-7172**



Greg Johnson

