

New Jersey Pinelands Commission



Annual Report 2004



Mission Statement
of the
New Jersey Pinelands Commission

The mission of the New Jersey Pinelands Commission is to preserve, protect and enhance the natural and cultural resources of the Pinelands National Reserve, and to encourage compatible economic and other human activities consistent with that purpose.

New Jersey Pinelands Commission

2004

Gubernatorial Appointees

Governor James J. Florio, Chairman

Candace M. Ashmun
Robert Hagaman
Edward Lloyd

Rev. Dr. Guy Campbell
Stephen V. Lee III
Betty Wilson

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William J. Brown

Burlington County

Patrick Slavin

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CHAIRMAN'S MESSAGE

When Governor James McGreevey asked me to chair the Pinelands Commission, he charged me with addressing many important challenges. I am pleased to report that, as my three-year term draws to a close, much has been accomplished.

The Pinelands Commission is leading a team of renowned state, federal and university scientists in a \$5.5 million study of the Kirkwood-Cohansey aquifer. This unparalleled research project will help policy makers determine how much water can be taken from this underground source to serve southern New Jersey's homes and businesses without harming the Pinelands environment or our coastal estuaries.

The \$13 million "Pinelands Conservation Fund" was established to sustain important Pinelands initiatives in the years to come. Through this fund, land acquisition, applied research and sound community planning will receive much needed support.

Sub-regional conservation initiatives, undertaken with the support and assistance of progressive municipal governments in Jackson, Manchester and Barnegat Townships, have better protected thousands of acres of land in the Toms River basin and the Ocean Acres area. With help from a William Penn Foundation grant, we are also partnering with Medford and Evesham Townships to better protect a 14,000-acre region that adjoins one of the Pinelands' crown jewels, Wharton State Forest.

The Pinelands Commission also approved a 4,100 acre land use classification that affords far greater protection to the Oyster Creek basin, an invaluable ecological resource in Ocean and Lacey Townships. We have also launched a comprehensive re-examination of land use designations throughout the entire Pinelands to ensure that we are adequately protecting important natural resources and accommodating growth in the appropriate locations.

Through the generous support of the Geraldine R. Dodge Foundation, the Commission was able to hire nationally acclaimed planning and transportation consultants to help Hamilton and Winslow Townships prepare "smart growth" community development plans. With the Dodge Foundation's continued support, we are now offering this same type of expertise to Egg Harbor Township.

A task force of public and private partners is nearing completion of its future housing projections for the Pinelands. This work will be indispensable as the Commission determines how best to adjust the Pinelands zoning program.

These are but a few of the many important steps being taken to protect the Pinelands for future generations. Yet, important challenges remain. We must be forward-looking and open to new ideas that further the goals of the Pinelands Protection Act, particularly those that help to better protect our water resources, properly manage our forests and maintain strong, economically sustainable communities. As we look ahead, I am confident that the Pinelands Commission will remain dedicated and vigilant in its continuing efforts to protect this very special part of New Jersey.

Sincerely,
James J. Florio



PINELANDS COMMISSION HIGHLIGHTS FOR 2004

- ✍ Scientific field work began on the ground-breaking Kirkwood-Cohansey Aquifer Study, one of the most important Pinelands research efforts ever (page 18).
- ✍ Under the Pinelands Excellence Program, smart-growth community action plans were completed for two Pinelands growth communities and a grant was secured to begin planning for a third community (page 3).
- ✍ The Pinelands Excellence Program earned the Commission a statewide planning award (page 4).
- ✍ The first-ever sub-regional conservation planning effort in the Toms River Corridor project was completed and will result in far better protection of land, water and habitat (page 4).
- ✍ The Commission reached an agreement to permit an important electric utility infrastructure project in a way that enhances the protection of Pinelands resources (page 28).
- ✍ The same electric utility project paved the way for creation of the \$13 million Pinelands Conservation Fund to support natural resource protection efforts (page 22).
- ✍ The Commission solved an extremely difficult regulatory problem in the Ocean Acres section of Barnegat Township and, as a result, protected 450 acres of land (page 26).
- ✍ Another complicated development permitting issue – Presidential Lakes – was resolved to include the protection of over 650 acres of land (page 27).
- ✍ As a result of an ecological re-examination of the Oyster Creek watershed, the Commission has proposed to re-designate 4,100 acres of land to more protective zoning (page 15).
- ✍ The Commission implemented a reasonable application fee program that has run smoothly and generated hundreds of thousands of dollars to help underwrite the cost of project reviews (page 23).
- ✍ The Commission successfully resolved a complex legal dispute over the Sanctuary Development in Evesham Township (page 27) and launched an ambitious conservation planning initiative in the region (page 6).
- ✍ A re-examination of the Pinelands Plan’s housing projections was started, the first study of its kind in 24 years (page 8).
- ✍ The design and creation of the Commission’s new comprehensive data information system was nearly complete at year’s end. The new system will greatly improve efficiency and overall service to the Commission’s clients (page 23).

✍ Working with the NJDEP, the Commission secured funding for the preparation of a model stormwater ordinance to improve the Pinelands stormwater program (page 12).

✍ The Commission initiated a comprehensive review of Pinelands forestry policies and practices with a goal of preserving forestry as a natural and economic resource (page 7).

✍ Timed-growth programs and clustering were examined to determine how these practices can best be applied in the Pinelands (pages 8 and 9).

New Pinelands Commissioners in 2004

In early 2004, two new members joined the Pinelands Commission: Patrick Slavin, who represents Burlington County and Francis Witt, who represents Gloucester County. Witt replaced Richard Westergaard, who served since 2000 and Slavin replaced S. Joseph Kowalski, who served since 1995. Under the Pinelands Protection Act, the 15-member Commission is structured to include federal, state and county representation. Each of the seven county governments within the million-acre Pinelands reserve appoints one representative to the Commission.

Patrick Slavin presently serves as a lecturer in Biology at Burlington County College. Prior to that, he served for 14 years as manager of agricultural operations for A.R. DeMarco Enterprises, a then-10,000-acre cranberry farm in Woodland Township. Slavin also served as the Director of Public Health for Cumberland County, Director of the Cumberland County Mosquito Control Commission, as an entomologist with the Ocean County Mosquito Commission and as a Research Associate with the USDA Agricultural Research Service. Among other civic and professional involvement, Mr. Slavin has served on the American Cranberry Growers Association's Board of Directors, the New Jersey Blueberry/Cranberry Research Council, New Jersey Pesticide Control Council, Woodland Township Planning Board and the Millville Shade Tree Commission. He also worked on the task force that recommended the Maurice River for nomination to the National Wild and Scenic River System. Slavin holds a Ph.D. in ecology from Rutgers University, a Masters degree in entomology from the University of Maine and a B.S. degree in Biology from Marquette University in Wisconsin.

Francis Witt is a Partner in the firm of Joseph F. McKernan Architects and Associates in Cherry Hill, where he also serves as Treasurer and Marketing Principal. A licensed Real Estate Agent for over 30 years, he has represented a host of US and international companies as a consultant. Witt has a long career in public service. He served for 16 years as Mayor of the Borough of National Park and, prior to that, served eight years on Borough Council. He is past Vice President of the New Jersey League of Municipalities and past President of the Gloucester County Mayors' Association. Witt served 15 years on the Board of the Gloucester County Utilities Authority, including stints as Director and Chairman, and on the board of the Gloucester County Solid Waste Council. Additionally, he is active in a number of civic, business, church and governmental organizations.

In Memoriam: John T. Ross (1944 - 2004)

On November 21st, 2004, a champion of Pinelands preservation, John T. "Jack" Ross, died following a lengthy illness. Ross, a resident of Hamilton Square, had a dedicated and accomplished career in Pinelands land protection.

From 1980 to 2000, he served with the New Jersey Department of Environmental

Protection Green Acres Program, much of that time as a land acquisition supervisor. There, Ross headed the Pinelands acquisition unit, administering both State and federal Pinelands funding to protect important ecological land within the Pinelands National Reserve. During his tenure at Green Acres, Ross facilitated the acquisition of over 100,000 acres, including some 70,000 acres through the federally funded Section 502 Pinelands acquisition Program. He lead major expansions of several State land units and spearheaded the creation of the 10,000-acre Makepeace Lake Wildlife Management Area in Atlantic County.

In 1987, Ross became the first Executive Director of the newly created Pinelands Development Credit (PDC) Bank while continuing to work at Green Acres. He held the Executive Director post – which became a full-time position in 2000 – until his retirement in 2003. At the PDC Bank, Ross helped to build the program into the most successful regional transfer-of- development-rights (TDR) program in existence anywhere. Working cooperatively with the Pinelands Commission, Ross facilitated the protection of nearly 40,000 acres of privately owned forests and farmland and helped advance other Pinelands preservation objectives. Today, the PDC Program is considered a TDR model for smart growth planning and natural resource protection. Following his retirement, Ross continued to work as a consultant to the PDC Bank.

Jack Ross will be most remembered for his kindness and positive outlook. His good nature helped to build consensus and advance preservation of the Pinelands.

LAND-USE & PLANNING ACTIVITIES

Smart Growth & the Pinelands Excellence Program

The Pinelands Commission expanded an innovative smart-growth program in 2004 to include a third municipality. In 2002, the Commission received a \$187,000 planning grant from the Geraldine R. Dodge Foundation with the goal of fostering the development of "livable communities" in the rapidly developing Pinelands Regional Growth Areas. Through a competitive process, the Commission selected two municipalities, Hamilton Township in Atlantic County and Winslow Township in Camden County, to participate in the "Pinelands Excellence Program." Working with the municipalities, the Commission engaged the services of a nationally renowned planning firm to help each community develop a strategic vision of its future and prepare Community Action Plans.

The planning process relies on community participation. The townships form "visioning teams" comprised of representatives from across the community. Team members work with the consultants to develop a vision statement to guide preparation of the Livable Community Action Plan. Teams use a community-based observation technique in which they were provided with cameras and asked to document, in pictures and words, what they like and do not like within their communities and surrounding areas. Input from this process helped ensure that the resulting visioning statements are grounded in reality and not just abstractions from a theoretical exercise. Community action plans were then prepared, setting concrete proposals for zoning, subdivision, site planning, and infrastructure improvements to achieve their visions.

For example, model ordinances were developed to address community design issues and land clearing. Other measures are designed to preserve small-town character and community historic assets as well as enhancing circulation systems and supporting greater pedestrian and bicycle use.

In early 2004, the Hamilton and Winslow Community Action Plans were completed and

endorsed by the governing bodies of the two towns. A series of informational workshops were held to share the results with planners and public officials from throughout New Jersey. Both communities began implementation of the Action Plan strategies.

Later in 2004, the Commission was again selected by the Dodge Foundation to receive a grant – this time for \$167,000 – to continue the work of the Pinelands Excellence Program. The new grant will be used to support a similar smart-growth planning effort with Egg Harbor Township. In the past 10 years, Egg Harbor Township has experienced accelerated residential growth fueled by the rapid expansion of casino gaming in Atlantic City. The town has struggled to keep up with the pace of growth. Egg Harbor Township's strategies may address critical issues like open space and recreation, transportation, tree preservation, stormwater management and the siting of schools and other community facilities.

Smart Growth Planning Award

In March 2004, the Commission received an "Achievement in Planning" Award for Regional Planning from the New Jersey Planning Officials organization. The award recognized the Pinelands Excellence Program as an innovative approach to address increasing growth pressures on Pinelands municipalities. The Pinelands Excellence program advances many principles of smart growth planning by developing strategies to create vibrant, livable communities that maintain essential natural and cultural resources. These strategies include mixed-use development and better community design by utilizing tools such as zoning, planning, and infrastructure improvements.

Conservation Planning & The Toms River Corridor Project

During 2004, the Commission completed the first of several innovative sub-regional planning projects aimed at enhancing the protection of critical habitat and natural resources. A year earlier, the Commission concluded an intensive review of the Pinelands protection program. As part of a five-year strategy plan, the Commission chose to pursue sub-regional conservation plans as a means to better protect Pinelands resources in areas where natural resource values and development pressures clash. The strategic plan specifically called for one such project in the Toms River corridor of Ocean County, an area where potential conflicts exist between zoning and development objectives and high-value natural resources. Shortly thereafter, the Commission established the Toms River Corridor Task Force to lead this effort. Encompassing a portion of the Barnegat Bay watershed within Jackson and Manchester Townships, the project area covers nearly 17,000 acres, or 21 percent of the 124-square-mile Toms River Watershed. Of that land area, approximately 15,000 acres lie in Jackson, with the remaining acreage in Manchester. It includes approximately 7.8 miles of the Toms River main stem and 4.6 miles of the Ridgeway Branch, one of its major tributaries. The area contains extensive tracts of ecologically intact Pinelands forest and wetlands and habitat for at least a dozen threatened or endangered plant and animal species. In addition, the Corridor is currently home to several thousand people and is facing mounting development pressures. The area includes six Pinelands Management Area districts ranging from the ecologically critical Preservation District to the Pinelands Regional Growth Area and has three designated Pinelands Villages: Cassville, Legler and Vanhiseville.

Twenty individuals representing natural resources, planning, and governmental interests were invited to serve on the Task Force. In addition to local and county officials, representatives from a variety of offices of the NJDEP, including the Endangered and Non-Game Species

Program, the Division of Watershed Management, the Office of Policy, Planning and Science, and the Green Acres Program participated. Also participating were representatives from the New Jersey Audubon Society, New Jersey Conservation Foundation, Pinelands Preservation Alliance, and the Trust for Public Land. The US Naval Air Engineering Station Lakehurst, located on the southern edge of the Corridor, also was represented. The task force was supported by staff from the Commission. In addition, a group of technical advisors on botany, herpetology, geology, hydrology and other key fields provided ongoing expert guidance to the Task Force.

The Task Force was asked to assess the natural resources of the Corridor, prioritize protection areas, and craft a regional land use and protection strategy for the area, which could then be reviewed and implemented by the Townships, County, and Pinelands Commission. In early 2004, the Task Force finished its analysis and planning efforts and issued a report on its findings and recommendations. The report sets forth a comprehensive strategy for protecting threatened and endangered animal species and other natural resources in the region through coordinated zoning, site design and permanent land protection. The Pinelands Commission endorsed the document at its March 2004 meeting.

In the plan, the Task Force reported several key findings:

- Development pressures exist and are growing, with approximately 1,500 residential units currently proposed for construction within the corridor, and more are expected;
- Water resources are threatened, with both water quality and quantity in jeopardy from the inter-basin transfer of wastewater and proposed development near high-quality waterways and groundwater recharge areas; and
- Clusters of threatened and endangered species exist within and around the Corridor in large, relatively undisturbed landscapes.

As far as recommendations, the Task Force proposed utilizing a combination of planning, zoning and resource protection tools in the area. A series of Pinelands and municipal re-zonings were proposed to greater protect water quality and critical wildlife habitat, enhance habitat buffers, and establish connectors between large areas of undeveloped and protected habitat. These will be supported by reductions in permitted housing densities and by implementing stronger clustering provisions in a number of areas. On-site clustering standards will help to minimize impacts on environmentally sensitive land while allowing for appropriate residential development.

The Plan also calls for enhancing the use of conservation easements as well as stepping up efforts to acquire land for permanent protection. The State, County, and Townships are all actively pursuing land acquisitions of up to 2,000 acres that would be consistent with the recommendations of the Task Force. As long-term strategies, the Task Force is also encouraging the expansion of the Pinelands Density Transfer and Pinelands Development Credit Programs to allow greater use within the Toms River Corridor. Seventy-three percent of the Corridor will be protected through conservation-oriented zoning measures and 2,600 fewer homes will be built in the future. Future non-point source pollution of the Toms River and Barnegat Bay will be reduced and clustering will ensure that future development is directed away from the most environmentally sensitive lands.

The Task Force also developed a systematic approach for establishing, up-front, the type and scope of endangered and threatened species surveys that would be required of potential developers. This includes a set of criteria that tailors survey procedures based on zoning districts

and the type of development being proposed. This approach recognizes the habitat conservation measures already set forth in the overall plan and simplifies the survey process to provide greater predictability of regulatory requirements.

Subsequent to the Commission's endorsement of the Report, Commission staff and representatives of Manchester and Jackson worked cooperatively to draft the master plan and land use ordinances necessary to implement the recommendations of the Report. In late 2004, Jackson Township adopted a revised zoning plan for the Pinelands Area, including changes in zoning district boundaries and requirements for the clustering of residential development. The Commission is expected to take action on Jackson's revised master plan and land use ordinance in the spring of 2005. The Commission was also working with Jackson officials to develop an ordinance creating 600-foot wildlife buffers along certain waterways.

Southern Medford & Evesham Conservation Plan

In June 2004, the Commission received a \$73,000 grant from the William Penn Foundation to fund an innovative natural resources conservation planning project for the southern portions of Evesham and Medford Townships in Burlington County. The region includes large areas designated under the Pinelands protection program for modest amounts of residential development. However, data compiled in recent years has documented that the area has a high concentration of rare plants and animals. These conflicts have led to several high-profile legal disputes between the Commission and local developers.

Additionally, the Commission recently has completed major studies of the Mullica River and Rancocas Creek watersheds that demonstrate the area's high quality water, aquatic and wetland resources.

The project formally got underway during the summer of 2004. The Commission has organized a steering committee, comprised of representatives from the NJDEP and the two municipalities, to oversee development of a conservation plan for a 22-square-mile project area. Under the direction of the Steering Committee, a detailed natural resource conservation plan is being prepared and may include innovative zoning, land preservation, resource management and community design recommendations. Also included will be a comprehensive natural resource inventory and integrated land acquisition strategy. In coordination with enhanced resource protections, the plan may call for streamlined regulatory requirements for developing in the appropriate locations and within certain standards. The planning project is expected to be complete by the autumn of 2005, with local implementation to follow.



The intersection of Jackson and Crowfoot Road in Medford Township lies within the Southern Medford and Evesham conservation area. Photo by Joel Mott

Elwood Corridor Project

The Elwood Corridor is a nearly 38,000-acre area in Atlantic County that serves as an important geographic link between the northern and southern Pinelands regions. It has been long argued that protection of undeveloped and undisturbed lands within the Corridor is essential to

preserving genetic biodiversity by providing a natural connection between the plant and animal communities of the northern and southern Pinelands. The Corridor covers parts of the Mullica River and Great Egg Harbor River watersheds. The region is also home to a number of threatened and endangered species, including southern bog lemming, northern pine snake, timber rattlesnake, corn snake, and pine barrens treefrog.

In 2004, the Commission began a conservation planning effort in the Corridor. The Commission is working closely with Atlantic County, the NJ Green Acres Program, the NJ Natural Lands Trust, Mullica Township, Hamilton Township, and the NJ Conservation Foundation to identify conservation opportunities through zoning, planning and land acquisition. To date, several re-zonings have been enacted in Mullica Township and township-owned parcels have been mapped and their ecological value assessed. Preparations are now underway to transfer some parcels to the State for preservation.

Forestry Policy Review

When done properly, forestry can help to revitalize the forest landscape, but when done improperly, it can affect the natural biodiversity of the Pinelands. In February 2004, Pinelands Commission Chairman James Florio reconstituted the Pinelands Forestry Advisory Committee, a blue ribbon panel charged with reviewing the forestry provisions of the Pinelands Comprehensive Management Plan. The Committee, comprised of eight leading experts in the fields of forestry, forest ecology and conservation biology, is evaluating harvesting, land preparation and re-vegetation practices conducted in the Pinelands to determine if they are consistent with the Commission's mandate to protect and maintain the Pinelands environment. At the same time, they are working to ensure that forestry remains a viable economic and cultural resource in the Pinelands. Based on the Forestry Advisory Committee's findings and recommendations, expected later in 2005, the Commission will determine if amendments to the forestry standards of the Pinelands Comprehensive Management Plan are in order.

Stronger Protection of Endangered Plants

In the fall of 2004, the Pinelands Commission proposed an amendment to the Pinelands Comprehensive Management Plan (CMP) to bolster protection of rare plant species. The change will incorporate into the CMP the official State-promulgated list of endangered plants, expanding the number of protected native Pinelands plants from 54 to approximately 92. The State list is maintained by the New Jersey Division of Parks and Forestry.

The State list, which now stands at 339 plants, was adopted pursuant to legislation passed in 1989. This was nine years after the adoption of the Pinelands CMP, which since 1980 has included its own list of 54 protected plants. The State list includes only the most vulnerable plants -- globally rare plants and species with five or fewer occurrences statewide. Of the 339 State-listed plants, about 38 occur in the Pinelands Area but are not currently on the CMP list. Another 20 are common to both lists.

Among the Pinelands plant species that will gain CMP protection through this measure are:

- Barton's St. John's-wort (*Hypericum adpressum*), a globally rare plant that typically occurs in vernal ponds. A significant portion of its small remaining worldwide population is in New Jersey;
- Sessile-leaf tick-trefoil (*Desmodium sessilifolium*), a Midwestern species with only one

known remaining population in New Jersey, which is in the Pinelands; Pine Barrens bellwort (*Uvularia puberula*), another globally rare species. The only New Jersey populations are in Pine Barrens habitat; and

- Lace-lip ladies'-tresses (*Spiranthes laciniata*) a southern orchid species that reaches its northern limit in the Pinelands.

Ecological Integrity Assessment

Pinelands policies to protect threatened and endangered plant and animal species largely rely on site-by-site surveys to guide decisions on whether and where to permit development. It is doubtful that site-based policies afford sufficient protection for rare animal species because their habitat requirements often extend beyond the boundaries of a particular site. This is especially true of wide-ranging threatened or endangered species, such as the pine snake, timber rattlesnake, and barred owl. Protection of these species requires the preservation of relatively large tracts of high-quality landscapes. A site-by-site-based approach also creates a complicated regulatory process for property owners.

In late 2004, Commission staff began preliminary planning for a comprehensive assessment of landscape and watershed integrity throughout the Pinelands to better ensure that important natural areas, including those that provide critical habitat for rare plant and animal populations, are protected. This effort may result in the modification of site-specific regulatory standards to reflect a landscape-level approach.

Housing Task Force

In 2004, the Commission formed the Pinelands Housing Task Force to review, update and revise housing capacity projections for Pinelands Growth Areas. This broad-based working group will ultimately recommend how future population projections should be factored into housing opportunities. Working with State, county and local officials and representatives from non-governmental organizations, the Task Force is assessing the future housing needs of the greater southern New Jersey region to determine what housing share can be apportioned to the Pinelands. At the close of 2004, the group was developing long-term housing demand projections for the 23 Pinelands Regional Growth Area communities, while considering factors such as available vacant land, infrastructure and environmental constraints. The Task Force is expected to release the results of its work in summer 2005. Its report will include recommendations for reapportioning housing densities within the towns as prescribed by the Pinelands Comprehensive Management Plan, while taking into account Pinelands land-use and environmental objectives.

Timed Growth Analysis

Since 1994, the Pinelands Comprehensive Management Plan has provided growth-oriented communities with a zoning and planning tool to better manage growth. The Municipal Reserve Program allows towns to set aside land as off-limits to major development for five-year periods, while other parts of the community are developing. This phased-growth mechanism ensures orderly growth, helps prevent piecemeal development and allows efficient infrastructure planning and development. However, to address more recent concerns over the pace of growth in certain communities, the Commission's five-year strategic plan called for revising the existing reserve provisions as well as examining alternatives for better timing a community's growth rate

with its ability to accommodate new residents. Further, only one of the 24 Pinelands Regional Growth Area communities – Hamilton Township – has employed a Municipal Reserve.

In response, the Pinelands Commission conducted an in-depth timed growth analysis in 2004. Directed by the Commission’s Policy and Implementation Committee, staff prepared a *White Paper on Timed-Growth Options in the Pinelands* in October 2004. The report detailed the need for additional relief in certain Pinelands growth communities, provided a comparative evaluation of the Municipal Reserve Program and other so-called “rate-of-growth” approaches in use nationwide, and made recommendations for enhancing the Municipal Reserve program. Moreover, it provided an analysis of eight Pinelands Regional Growth Area municipalities that could most benefit from participation in the program.

The Policy Committee has held a series of discussions and directed staff to begin preparing changes to enhance the Municipal Reserve Program. Additionally, the Commission has begun to explore the possibility of establishing a broader rate-of-growth program and is consulting with several nationally recognized experts in this field.

Clustering Analysis

The Commission’s 2004 strategic plan directed staff to re-examine the Pinelands CMP in terms of how it provides for clustering opportunities. Also called conservation subdivision design, clustering can be a useful planning tool for communities that wish to protect valued natural and scenic assets. While the CMP does promote both on-site and off-site clustering, the Commission wants to enhance the use of clustering in ways that will not promote landscape fragmentation or other undesirable results.

In October 2004, staff issued a comprehensive analysis of clustering, including assessments of the clustering experience in the Pinelands and throughout the nation. As a result of its investigation, the Commission has directed staff to prepare an amendment to the CMP to encourage greater clustering in Pinelands Forest Areas and Rural Development Areas under certain conditions.

Review of Municipal Ordinances

All municipalities and counties in the Pinelands Area are required to revise their master plans and land use ordinances in order to implement the objectives and standards of the CMP. To date, all 7 counties and 52 of the 53 municipalities with land in the state-designated Pinelands Area have had their master plans and land use ordinances certified by the Commission. Amendments to certified county and municipal master plans and land use ordinances must also be submitted to, and reviewed by, the Commission.

During 2004, the Commission reviewed and certified 130 such ordinances and master plans from 33 different Pinelands municipalities. Notable among these were master plans and ordinances that established a new Special Agricultural Production Area in Bass River Township of approximately 3,500 acres and a 40-acre mixed-use district in Wrightstown Borough encompassing lands formerly owned by the Federal government. The Commission also certified a new zoning plan for a portion of Upper Township that is located in the Pinelands Area. The plan in question includes comprehensive standards for golf courses and is designed to address the potential impacts this land use may have on water use and water quality. Zoning changes within the Pinelands Regional Growth Area were also certified, including the addition of age-restricted

housing as a conditional use in Galloway Township's Industrial Zone and the implementation of a conservation plan within the Ocean Acres subdivision in Barnegat Township.

Water Supply Planning

The Commission is continually engaged in activities to protect Pinelands surface and ground water from depletion. Overexploitation of Pinelands water resources could have devastating effects on the fragile ecological balance of the Pinelands as well as the region's residents and agricultural interests. The Commission's planning office routinely reviews requests filed with the NJDEP for new wells and water diversion permits. In 2004, Commission and NJDEP staff continued to collaborate to minimize impacts on the Kirkwood-Cohansey aquifer.

In early 2004, the NJDEP revoked the permit for Berlin Well No. 12, which was drawing down water levels in a nearby stream. For nearly two years, the Pinelands Commission urged the NJDEP to permanently close the well. The Commission originally recommended, in the early 1990s, against installing this municipal water supply well. The well is located just outside of the Pinelands but is next to a stream that flows into the Pinelands. Later, the well was temporarily closed after adverse impacts to a local wetlands complex resulted, potentially impacting a local population of swamp pink, a federally protected plant.

Commission staff continued to assess the potential impacts that increases in water withdrawal have on the Kirkwood-Cohansey aquifer. Applications for water allocations are reviewed to determine if surrounding surface waters will be adversely impacted, particularly as a result of an interbasin transfer (water drawn from one drainage basin and discharged to another). All requests for diversions exceeding 10 percent of the annual average water that recharges the watershed are directed to seek alternatives to the Kirkwood-Cohansey aquifer or demonstrate no ecological impacts. Such diversions are likely to deplete groundwater supplies, which directly effect local streams and wetlands.

As part of the multi-organizational Kirkwood-Cohansey research effort (see page 18), Commission staff began researching current water use and future water demand scenarios for residential, commercial and agricultural land uses. At the same time, work commenced on the development of a Pinelands-wide build-out scenario. Data on population, number of housing units, square footage of commercial space and acres of cropland within the Pinelands has been gathered in order to establish current water demand. Estimates of how much water is used for each type of development has been compiled to determine the amount of water that is currently withdrawn from the aquifer, consumed and discharged to the surface and ground waters. Conservation practices, irrigation techniques and best management practices will be considered to predict future trends. Current zoning, development patterns, lot status data and tax assessment information are inputted and manipulated in a Geographic Information Systems (GIS) to calculate the amount of existing development and the amount of development that could occur in a build-out scenario. Pinelands staff has already completed draft layers for several municipalities and will soon implement the same process for the rest of the Pinelands.

Monitoring and Assessing Inter-basin Transfers

The Pinelands Commission continues to work in cooperation with the United States Geological survey (USGS), Camden County Municipal Utilities Authority (CCMUA) and the

Monroe Township Municipal Utilities Authority to monitor and assess inter-basin transfers of wastewater effluent from Pinelands watersheds to the Delaware River.

During the autumn of 2004, the Pinelands Commission, CCMUA, Chesilhurst Borough, Waterford Township and Winslow Township endorsed a plan to increase the cap on the inter-basin transfer of wastewater from 1.2-million gallons per day to 1.5-million gallons per day in southern Camden County. The increase was made possible due to downzoning by the towns within their growth areas, and analysis of monitoring data that demonstrated no present impacts to streamflow levels. Currently, the three towns are pumping water from the Mullica Watershed and exporting approximately 1.0 million gallons per day of wastewater to CCMUA's Delaware River Treatment Plant.

In Monroe Township, the cap on inter-basin transfers to the Gloucester County Utility Authority's Delaware River Plant are set at 3.0 million gallons per day. Effluent is currently at 2.1 million gallons per day, an increase of 900,000 gallons per day since monitoring began in 1989. Results from the USGS monitoring program indicate that there have not been significant impacts as a result of these inter-basin transfers on the local stream system.

Mullica Watershed Planning

Under a contract with the NJDEP, the Pinelands Commission oversees the development of management strategies for the Mullica River Watershed, also known as Watershed Management Area No. 14. The Mullica Watershed encompasses parts or all of 24 municipalities in four counties: Atlantic, Burlington, Camden and Ocean.

During 2004, Pinelands Commission staff assisted Hammonton Town officials and Stockton State College researchers with efforts to secure a NJDEP grant to develop a watershed restoration plan for Hammonton Lake. The plan is proposed to include the implementation of nonstructural Best Management Practices to reduce phosphorus discharges to Hammonton Lake.

In addition, the following efforts regarding evaluation of storm water infiltration basins and development of a model stormwater ordinance were outgrowths of the Mullica Watershed planning program.

Stormwater Infiltration Basin Assessment

During 2004, the Pinelands Staff continued to assess the recharge function of stormwater infiltration basins in the Mullica watershed. In 2003, stormwater basins in Camden and Atlantic counties were identified and assessed for the presence of standing water 72 hours after a rainfall event. Several basins were documented under this assessment protocol as failing systems which may benefit from reconstruction and retrofit efforts to restoring groundwater recharge functions.

In 2004, a second round of visual assessments and data collection was conducted to better understand the reasons why these basins are unable to infiltrate rainwater as designed. Two stormwater basins, in Winslow Township and Chesilhurst Borough, were selected for further investigation as part of the NJDEP-funded pilot project. A geotechnical engineering firm worked with the Pinelands Commission to perform detailed soil analysis and recommend remediation plans for the two basins. The Commission plans to determine the reason for inadequate infiltration and work with the towns to implement corrective action. Through this project, the Commission and NJDEP hope to identify cost-effective measures to rehabilitate failing stormwater basins throughout the Coastal Plain.

A full report containing a catalog of all the basins identified and the results of the geotechnical analysis will be available in the summer of 2005.

Model Stormwater Ordinance

The Pinelands Commission teamed up with the NJDEP in 2004 to develop a Joint Stormwater Control Model Ordinance for Pinelands municipalities. As part of an agreement, the NJDEP is providing the Commission with \$25,000 to fund development of the model ordinance.

In early 2004, new NJDEP Stormwater management rules became effective, requiring municipalities to amend their Stormwater control ordinances. Pinelands municipalities are in the unique position of having to implement stormwater management ordinances that comply with both NJDEP and Pinelands regulations.

The Commission has long provided Pinelands municipalities with planning assistance in developing ordinances that implement Pinelands land-use, development and resource protection standards. Through this effort the Commission will assist towns in the development of a model ordinance that integrates both NJDEP and Pinelands regulations to avoid duplication of effort among municipalities. This collaborative effort will save local governments time and money. It will also provide regulatory predictability and ensure consistency among Pinelands municipalities that are charged with protecting shared surface and groundwater resources.

Pilot Program for Alternate Design Wastewater Treatment Systems

The Pinelands Commission implemented a pilot program in 2002 to strengthen protection of water resources from pollution originating from residential septic systems. The program authorizes the use of residential wastewater systems that are up to three times more effective than conventional and pressure-dosing septic systems in reducing groundwater pollution. The new systems are required for new unsewered homes on lots smaller than 3.2 acres in size. Five advanced treatment technologies have been authorized for use subject to a number of stringent operation and maintenance standards. These technologies were selected by an Ad Hoc Committee comprised of representatives from the Commission, the Pinelands Municipal Council, the New Jersey Builders Association and the Pinelands Preservation Alliance, with the support of engineers and scientists from the NJDEP.

Throughout 2004, Commission staff continued to provide technical and administrative assistance to Pinelands municipalities and health departments in their cooperative efforts to implement this important water quality protection program. Commission staff drafted pilot program ordinances for each of the 40 municipalities that are affected by the program. To date, 33 of the municipalities have adopted these ordinances authorizing the use of the advanced treatment systems. In 2004, Commission staff continued to meet with municipalities to explain the water quality benefits of the program and to answer questions posed by municipal representatives and residents.

August 2004 brought an end to the phase-in period and since that date, all new unsewered residential development on lots smaller than 3.2 acres must use the advanced treatment technologies. Over a dozen of the advanced treatment systems are now in full operation and effluent monitoring is confirming their effectiveness at attenuating total nitrogen loadings to Pinelands groundwater resources. In addition to those systems currently in operation, the Commission staff and Pinelands Area health departments continue to review and approve many new applications for the advanced treatment technologies.

Pinelands Scenic Byway

After several years of intensive planning, the Pinelands Commission, the formal nomination for the creation of a State Scenic Byway in the Pinelands National Reserve was submitted to the New Jersey Department of Transportation. Scenic byways have been designated throughout the nation as a result of the federal Intermodal Surface Transportation Efficiency Act of 1991. The Act provides grant funding and other incentives to entities seeking formal recognition of public thoroughfares with surpassing natural and/or cultural qualities. New Jersey adopted a parallel program a few years later and delineated its first byway not long after.

The Commission has been working with 16 municipalities and five counties to develop a scenic byway through the southeastern portion of the Pine Barrens. The approximately 130-mile-long byway stretches from Tuckerton and Batsto in the north to Port Elizabeth and Dennisville in the south. The Byway meanders through areas of striking natural beauty and rich historic heritage. With a focus on maritime portions of the Pinelands, the route takes particular advantage of the scenic qualities and historic hamlets of the Mullica, Maurice and Tuckahoe River Corridors.

The impetus for the byway designation arose from the Pinelands Rural Economic Development Program, which examined economic conditions in several Pinelands towns and recommended measures to stimulate environmentally suitable growth through various planning initiatives, incentives, public improvements, and redevelopment. One suggestion was for a New Jersey and National Scenic Byway that would bring widespread awareness of, and interest in, the natural assets of the Pinelands.

During the autumn of 2004, the Commission staff completed a draft Pinelands scenic byway nomination and circulated it among all of the municipalities along the route as well as the five-member byway organizing committee. The committee, comprised of municipal representatives, was established in 2002 to oversee completion of the nomination. After receiving final comments, the formal nomination was submitted to the New Jersey Department of Transportation (NJDOT) in December. The NJDOT Byway Committee is scheduled to review the nomination in 2005, after which final approval is expected.

After the byway receives state recognition, the NJDOT will produce directional signs that will be placed along the route and the nomination will be forwarded to the US Secretary of Transportation for federal designation. Listing as a byway enables the sponsors to apply for program-affiliated grants and provides access to a variety of promotional and marketing opportunities, including development of visitor centers, wayside exhibits, and self-guided tours. The byway will also be featured in the US Department of the Interior's byway website and in other state and national tourism programs.

Fort Dix Computer Recycling

In March 2003, the Pinelands Commission became aware of an NJDEP-permitted consumer electronics recycling center operating at the federal prison at Fort Dix, within the Pinelands Military and Federal Installation Management Area. At that time, the Commission determined that it would be appropriate to allow for the continued operation of the recycling center in order to determine whether a State decision to **reclassify consumer electronics as a "recyclable" hazardous waste** is appropriate for the Pinelands. Following a review, the Commission, in 2004, determined that the most appropriate means of doing so was through the establishment of a pilot program. The Fort Dix Consumer Electronics Recycling Center Pilot Program was proposed as a means to test whether continued operation of the center, if effectively

regulated and monitored, would reduce the waste stream to landfills, reduce illegal dumping, and enhance protection of Pinelands natural resources. A CMP rule amendment establishing the pilot program was proposed in October 2004 and is expected to take effect in mid-2005.

Long-Term Economic Monitoring Program

A cooperative project administered by the Pinelands Commission and funded by the National Park Service, the Pinelands Long-Term Economic Monitoring Program monitors, collects, and analyzes data to gauge the economic health of the Pinelands region over time. In 2004, the program tracked 19 core variables and four supplemental variables. As part of the annual report, the Municipal Fact Book was upgraded to include data by county in addition to the data already presented by municipality.

Data collected in 2004 reveals some key findings about the Pinelands economy:

- Supplemental population estimate data demonstrates that the Pinelands municipalities grew more quickly than non-Pinelands municipalities between 2000 and 2002 (Pinelands +5%, non-Pinelands +2%);
- The inflation-adjusted median sales price of Pinelands homes rose 14% in 2003. This is the largest one-year gain in this category since monitoring began in 1989. In that time period, the Pinelands share of statewide real estate transactions has risen from 8.2% to 10.1%;
- Cranberry prices continued their impressive recovery, posting a real gain of 37% from 2001-2002. This marks the third straight year the industry posted a double-digit percentage increase in prices;
- The average inflation-adjusted residential property tax bill in the Pinelands is now \$2,000 lower than the state average;
- Driven by an increase in the sales price of homes and an increase in property values, equalized property valuation increased 14% in Pinelands municipalities in 2003. In comparison, the non-Pinelands increased 12.4% and the state as a whole increased 11.2% over the same time period;
- Average effective tax rates for Pinelands municipalities decreased for the second straight year in 2003. The average effective tax rate in the Pinelands is now \$2.30 per \$100 of assessed valuation (in the non-Pinelands: \$2.54 and in the state as a whole: \$2.27)

Work continued on special studies in 2004. A first draft of the Municipal Finance Study was completed and is under review. This study is expected to be completed in 2005. All of the data has now been collected for the Vacant Land Analysis study and a statistical analysis is underway that will lead to a preliminary report by the end of 2005. In August, the Commission published the Pinelands Population Reference Guide as a supplement to the regular Annual Report, both of which are available on the Commission's web site or on CD-ROM by request.

Electric Transmission Right-of-Way Management Plan

As part of a 2004 agreement to authorize the upgrade of electrical transmission lines through eastern portions of the Pinelands (see page 28), the State Board of Public Utilities (BPU) agreed to work with the Pinelands Commission to develop a ecologically based management plan

for utility rights-of-way (ROWs). Management of electric ROWs has always posed a challenge to maintain safety and protect natural resources, particularly rare plants and animals. In early 2005, the Pinelands Commission will convene a workgroup of government and industry representatives to develop a “scope of work” to guide the project. The team will also seek input from environmental and other non-governmental organizations. The goal of the plan will be to maintain early-successional habitats along all ROWs within the Pinelands, while ensuring transmission safety and reliability.

Oyster Creek Re-Zoning

In late 2004, the Pinelands Commission proposed a significant change to the Pinelands Comprehensive Management Plan (CMP) Land Capability Map. The change calls for re-designating 4,100 acres of Lacey and Ocean Townships in Ocean County from Pinelands Rural Development Area to the more protective Pinelands Forest Area. The change was prompted by a report issued by the Pinelands Commission Science Office in March 2004. The report showed that the Oyster Creek and Waretown Creek watersheds display the essential ecological character of the Pinelands. Upon adoption of the CMP in 1980, more than half of the watershed was designated as Rural Development Area due largely to the presence of the Southern Ocean County Landfill and its anticipated impacts on water quality. Since that time, significant adverse impacts from the landfill have not occurred.

A Pinelands Commission analysis determined the proposed amendment will result in less land disturbance, nonpoint source pollution and fragmentation of the Oyster Creek landscape. Under the proposal, the maximum permitted housing density in the area would change from one unit per 3.2 acres of vacant upland to one unit per 15.8 acres. The theoretical maximum zoning capacity, based on gross vacant acres, will decrease from approximately 374 homes to about 184 homes. However, after Commission planners factored in various environmental constraints, such as wetlands and the lack of accessibility of much of the area to public roads, the effective zoning capacity decreases from approximately 204 homes to about 92 homes. Following a public comment period, the Commission will decide whether to approve the change in early 2005.

Pinelands National Reserve Map Amendment

The Commission has proposed amending the Land Capability Map by revising Pinelands management area boundaries in a portion of Manchester Township, Ocean County, which is located outside the Commission-regulated Pinelands Area but within the federally-designated Pinelands National Reserve. The Commission serves in an advisory capacity to the NJDEP in this area as it administers the Coastal Areas Facility Review Act.

The map revisions were proposed in recognition of a settlement agreement between the Department of Environmental Protection, Hovsons, Inc. and the Commission regarding development of the so-called Heritage Minerals property (see page 25). In support of the agreement, the Commission proposed amending the Land Capability Map so as to re-designate the proposed 995-acre development area as a growth area and the entirety of the open space preservation area in a Pinelands Forest Area. These revised management area boundaries appropriately reflect the permitted future use of lands authorized under the settlement agreement and should serve to prevent future conflicts from arising between a Pinelands management area and a State planning area.

PERMANENT LAND PROTECTION

Farmland Preservation

Working in cooperation with the Pinelands Commission, the State Agricultural Development Committee (SADC) administers a special Pinelands Direct Easement Purchase Program, which permanently protects farmland within those Pinelands Management Areas that serve as sending areas for Pinelands Development Credits (PDCs).

During 2004, under the Pinelands Direct Easement Purchase Program, development easements were acquired on 13 farms totaling nearly 1,200 acres. In June, the program closed on the nearly 600-acre Joseph J. White Cranberry Farm. The farm straddles Pemberton Township, Burlington County and Manchester Township, Ocean County. Dating back to 1857, the White family pioneered berry agriculture in the Pinelands. Elizabeth White, eldest daughter of the farm's founder, is credited with helping to develop the first cultivated blueberry crops there in 1916.

Through 2004, 34 farms totaling 3,070 acres have been preserved under the Pinelands Direct easement Purchase Program. In addition, 132.5 Pinelands Development Credits associated with these farms have been permanently retired. This has reduced potential development in Pinelands Regional Growth Area communities – areas where developers can redeem credits to increase housing densities – by some 530 housing units. The Pinelands Commission has provided \$2.1 million to help purchase PDCs on 22 farms.

Cape May County Municipal Utilities Authority Acquisition Fund

The Cape May County Municipal Utilities Authority (CMCMUA) fund was established under an agreement between the Pinelands Commission and the CMCMU whereby the CMCMUA pledged \$2.25 million to fund acquisitions throughout the Pinelands National Reserve. In 1999, the Pinelands Commission entered into an agreement with The Nature Conservancy (TNC) of New Jersey to jointly administer the program, with TNC matching acquisition costs dollar-for-dollar.

During 2004, the Pinelands Commission reimbursed TNC \$208,634 to help fund the acquisition of 292 acres. Acquisitions include 160 acres in the Oswego River Basin of Barnegat Township, 35 acres in the Great Cedar Swamp of Upper Township and 97 acres in the East Plains Fireshed of Bass River Township. This brings the total amount of land acquired under the CMCMUA Fund to 1,177 acres in five counties.

Pinelands Limited Practical Use Program

The Limited Practical Use (LPU) Program offers owners of small properties in the Pinelands (less than 50 acres), whose application for a Waiver of Strict Compliance (a variance from normal Pinelands zoning or environmental standards) has been denied by the Commission, the opportunity to sell their land to the State of New Jersey. In 2004, 17 land parcels, totaling 65 acres, were declared eligible for this acquisition program by the Commission, bringing the total number of parcels declared eligible since the inception of the program in 1995 to 444, totaling 1,517 acres.

In 2004, the NJDEP Green Acres program purchased 13 LPU-approved properties totaling 18 acres at a cost of \$43,500. To date, more than \$1.5 million has been spent to buy and permanently protect 370 of these parcels totaling 1,053 acres, using a combination of Green Acres funds and federal reimbursements.

Pinelands Development Credit Program

The Pinelands Development Credit program is a regional transfer-of-development-rights program that preserves important agricultural and ecological land. Pinelands Development Credits (PDCs) are allocated to landowners in the Preservation, Agricultural and Special Agricultural Production Areas (known as sending areas). These credits can then be purchased by property owners and developers interested in developing land in Regional Growth Areas (known as receiving areas) and used to increase the densities at which they can build. Once credits are "severed" from a sending area property, the property is permanently protected by a conservation deed restriction and the credits on the property can then be sold. Credits are bought and sold in one-quarter-credit units called "rights." During 2004, 129 rights were severed, protecting 1,374 acres. This brings the total land area protected through the severance of PDCs since 1982 to 39,348 acres.

NJDEP Green Acres Pinelands Acquisition Program

The Pinelands Commission continued to work cooperatively in 2004 with the NJDEP Green Acres Program to identify and permanently protect sites of important ecological value in the Pinelands. Green Acres oversees an ambitious land protection program in the Pinelands that includes acquiring land under the Pinelands Limited Practical Use Program and the federally funded Section 502 Pinelands land acquisition program.

During 2004, Green Acres acquired 1,577 acres of new State land throughout the Pinelands at a cost of nearly \$2.9 million. In addition to the State land acquisition program, Green Acres assisted county and local governments and non-profit organizations with the acquisition of 1,054 Pinelands acres at a cost of about \$2.4 million.

Pinelands License Plates

In 1998, Pinelands specialty license plates became available to New Jersey motorists who want to demonstrate their support for the Pinelands while helping to protect open space in the region. After reimbursement to the Motor Vehicle Commission for expenses associated with the plates, proceeds from application and renewal fees are deposited in the Pinelands Preservation Fund for acquisition of ecologically sensitive land in the Pinelands. The fund is managed by the NJ Department of the Treasury, with land acquisitions administered by the NJDEP Green Acres Program.

During Fiscal Year 2004 (July 1, 2003 to June 30, 2004), 673 new sets of Pinelands license plates were issued and 3,937 sets were renewed. Receipts for fiscal year totaled \$68,638 and the total fund balance at the close of Fiscal 2004 stood at \$360,123.

NJCF Franklin Parker Preserve

Although it isn't a Pinelands Commission initiative, one of the great Pinelands success stories of 2004 was the September dedication of the 9,400-acre Franklin Parker Preserve by the non-profit New Jersey Conservation Foundation (NJCF). The NJCF acquired the former cranberry farm from A.R. DeMarco Enterprises for \$12 million. The property is a Pinelands treasure trove, containing 1,500 acres of reservoirs, 600 acres of Atlantic White Cedar swamps, 14 streams and numerous rare plant and animal communities.

The preserve was named after Franklin Parker, who served as the first Chairman of the Pinelands Commission from 1979 to 1988. Parker is one of New Jersey's foremost leaders in natural resource protection and serves on the Pinelands Preservation Alliance's Board of Trustees, among other civic activities.

The September 24th dedication ceremony included remarks by Pinelands Chairman James Florio, who authored the federal legislation creating the Pinelands National Reserve in the late 1970s and Pinelands Commissioner Candace Ashmun, who has served on the Commission since its inception in 1979.

SCIENCE & RESEARCH ACTIVITIES

Kirkwood-Cohansey Study

2004 marked the first year of what is likely the most extensive research project ever undertaken by the Pinelands Commission. The Commission is leading a major study to gain better understanding of the relationship between the 18-trillion-gallon Kirkwood-Cohansey Aquifer and the unique Pinelands environment that it supports. Legislation passed in 2001 appropriated \$5.5 million from the State Water Supply Fund to the Commission to determine how the current and future water-supply needs within the Pinelands area can be met while protecting the Kirkwood-Cohansey system and avoiding adverse ecological impacts in the Pinelands. The study is being implemented in cooperation with the NJDEP, Rutgers University, the United States Fish and Wildlife Service (USFWS) and the United States Geological Survey (USGS).

Scientists from the cooperating agencies are conducting a series of component studies that characterize the relationships between key hydrologic and ecological attributes. Among other indicators, they are looking at stream flows, wetland water levels, wetland forest communities, soils, evapotranspiration, intermittent pond vegetation, fish, frogs, macro invertebrates and swamp pink, a federally endangered plant species. The study addresses two major research questions. First, what are the probable hydrologic effects of groundwater diversions from the Kirkwood-Cohansey Aquifer on stream flows and wetland water levels? Second, what are the probable ecological effects of these changes on aquatic and wetland communities? Models will then be developed to predict the ecological effects of different water-diversion scenarios within any given geographic location.

In 2004, inter-agency agreements were executed and the Commission and its cooperating partners began implementing work plans that were developed in 2003. By the close of 2004, significant progress had been made in field work for all of the components of the study and the Kirkwood-Cohansey research project was in full swing. The study is expected to take approximately five years to complete.

Timber Rattlesnake Study

In 2004, the Pinelands Commission concluded an intensive three-year study of Eastern Timber Rattlesnakes in the Pinelands with the release of its final report on the project. In late 2000, the Commission reached a settlement agreement with a real estate development firm over litigation involving construction of an Evesham Township housing development. Under terms of the agreement, the developer funded a two-part study. The NJDEP conducted a Pinelands-wide study, while the Pinelands Commission conducted research on the behavior of rattlesnakes in the vicinity of the Evesham housing development.

Nine snakes were radio-tracked by the Pinelands Commission during the study. The purpose of the Commission's study component was to assess the movements of snakes relative to the constructed portion of a development and to evaluate the effectiveness of fences and culverts intended to direct snakes away from the developed areas. Field work began in early 2001 and concluded in late 2003. Progress reports describing the study methodology and results of the first and second years of snake monitoring were released in 2002 and 2003.

The final report concluded that the rattlesnakes, particularly males, have far-reaching activity ranges. One snake had a range of nearly 2.8 square miles. However, core activity areas for several snakes, including a rookery used by gravid (pregnant) snakes, were located in areas that may be developed in the future. It is also apparent that the fences and culverts have met with very limited success in redirecting snakes away from developed areas. Fences did not prevent any of the radio-tracked snakes from entering developed portions of the subdivision. Although only in use during the last year of the study, there was greater success with the culverts beneath roadways. Two snakes used the culverts to travel to forested lands east of the development.

The report also documents the death of two of the monitored snakes. One was discovered dead and mutilated during the study period, while another was apparently killed by a motor vehicle shortly after the study concluded. On the positive side, two of the snakes gave birth to at least twelve neonates during the study. Researchers lost track of another gravid female before giving birth and yet another female rattlesnake was determined to be gravid when transmitters were removed at the conclusion of the study.

Mullica River & Rancocas Creek Basin Studies

Two recent Pinelands Commission research studies continued to benefit the agency's science and planning efforts in 2004. Data presented in the Mullica River Basin report (2001) and the Rancocas Creek Basin report (2003) clearly demonstrated a relationship between the health of aquatic and wetland resources and land-use related watershed disturbances. In both studies, surface water quality and biological communities found in forested stream basins contrasted with those attributes found in basins with a higher percentage of altered land, including development and agriculture. Acid waters and typical Pinelands biological communities characterized forest-dominated stream basins. Elevated pH and specific conductance and non-native plant and animal species were associated with disturbed stream basins.

The results of the Mullica River study have provided a sound scientific foundation for the Commission's watershed planning efforts. In 2004, the Commission planning staff used the data to characterize the current and future condition of water resources in the basin. The results of the Mullica River Basin study also established the protocols for evaluating the status of other Pinelands streams.

Data from both the Mullica River and Rancocas Basin studies were invaluable in revising the NJDEP's Integrated List of Water bodies. The list rates streams and lakes throughout the state. Commission staff ranked Mullica River and Rancocas Creek water bodies based on the composition of biological communities, and the NJDEP used these ranks to classify Pinelands streams.

Great Egg Harbor River Watershed Management Area Study

During 2004, significant progress was made toward the completion of the third major watershed assessment, this one in the Great Egg Harbor River Basin. This watershed study also includes the Tuckahoe River, Absecon Creek and Patcong Creek. Water-quality sampling at 61 sites in the Great Egg Harbor River Watershed was completed in 2003. During 2002, fish were surveyed at 33 stream sites and 11 stream impoundments, frog-vocalization surveys were completed at 44 stream impoundments, and stream vegetation was sampled at 40 stream sites. In 2004, fish were sampled a second time at several sites and data analysis was completed. A final report is being prepared and will be released in 2005.

Mullica River & Great Egg Harbor River Stream-Discharge Monitoring

The Commission and the United States Geological Survey (USGS) continued to implement two cooperative stream-gaging programs in 2004. Funded by the Camden County Municipal Utilities Authority (CCMUA), the first project is designed to determine whether wastewater transfers from the lower Camden County area are affecting stream flows in portions of the Mullica River basin. An initial trend analysis of streams in the study area revealed no changes in streamflow during the period 1991-1998. After Commission staff completed a second trend analysis for the period April 1991 through September 2002, decreases in streamflows were detected within the study area and the changes appeared to coincide with an increase in wastewater flows to the Delaware River. However, for most of the study sites that showed a material decrease in flow, the annual percentage decreases estimated through the analysis far exceeded the amount of water withdrawn. In 2004, the agreement between the Pinelands Commission and the CCMUA was amended to continue the stream-flow monitoring program through March 2008.

The Commission and the USGS are conducting a similar stream-gaging project at five stream stations in the Upper Great Egg Harbor River basin in cooperation with the Monroe Township Utilities Authority. In 2004, staff completed an analysis of stream-flow trends in this study area for the period of 1991-2003. The results will be released in 2005.

Toms River Basin Study

Following data collection in the Toms River and other Barnegat Bay drainage systems, the Commission science office began its analysis in preparation of issuing a report, likely in 2005. Monthly pH and specific conductance measurements were completed at 65 stream stations. Fish were surveyed at 42 stream sites and 17 stream impoundments, frog-vocalization surveys were completed at 46 stream impoundments, and stream vegetation was sampled at 49 stream sites.

Cranberry Agriculture and Wetlands

In 2000, the Commission initiated a USEPA-funded study of the potential effect of past and present cranberry agriculture on selected landscape features and aquatic communities in the Mullica River and Rancocas Creek basins. From 2001 to 2002, water-quality sampling, stream-habitat characterizations and fish, macro invertebrate, and vegetation surveys were completed and diatoms (algae) were sampled at 17 streams on two occasions. In 2003, a second round of diatom sampling was conducted and streamflow monitoring was concluded. In 2004, an analysis of stream patterns was completed. In late 2004, draft reports were submitted to USEPA

describing the preliminary results of the macro invertebrate, diatom and stream and landscape pattern studies.

Littoral Communities

Another USEPA-funded study, begun in 2001, is examining the ecological integrity of Pinelands wetlands. Specifically, the Commission is looking at the effect of watershed disturbance on the littoral, or near shore, communities of stream impoundments. To date, growing season water quality has been measured at 47 sites. Fish, vegetation, and selected environmental features were surveyed at 20 impoundments. The results of this study of littoral biota will allow the existing baseline inventory of Pinelands vegetation, fish, and anuran communities to be expanded to include impoundments and help to refine previously developed land-use/ecological relationship models.

Water-level Monitoring: Forested Wetlands and Coastal Plain Ponds

Monitoring of growing-season water levels at five pitch pine lowland reference sites continued for the 16th year. With the exception of one year, these sites have been monitored continuously since 1987. Growing-season water levels were monitored at 14 coastal plain ponds for the ninth consecutive year (1996-2004). The results of these monitoring programs have been applied directly toward development of the Kirkwood-Cohansey Project Work Plan (see page 18).

Coastal Plain Streams & Ponds

The Pinelands Commission participated in a study, concluded in 2004, of coastal plain ponds conducted by the NJDEP Office of Natural Lands Management. The study, which was funded by the USEPA, builds upon the Commission's ongoing coastal plain ponds investigations and will contribute to the Commission's long-term environmental-monitoring program and the Kirkwood-Cohansey Project. The NJDEP is preparing a report for submission to the ISAPI in 2005.

A scientific paper, titled "Using multiple indicators to evaluate the ecological integrity of coastal plain streams," was submitted by Commission staff in 2004 to the journal *Environmental Monitoring* for review and publication. The paper demonstrates the use of multiple indicators to characterize the ecological integrity of Pinelands streams in relation to human-induced watershed alterations. The individual indicators include pH, specific conductance, stream vegetation, as well as stream-fish, impoundment-fish and anuran assemblages.

Remotely Sensed Indices of Land-use Intensity

In 2004, a final report was issued on the results of a study conducted by scientists from the Pinelands Commission and Rutgers University's Center for Remote Sensing and Spatial Analysis. The objective of the study, titled "Remotely Sensed Indices of Land-Use Intensity for Watershed-level Monitoring," was to monitor land use and habitat changes in the Mullica River basin and to relate changes in land use to surface water quality. The water-quality component of the project was built upon the results of the Commission's long-term environmental-monitoring efforts in the Mullica River basin. Funding for the study was provided by the National Oceanic

and Atmospheric Agency's Cooperative Institute for Coastal and Estuarine Environmental Technology Program.

Science Advisory Committee

The Pinelands Science Advisory Committee, established in 2000, advises the Pinelands Commission and its Science Office on the role of science in achieving the goals of the Comprehensive Management Plan. The Committee is Chaired by Dr. Richard Lathrop of Rutgers University. The Science Advisory Committee met in March 2004 and discussed studies regarding the Kirkwood-Cohansey aquifer, timber rattlesnakes, cranberry agriculture and wetlands, the Great Egg Harbor River Watershed Area and the Toms River Basin.

FACILITIES & OPERATIONS

Pinelands Conservation Fund

As part of a 2004 agreement with the State Board of Public Utilities to authorize the upgrade and construction of electric transmission lines in the Pinelands (see page 28), the utility company constructing the lines agreed to provide \$13 million to establish the Pinelands Conservation Fund. As specified in the agreement, the Fund shall be used to further the Pinelands protection program and ensure a greater level of protection of Pinelands resources.

In late 2004, the Pinelands Commission developed a set of preliminary recommendations to spark discussion on how to administer the Fund. These included proposals in three separate areas: land acquisition; conservation planning/research; and smart growth/community planning initiatives. At year's end, the Commission circulated the preliminary recommendations to dozens of governmental and non-governmental organizations for comment. In early 2005, the Commission will review all written and verbal comments and direct Commission staff to prepare a formal plan for using the Fund.

Fiscal & Budget

The Pinelands Commission's operating budget for fiscal year 2005 is \$4.4 million. Of this, \$3.4 million, or 77 percent, is budgeted for personnel expenses. The 2005 fiscal year budget anticipates revenues of \$4.22 million and projects expenditures of \$4.4 million, with the difference of \$180,000 to be financed from the Commission's reserves. Revenue sources include \$370,950 in federal grants, a \$2.95 million State appropriation, \$133,350 in State grants and other State funding, and \$600,000 in application fees.

In addition to the operating budget, the fiscal year 2005 budget for the Pinelands Development Credit Special Purchase Program is \$1.9 million, and \$700,000 is budgeted for the Commission's commitment to the special land acquisition program funded through the Cape May County Municipal Utilities Authority. The 2005 budget for the Kirkwood-Cohansey Aquifer Study, funded through legislation passed in 2001, is \$1.93 million. The balance of the Kathleen M. Lynch-Van de Sande Fund for the reforestation of the New Jersey Pinelands totaled \$13,653 at the end of 2004. The fund is maintained by private contributions.

Pinelands Application Fees

On April 5th, 2004, the Pinelands Commission implemented the first application fees since the enactment of the Pinelands protection program. The fees were established to partially underwrite the direct personnel costs associated with reviewing development applications.

Fees are required only for certain development activities. The majority of applications typically received by the Commission will not require application fees. Fees will not be charged for:

- applications for residential developments consisting of only one dwelling unit;
- requests for Letters of Interpretation for the allocation of Pinelands Development Credits;
- development applications from public agencies; and
- Waivers of Strict Compliance.

During 2004, with the program in effect for less than nine months, application fee revenues totaled \$474,653.

International GIS Technology Award

In 2004, the Pinelands Commission was honored for its groundbreaking efforts to merge all of the agency's permitting, zoning, violation and geographic data into one central database. The Environmental Systems Research Institute (ESRI), likely the world's foremost computer mapping software development firm, announced at its International User Conference in San Diego, California that the Commission was selected to receive a Special Achievement in GIS Award.

The Pinelands Commission Information System (PCIS) is being developed cooperatively by the Commission's Geographic Information Systems Office and the Management Information Systems Office with the help of Applied GIS, a geographic information system development firm located in Schenectady, New York. At present, the PCIS is in the final stages of development. The new system will integrate four existing, stand-alone systems:

- the development review database, which tracks and records all aspects of the land development application and approval process;
- the zoning database, which manages all municipal land use designations;
- the violations database, which tracks violations of Pinelands protection and development standards; and
- the Geographic Information System database, which is used to create maps, conduct land use analyses and manage spatial data.

Annually, the Commission reviews thousands of development applications and scores of zoning and land-use ordinances for consistency with Pinelands environmental standards. Traditionally, querying and displaying data across four separate systems was extremely difficult and inefficient, requiring hours of data export and manipulation. As a result, many analyses had significant limitations and often remained very basic in nature. These limitations led the Commission to develop the PCIS as a comprehensive solution for its data connectivity problem. The PCIS will enable Commission staff conducting development application reviews to display and visually analyze zoning and environmental information as well as the development history of subject properties and surrounding properties. This will dramatically increase efficiency and accuracy of application reviews.

The ESRI Special Achievement in GIS Award is presented to organizations that embrace GIS technology and set new precedents in GIS application to better serve the world.

Fenwick Manor Restoration

In 2004, construction work began on the long-awaited restoration of Fenwick Manor, the Pinelands Commission's historic office complex. Dating back to the 1820s, Fenwick Manor is a 4.5-acre remnant of a farmstead with special historical significance to the Pinelands. The property contains a main building, a carriage house, a barn and an outbuilding, in addition to the new Richard J Sullivan Center. The property and the historic buildings, included on both the State and National Registers of Historic Places, were in an advanced state of deterioration and needed major improvements, many of which are essential to the continued use and occupation of the buildings.

Prior to beginning work, staff were relocated from all buildings to be renovated to temporary work stations in the Richard J. Sullivan Center. The total amount authorized for the project by the State Legislature is \$1.8 million.

Following a competitive bidding process, the New Jersey Building Authority, which is managing the project, awarded a construction contract for nearly \$1.7 million to Masonry Preservation Group, Inc. in July 2004. Soon thereafter, demolition and construction activities began, and by the close of 2004, much of the carpentry, electrical and plumbing work was completed. Roofing, furnace installation and window restoration work was underway. The Fenwick Manor restoration project is expected to be completed by the end of 2005.

REGULATORY ACTIVITIES

Permitting

Commission staff reviews municipal and county permitting decisions and development approvals to determine potential impacts on Pinelands natural resources. In cases where the local approval may be inconsistent with Pinelands standards, the Commission's Executive Director has the authority to refer the approval to the Commission, which may modify or overturn it. During 2004, the Project Review office received 1,372 new applications and had active files on 3,090 applications. This compares with 1,239 applications received and 3,068 active files in 2003. In 2004, Atlantic County led in new applications with 486 received, followed by: Burlington County (369); Ocean County (259); Camden County (119); Gloucester County (85), Cape May County (34), and Cumberland County (20).

Of the 1,956 local permits that were reviewed by the Pinelands Commission in 2004, 1,313 (67%) were processed through the faxed permit procedure. Under the faxed permit procedure, a local code or health official can telefax a construction or septic application to the Commission prior to issuing the permit. The file is then reviewed and the municipality or county is notified within two days as to whether the issuance of a permit will raise any regulatory issues with the Commission. The permit can then be issued or the applicant advised of a problem to be addressed or corrected. This process dramatically reduces the 15-day review period provided under the Pinelands Protection Act.

Commission staff work with other public agencies to authorize certain activities that are important to the public, with proper safeguards that facilitate a streamlined process while ensuring that there will be no adverse impacts to the environment. In a continuing effort to improve its

coordination with Pinelands Area municipalities, the Pinelands Commission enters into Memoranda of Agreement with municipalities to streamline the Commission's application process for certain minor development activities. These activities generally involve development that disturbs less than 5,000 square feet. Another streamlined procedure is the Local Review Officer Program, which allows participating municipalities to process applications for single-family dwellings on conforming lots with no substantial issues. Of the 769 private and public applications for development that were completed with the Commission in 2004, 221, or 29 percent, were through the MOA or LRO streamlined procedures.

Atlantic City International Airport Plan

In early 2004, the Pinelands Commission entered into a Memorandum of Agreement (MOA) with the South Jersey Transportation Authority (SJTA) to facilitate six short-term development projects at the Atlantic City International Airport. The projects, part of a broader management plan for the airport, include new and expanded terminal area facilities, runway upgrades, development of new holding aprons and construction of a hotel and conference center.

The agreement sets forth 30 environmental commitments on the part of the SJTA to safeguard natural resources at the airport and provide enhancements to wildlife habitat.

Measures include the creation of a 290-acre grassland conservation area and management plan to provide habitat for neo-tropical grassland bird species. In addition, the SJTA will designate over 400 acres of forest preservation area for long-term protection of a forested wetlands ecosystem along the North Branch of Absecon Creek. Other commitments include various management practices, activities and restrictions aimed at maintaining quality habitat and minimizing disturbance of key plant and animal species. The SJTA will also perform surveys to monitor the success of the measures and ensure the proper balances are maintained.

The Atlantic City International Airport covers approximately 2,100 acres in Egg Harbor, Galloway and Hamilton Townships in Atlantic County. The property is home to a number of threatened and endangered animal species, including the grasshopper sparrow, upland sandpiper, barred owl, Coopers hawk and Pine Barrens treefrog. Some of the species are attracted to the property by man-made grassland habitat that surrounds the airport runways, approaches, and taxiways. Absent this agreement, SJTA's development options would have been limited, but the long-term protection of 700 acres of important natural resource lands would not have been ensured.

Heritage Minerals Settlement

The Pinelands Commission entered into a three-party settlement agreement in 2004 that resolves a federal lawsuit over plans to develop nearly 7,200 acres in Ocean County. The other parties to the agreement are the developer, Hovsons, Inc., Homeland Corporation, and the NJDEP.

A lawsuit was filed by Hovsons in the US District Court of New Jersey in 2000 following the developer's unsuccessful attempts over an 11-year period to develop the 7,175-acre Heritage Minerals property located in Manchester Township, Berkeley Township and Lakehurst Borough.

Under the development agreement, the entire 3,088-acre Pinelands Area portion of the property will be permanently protected. Some 3,025 acres in the Pinelands National Reserve, the area where development activities are regulated by the NJDEP under the Coastal Area Facility Review Act (CAFRA), will also be preserved. In addition, the developer has agreed to preserve

362 off-site Pinelands Area acres, comprising the last remaining unprotected parcel in the ecologically critical Berkeley Triangle in Berkeley Township.

The conceptual development plan allows clustered development of up to 2,450 housing units on 995 acres, which are part of a previously disturbed mining area. Commercial space and community recreational facilities may also be constructed, but may not include a golf course. Buffer Areas within the development area, including lakeside buffers, will also be permanently protected. The plan sets additional conditions regarding wastewater and stormwater management, impervious coverage and remediation of the mining site that contains elevated levels of naturally occurring radionuclides.

In addition, special habitat enhancement and conservation measures are required to protect three threatened and endangered species: Grasshopper Sparrow; Sickle-leaved Golden Aster; and Northern Pine Snake. As a result of comments received at a public hearing in December 2003, the terms of the settlement require that market rate housing units shall be age-restricted to minimize the impact on local schools. The development is subject to municipal approval, and detailed plans will be reviewed to ensure consistency with CAFRA and Pinelands development and environmental standards.

Ocean Acres Settlement and Conservation Plan

In 2004, the Pinelands Commission resolved a complex regulatory challenge regarding a Barnegat Township, Ocean County subdivision. The 2,015 lots in the Barnegat portion of Ocean Acres project were sub-divided prior to the Pinelands protection program and is in a Pinelands Regional Growth Area, a zone designated for moderate-density residential development. When a real estate developer recently proposed to undertake the first major development activities within the sub-division, the Pinelands Commission became aware that the subdivision is home to threatened northern pine snakes and a number of other rare plant and animal species.

At the request of the Pinelands Commission, the developer agreed to conduct an extensive survey to determine the extent of the pine snake habitat. Five snakes were trapped and radio-tracked over several months to determine their habitat and ranges. Litigation ensued and, following a settlement agreement, the Commission developed an innovative plan to permit development in appropriate locations while protecting important habitat.

This pine snake data was combined with information on other natural resources, including the location of other rare species and wetlands, to delineate a conservation area within Ocean Acres that will be off-limits to future development. The Commission then proposed and certified an amendment to the Barnegat Township Land Use ordinance to re-zone portions of Ocean Acres for conservation.

The plan permanently protects about 350 acres of critical habitat in the roughly 810-acre subdivision through a combination of conservation and zoning measures. The zoning plan provides some relief to people whose lots are in the critical habitat areas and cannot be developed by setting options that allow owners of non-conforming lots in the development area to protect land in the conservation area in exchange for building approvals. This also provides dispensation for property owners who will not be able to build because of the presence of wetlands and threatened and endangered plants and animals. Under the plan, approximately 730 vacant building lots in the subdivision will be located within the protected conservation area.

Sanctuary Settlement

In late 2004, the Pinelands Commission authorized a settlement agreement to resolve litigation between the Pinelands Commission and an owner of property in the Sanctuary subdivision in Evesham Township, Burlington County. The developer sued the Pinelands Commission in the US District Court of New Jersey in December 2003 after the Commission advised Evesham Township that it would not allow certain subdivision and construction approvals to take effect until measures are implemented to protect threatened pine snakes discovered in the development.

Development at the Sanctuary had been largely delayed for more than two years due to the presence of northern pine snakes, including the discovery of a pine snake nest within the subdivision in June 2002. The Sanctuary was the subject of a previous court settlement in 2000 over endangered eastern timber rattlesnakes that also inhabit areas within and around the subdivision.

The proposed agreement will allow the completion of the unfinished portion of Georgia O'Keefe Way, a road that will connect two main areas of development that are separated by a large deed restricted conservation area. The agreement directs the road to be built over 12-foot-wide box-type culverts that will allow pine snakes and other animals to pass beneath the road to minimize mortalities by motor vehicles.

Under this and a previous agreement reached with another Sanctuary developer in April 2004, two building lots where pine snake are known to nest will be permanently protected through a deed restriction. These lots are contiguous to a 350-acre conservation area that serves as a wildlife corridor to areas of protected forests to the east of the subdivision. The developer also agreed to contribute \$75,000 to the Pinelands Commission for natural resource monitoring and planning activities.

Presidential Lakes Resolution

The Pinelands Commission also resolved a complicated issue regarding the construction of additional homes in the Presidential Lakes subdivision, a 780-home development in Pemberton Township. Almost 90 percent of the homes in Presidential Lakes were built between 1940 and 1979, prior to the implementation of the Pinelands protection program. In 1982, following implementation of the Pinelands CMP, a developer received a waiver of strict compliance to build over 103 additional homes, approximately half of which were built before 1994. In the years that ensued, a dispute arose over whether the Commission's waiver had expired and whether the Township could issue construction permits. Further, the Township entered into litigation with a number of builders over the completion of roads and site improvements.

In 1996, the Pinelands Commission entered into discussions with Pemberton Township and a developer regarding plans to construct 45 homes. At that time, a resolution was not reached, but renewed discussions began in 2002. The Commission raised concerns about the environmental impacts, particularly on groundwater, and in April 2004, a resolution was reached that addressed the Commission's concerns. Under the approved development plan, 39 homes will be constructed as the final phase of the development, thereby completing Presidential Lakes. The homes will include Commission-approved advanced technology wastewater treatment systems (see page 12), and the developer has agreed to permanently deed restrict over 650 acres of adjacent land for conservation.

Connectiv Electric Transmission Lines

In 2004, the Pinelands Commission faced a complex challenge associated with balancing the need for critical electrical infrastructure and protecting the Pinelands. In August, following months of negotiations and planning, the Commission entered into a Memorandum of Agreement (MOA) with the NJ Board of Public Utilities (BPU) to permit the construction of an electrical transmission line improvement project between the Cedar Substation in Stafford Township, Ocean County and the Cardiff Substation in Egg Harbor Township, Atlantic County.

The proposal was not in strict accord with certain land-use and environmental standards of the Pinelands CMP. Specifically, 17.5 miles of the project is located in the Pinelands Preservation Area and Forest Area Districts, two highly protective Pinelands management zones. However, under terms of the MOA, 34 percent of that portion will be constructed within existing transmission line rights-of-way. The balance of the project in these areas, with one minor exception, is being constructed within the right-of-way of the Garden State Parkway. The agreement also addresses Pinelands wetlands standards and takes steps to minimize impacts at wetlands crossings. For example, the minor deviation from the Parkway right-of-way was designed to avoid disturbance of a significant wetlands system in the vicinity of Stafford Forge.

Because the route was not in accord with Pinelands requirements, the MOA was required to allow the project to proceed. In accordance with CMP requirements, the MOA provides measures that afford, at a minimum, an equivalent level of protection of Pinelands resources than would be provided through strict application of the CMP's standards.

The agreement sets forth environmental commitments that must be met, including a payment of \$13 million by the utility to further Pinelands protection efforts. The funding will be used by the Pinelands Commission for activities that are directly related to the preservation of Pinelands resources. Additionally, the BPU, the public utility and the Pinelands Commission will work cooperatively to develop a Comprehensive, Ecologically Based Right-of-Way Maintenance Plan for use in all electric transmission rights-of-way located within the Pinelands. The agreement also establishes 30 environmental conditions that must be met during construction of the Cedar-to-Cardiff line, including measures to protect wetlands, vegetation, threatened and endangered species, as well as historic and cultural resources.

A northern segment of this project, running from Lacey Township to Stafford, received Commission approval in April 2004. That application did not raise any significant Pinelands regulatory issues.

South Jersey Gas Pipeline

The Pinelands Commission issued a Certificate of Filing in 2004 to South Jersey Gas Company of Folsom for an application filed by the company to construct a seven-mile natural gas main through portions of Camden and Burlington Counties. The Certificate of Filing formally deemed the firm's development application as complete and authorized it to proceed with applications for local permits and any other necessary government agency approvals. The 12-inch diameter, high-pressure gas main will supplement gas pressure in the Medford area. The route begins at an existing gas main at Elwood Road and 5th Street in Waterford Township and extends through Evesham Township to a supply line located at the intersection of Hopewell and Taunton Roads in Medford Township.

An earlier application, filed by South Jersey Gas in 1998, proposed to construct the line through five Pinelands management areas, including the Preservation Area District, Agricultural Production Area and Special Agricultural Production Area – three areas where development is

greatly restricted to protect lands of significant ecological and agricultural value. The Commission denied that application in 2000. South Jersey Gas subsequently appealed the denial, and in 2002, an Administrative Law Judge upheld the Commission's decision.

The Commission approved a plan in 2004 that re-routed the gas main away from agricultural and preservation areas to ensure compliance with Pinelands land-use standards. All approved construction must occur either in the paved portions of roadways or in the disturbed and filled portions of roadway shoulders to avoid adverse impacts on wetlands and threatened and endangered species.

Southern Ocean Landfill Closure

2004 saw a major environmental milestone when the environmentally sound closure and capping of the Southern Ocean County Landfill in Ocean Township was completed. The landfill, which operated for decades, was ordered shut down by the NJDEP in 1988. Closure of the 50-acre landfill was led by Ocean County and was facilitated by a Memorandum of Agreement executed in 2000 between the NJDEP and the Pinelands Commission. The MOA was needed to address concerns regarding capping material that did not strictly meet Pinelands standards. However, the risk that the unclosed landfill posed to the area's water quality far outweighed the capping material issue. Following several years of work, the project was completed during the fall of 2004, greatly reducing the threat to the Pinelands environment. With hundreds of old landfills still not properly closed statewide, this is a significant victory for Ocean County, the Pinelands and the environment as a whole.

Forestry Applications

The Pinelands Commission jointly reviews most private forestry applications in the Pinelands Area in partnership with the NJDEP Forest Service under the auspices of the New Jersey Forest Stewardship Program. In 2004, the Pinelands Commission reviewed and approved 13 private forestry applications. In addition to private forestry applications, the Commission also reviews forestry applications that are submitted by public agencies. Four public forestry applications were received in 2004 and, at year's end, one was approved.

Wetlands Permits

The Pinelands Commission has also been delegated the authority to issue NJDEP Freshwater Wetlands General Permits in the Pinelands Area. In 2004, the Commission issued 10 such permits on behalf of the NJDEP.

Violations

The Pinelands Commission continues its efforts to provide assistance to municipalities in pursuing and resolving violations of the local land use ordinances and the Pinelands regulations. Reflective of those efforts, during 2004, Commission staff participated in site inspections with municipal officials, provided support and expert testimony in municipal court proceedings and pursued multiple violations of local land use ordinances and the CMP. Staff also worked closely with the State Attorney General's Office on a number of violations. Of the 88 violations reported

to the Commission in 2004, the largest categories of violations were illegal uses (41), vegetative clearing (16) and wetlands filling (16).

Southern Pine Beetle Agreement

Following an outbreak of Southern Pine Beetle infestations in 2002 and 2003, the Commission entered into an agreement with the NJDEP to implement a streamlined permitting procedure to facilitate a program to suppress a widespread infestation. Some 264 outbreaks of the harmful forest pest had impacted nearly 1,300 Pinelands acres. The MOA allowed the NJDEP Forest Service to cut, chip, burn or remove pine trees from eleven infested sites without securing individual development approval from the Pinelands Commission. The Forest Service subsequently advised the Commission that it was proceeding with suppression activities at nine of the sites and later applied to the Pinelands Commission for reforestation activities at eight of those.

A preliminary evaluation, released in early 2004, shows that suppression activities appear to have stopped or significantly slowed the spread of the Southern Pine Beetle. However, during 2004, the Forest Service began work on a more detailed evaluation to conclusively determine the effectiveness of the program. The Forest Service also conducted a Pinelands-wide aerial survey to determine the full extent of Southern Pine Beetle outbreaks in the Pinelands. The NJDEP Forest Service is expected to report the results of its work in 2005.

PUBLIC INFORMATION, PARTICIPATION & EDUCATION

Pinelands Educational Advisory Council

The Pinelands Educational Advisory Council (PEAC) is an advisory body to the Pinelands Commission, consisting of educational professionals. Led by Council Chair Walter B. Freas, Jr., the PEAC advises the Commission on ways to improve, expand and better coordinate Pinelands educational and interpretive programs. The Council met twice in 2004, assisting Commission staff in planning for future outreach programs and organizing the 15th annual Pinelands Short Course. Also in 2004, the PEAC reviewed potential candidates to fill several vacancies on the Council. The group plans to make recommendations for PEAC appointments to the Commission's Public and Governmental Programs Committee in early 2005.

Pinelands Short Course

In 2004, the Pinelands Commission formed a new partnership with Burlington County College and the Pinelands Institute for Natural and Environmental Studies to build upon the success of the annual Pinelands Short Course. The Pinelands Short Course is a day-long educational opportunity for the public at large that has been held on the first Saturday in March

each year since 1989. The 15th annual Short Course was held on Saturday, March 6, 2004 at Burlington County College in Pemberton Township.

Attended by over 300 people from throughout New Jersey and neighboring states, participants gained knowledge on many Pinelands topics from top experts in the field. The Pinelands Commission is a registered New Jersey Professional Development Provider and teachers who attend the course receive professional development certificates. A number of the attendees are teachers or involved with education and participated to gain knowledge and information to pass on to their students.



More than 300 people attended the 2004 Pinelands Short Course at Burlington County College.

Photo by Frances Rapa

Pinelands Municipal Council

The Pinelands Municipal Council, created under the Pinelands Protection Act of 1979, is comprised of mayors (or their designees) of the 53 municipalities in the Pinelands Area. The Council is empowered to review any changes to the Pinelands CMP, and advises the Pinelands Commission on many matters of interest. During 2004, the Council met six times and provided important guidance to the Commission on a number of key issues, including the Pinelands Excellence Program, Pinelands model stormwater ordinance, Pinelands scenic byway, and the Pinelands Housing Task Force.

In March 2004, the Council elected its executive committee for the year. Woodbine Mayor William Pikolycky was elected chairman; Buena Vista Mayor Chuck Chiarello, vice chairman; Edward McGlinchey, Winslow Township Zoning Officer was elected secretary; Bass River Township Mayor T. Richard Bethea, treasurer; and former Mullica Township Mayor Robert Hagaman was elected as member at large.

Each year, the Pinelands Commission and the Pinelands Municipal Council jointly sponsor an orientation session for newly elected and newly appointed local officials to familiarize them with the Pinelands environment and the Pinelands CMP. The 2004 session was held February 28 at Atlantic-Cape Community College in Mays Landing. It was attended by 45 local officials, including mayors, council/committee members, planning and zoning board members and members of municipal environmental commissions.

Redesigned Website

During 2004, the New Jersey Office of Information Technology (OIT), working in cooperation with the Pinelands Commission, nearly completed a re-design of the Pinelands Commission website. The Pinelands website and the website of the New Jersey Housing and Mortgage Finance Agency, will serve as pioneer projects using new website software developed

by OIT. The new site will expand upon existing content and functions and will help enhance the Commission's efforts to provide greater information about the Pinelands protection program to the public. At year's end, the graphic and architectural design of the website was completed and work began on creating and loading content onto the new site. The Commission plans to have the new website online by July 2005.

NJ Open Public Records Act

The Pinelands Commission continued to respond to requests for public records under the statutory requirements of the New Jersey Open Public Records Act (OPRA) and to ensure the agency's full compliance with the provisions of the law. During 2004, the Commission's Records Custodian received and processed 23 formal OPRA requests. However, the Commission processed many more information requests, including several legal subpoenas for Commission records, in the same manner as formal OPRA requests.

Of the 23 formal OPRA requests, 17 were made by legal, environmental consulting, development, engineering or other professional service firms. Only three OPRA requests were received by private citizens, two from non-profit organizations and one from a government agency.

Outreach & Education

In October, the Commission co-sponsored the New Jersey World Water Monitoring Day Celebration along with the NJDEP and the US Geological Survey. Staff from the three environmental agencies hosted about 150 school children at Batsto Village in Wharton State Forest. The students tested water from Batsto Lake for pH (a measure of acidity), dissolved oxygen, temperature and turbidity. The results were recorded and later entered into the World Water Monitoring Day database. The findings were also compared to other examples of water resources collected throughout the Pinelands.

In May, Commission staff helped plan and execute a traveling faculty seminar sponsored by Rutgers University. The Commission helped plan the Pinelands segment of the statewide multi-day educational bus tour, which included a stop at a cranberry farm. The tour was attended by nearly 40 University faculty. Commission staff also met with representatives of YMCA Camp Ockanickon to explore future opportunities to partner on Pinelands educational programs.

In October, Commission staff hosted a delegation of planners and university researchers from the Republic of Korea (South Korea). The group was on an eight-day tour of the US to gain insight into many land-use and planning issues that South Korea is now facing. In April, Commission staff delivered an educational presentation to a delegation of Rotarians from Brazil at Whitesbog Village. That group was hosted by the Pemberton Rotary Club.

The Commission routinely participates in public meetings and events to enhance the public awareness of the uniqueness and importance of Pinelands resources and to increase public understanding of the Pinelands protection policies and programs. In 2004, Commission staff had informational exhibits at the Fort Dix Family Funfest celebration, the Pinelands Jamboree in Waretown, Batsto Country Living Days fair, as well as the Pinelands Celebration held at Whitesbog by the Pinelands Preservation Alliance.

In November 2004, the Communications and Public Programs Office organized a public information session to inform residents of Evesham Township of the terms of a proposed settlement agreement in the Sanctuary development litigation matter. The meeting was attended

by over 50 local residents, Township officials, news reporters and members of the environmental community.

Pinelands Commission Chairman James Florio addressed many public assemblies during 2004, including delivering the keynote address at the Environmental Congress of the Association of New Jersey Environmental Commissions in October, where he discussed the importance of regional planning to promote smart growth and protect natural resources. Florio authored an article on Pinelands smart-growth planning which appeared in the April issue of New Jersey Municipalities magazine. In August 2004, Pinelands Commission Executive Director John Stokes gave a televised presentation to the Buena Vista Township Committee on various Pinelands topics. The update was broadcast on cable television to 10 Pinelands municipalities.

One of the most prevalent New Jersey environmental issues of 2004 was the legislative debate over the creation of a protection program for the New Jersey Highlands. The Pinelands Commission was active during much of the year providing information about the successes and challenges of the Pinelands program to legislators, news reporters and local officials from the Highlands region. In addition to providing information to support the policy decisions, the Commission also had to dispel misinformation that was being disseminated by some. Executive Director Stokes testified before a Senate Committee and Chairman Florio wrote op-ed columns to newspapers and appeared at press conferences.

The Commission's Communications and Public Programs Office continued to provide informational support to the media and general public. Staff handled 173 press inquiries from the print, broadcast and electronic media during 2004. They issued 20 press releases regarding activities and policy directions of the Pinelands Commission. They also published two issues of *The Pinelander*, the Commission's official newsletter, both of which were mailed to over 2,300 subscribers. The office responded to nearly 700 general public inquiries received by telephone, e-mail, postal mail and office visits.

Public Notification & Participation

In mid-2004, Commission staff conducted a detailed review of the agency's policies and procedures for informing the public of all Commission-sponsored meetings, hearings and other public events. The review recommended a few additional measures but concluded that the Commission's decision-making process is a very open and transparent and one that provides abundant opportunities for public participation. Many of the agency's established procedures go well beyond the requirements of the NJ Open Public Meetings Act and the notification requirements of the Pinelands Protection Act and CMP regulations.

Pinelands Interpretation & Tourism

In 2004, the Pinelands Commission continued to work closely with the National Park Service on the Pinelands Interpretation Program, located at the New Jersey Coastal Heritage Trail (NJCHT) Office in Cumberland County. In April, the NJCHT legislative authorization expired and, at the close of 2004, had not been re-authorized by the US Congress. During this period, the NJCHT staff and funds were temporarily re-assigned to the Pinelands Interpretive Program. The Commission and National Park Service worked to advance several Pinelands interpretive projects. These include the design of new Pinelands National Reserve highway signs, development of a wayside exhibit for the soon-to-be-restored historic Fenwick Manor (see page 24) and the update of the Pinelands interpretive kiosk displays that are featured at State Parks and Forests throughout the Pinelands.

In addition to planning for the Pinelands Scenic Byway (see page 13), Commission staff worked with a number of local governmental and non-profit organizations to help develop and promote interpretive and tourism opportunities in the Pinelands. The Commission participated in, and provided support to, a newly formed Pinelands Tourism Group in Burlington County as well as the newly established South Jersey Tourism Corporation. In June 2004, Pinelands Staff participated in a regional eco-tourism meeting and a conference on heritage- and ecological-based tourism sponsored by the Ocean County Cultural and Heritage Commission. At another conference in October, Commission staff discussed interpretation of Pinelands Revolutionary War sites in Ocean County. The Commission also provided input into a proposed Pinelands scenic driving tour under development by the Woodford Cedar Run Wildlife Refuge in Medford. A Pinelands Tourism Summit, co-sponsored by the Pinelands Commission, South Jersey Tourism Corporation, NJ Division of Travel and Tourism and Burlington County is planned for January 2005.