

New Jersey Pinelands Commission

COMPREHENSIVE MANAGEMENT PLAN



JANUARY 2002

ANNETTE M. BARBACCIA, EXECUTIVE DIRECTOR



State of New Jersey

THE PINELANDS COMMISSION

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James E. McGreevey

Governor

January 15, 2002

Jerrold L. Jacobs, Chair
New Jersey Pinelands Commission
P. O. Box 7
New Lisbon, NJ 08064

Re: *Third Progress Report on Plan Implementation*

Dear Chairman Jacobs:

It is my pleasure to present to you and all the members of the Pinelands Commission the third report prepared by the staff, on the activities, programs, projects, and initiatives undertaken in furtherance of the aims of the Pinelands Comprehensive Management Plan (CMP).

This report is a component of the third review of the Plan and is in fulfillment of a requirement of the CMP (N.J.A.C. 7:50-7.11), which calls for a comprehensive review of the Commission's regulations on a regular basis. The individual chapters in the report describe activities under way or completed over the past ten years that are intended "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" (Pinelands Commission Mission Statement, adopted March 13, 1998).

This report presents a baseline of data and a series of recommendations that can be useful as Commission members begin in earnest their comprehensive review of Plan implementation. This review will continue throughout 2002 and will seek the input of residents, elected officials, agencies, environmental organizations, businesses, developers, and other involved citizens. Consistent with the review approach discussed with the Commission, we will work with all interested parties to produce a critique of this review highlighting next steps and efforts by February 2003. I am confident the review process will lead to many actions, including Plan amendments, that will guide the Commission as it enters the third millennium and its third decade of protecting the Pinelands.

Sincerely,

Annette M. Barbaccia
Executive Director

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**COMPREHENSIVE MANAGEMENT PLAN
THE THIRD PROGRESS REPORT ON PLAN IMPLEMENTATION**

JANUARY 2002

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EXECUTIVE SUMMARY

The Third Progress Report on Plan Implementation is submitted to the Pinelands Commission by its Executive Director to officially launch the Commission's formal review of the Pinelands Comprehensive Management Plan (CMP). This report describes actions taken to further Pinelands protection goals over the past ten years (since the last progress report was issued) and presents the status of key programs since the CMP's inception in 1980. It should serve as an important reference as the Pinelands Commission begins its in-depth analysis of the protection program.

As we examine ways to improve the CMP, it is important to understand those elements that have been most effective in achieving the goals of the Plan. Provided below is a brief overview of the major accomplishments over the past two decades. In considering statewide development patterns over that twenty-year period, particularly in southern New Jersey, it is not difficult to imagine what the Pinelands would be like in the absence of the Pinelands Commission and the CMP. The information included in this report unequivocally shows that the CMP is achieving its objectives.

In spite of these successes, the Pinelands protection program is far from complete. Critical resources remain to be protected, communities slated to accommodate growth in the coming decades must be positioned to develop in an orderly and appropriate way and rural areas that are not benefiting from the region's prosperity need to have sustainable yet environmentally compatible economies. Past successes, as impressive as they may be, are but a springboard for even greater success in the years ahead. We can and will do better. This review gives the Commission the opportunity to step back and take a fresh look at the Plan. Equally important, it enables those most affected by and interested in the Plan to participate in its improvement.

MAJOR ACCOMPLISHMENTS

As one reads the individual chapters of this report, it is easy to focus on details and lose sight of the big picture. New Jerseyans can take pride in many accomplishments.

Since the Pinelands' designation, more than **150,000 acres of land** have been protected through public purchases, easements and other creative means. Past efforts have focused on large, contiguous tracts of land while future efforts are likely to pinpoint properties based on ecological and agricultural values. More than 40% of the Pinelands is now considered to be permanently protected.

The **Pinelands Development Credit Program** is the most successful regional development transfer program in the country. In the last six months alone, 6,000 acres of important forested and agricultural land have been protected, raising the total amount of protected land to 34,000 acres. 75% of this land has been protected through private development transfers but the State's Special Pinelands Development Credit (PDC) Purchase Program remains a vital, cost-effective component, resulting in the preservation of critical land at an average cost of \$850 per acre.

The **land use strategy** set forth by the CMP in 1980 remains largely unchanged after 21 years. Although hundreds of zoning changes have been proposed by municipalities and approved by the Commission, there has been no erosion of the CMP's original land use strategy which called for almost 600,000 acres of the most environmentally critical land in the region to remain in strict Preservation and Forest zoning designations.

Less than 6% of all approved development in the last twenty years is located in areas designated for conservation and agricultural uses. These areas, comprising almost 70% of the Pinelands, represent the core of the Pinelands protection program and remain largely undisturbed because of the CMP's strong land use controls.

The **Pinelands Infrastructure Trust Fund** has helped to finance sewer service for tens of thousands of new homes that are slated to be developed in Pinelands growth areas. This not only supports the goal of directing development into appropriate areas, it also helps to protect the region's water resources from the effects of non-point source pollution.

A **comprehensive environmental and economic monitoring** program that is unequalled elsewhere in the United States ensures that the Pinelands Commission can continuously track the health of the region.

Water resource protection remains at the forefront of the Pinelands program. Environmental monitoring confirms that the most important drainage areas in the heart of the Pinelands retain their natural qualities; a truly unique, intergovernmental plan to protect the upper reaches of the Mullica River basin from water supply and wastewater impacts has been instituted; new septic system technologies are being introduced to significantly reduce non-point source pollution; the Commission is leading the state sponsored Mullica watershed planning effort; and work is now beginning on a comprehensive assessment of the Kirkwood-Cohansey aquifer, the lifeblood of the Pinelands ecosystem.

Protection of other **important natural and cultural resources** has been advanced. New sand and gravel mines are no longer permitted in more than 70% of the Pinelands; through cooperative efforts with the farming community, agricultural soil extraction is now clearly defined and controlled to prevent unregulated soil removal under the guise of an agricultural use; 43 landfills have been closed; habitats critical to the survival of endangered plants and animals have been protected; and individual historic sites as well as historic districts have been given greater attention and protection. Comprehensive plans that minimize the number of cellular telephone towers and help protect Pinelands scenic qualities are in place.

Innovative regulations blending the **Pinelands' forestry regulations** with New Jersey's Forest Stewardship program have nearly doubled the number of privately sponsored forest management plans in the past ten years.

Small property owners whose properties have very little development potential are now afforded the opportunity to sell their land to the New Jersey Department of Environmental Protection (NJDEP). 226 such properties have been purchased and protected to date.

Partnerships have been forged with local, state and federal government agencies that establish a solid institutional foundation for the protection of Pinelands resources. Virtually every county and municipality has a Pinelands-approved master plan and zoning ordinance in place. A coordinated federal-state wetlands permitting system is in place. Formal agreements have been reached with scores of state, county, and municipal organizations to more effectively implement the Pinelands program. And the Pinelands Municipal Council, whose membership consists of the 53 Pinelands mayors, is working with the Commission on several important projects.

Municipalities play key roles in implementing Pinelands land use and resource protection standards when they review development proposals. The Pinelands Commission intervenes in less than 7% of all developments approved at the local level and overturns local approvals in only ½ of one percent of all cases.

Permit streamlining initiatives are speeding the processing of development applications without compromising Pinelands protection policies. 16% of all development applications are now reviewed by municipal “review officers” in 18 municipalities and another 8% are covered by agreements with local and state agencies that stipulate specific development conditions that serve to protect Pinelands resources. Technology initiatives now underway will further increase this efficiency and help to reduce permit processing costs in the future.

The number of **waivers (variances)** from Pinelands land use and development standards has dropped precipitously since 1992 when the Commission created the density transfer program, an alternative way for people to meet zoning requirements, and strengthened the waiver requirements. Only 15 waivers are granted throughout the almost 1 million acre Pinelands Area each year as compared to 90 each year under the prior regulations.

Tens of thousands of **people are learning** about the unique resources of this special place. Pinelands-specific curricula are educating thousands of primary and secondary school students, Pinelands speakers visit civic and other organizations each year, and almost 5,000 adults have attended the all day Pinelands “short course” offered every spring. The Richard J. Sullivan Center for Environmental Policy and Education is now a reality and will provide a unique forum for the Commission, residents, researchers and other policy-makers to learn about and improve the Pinelands protection program.

The **Pinelands’ economy** is keeping pace with and, in some cases, outperforming the economies of surrounding areas. Income and business development are growing at faster rates in the Pinelands than in other southern New Jersey areas while unemployment rates remain very low. Average residential tax bills also remain lower in the Pinelands than in surrounding areas.

SUMMARY OF THE REPORT

The following summary is organized according to the same format as, and functions as an abstract of, *The Third Progress Report on Plan Implementation*. For a fuller description of the activities cited, the reader should consult the corresponding chapter in the Progress Report.

Chapter 1 - Land Use Planning

During the past decade, the Commission has continued working closely with Pinelands municipalities in the implementation of the CMP. All seven Pinelands counties and 52 of the 53 municipalities in the Pinelands Area have now had their master plans and land use ordinances certified by the Commission. These are not static documents, however, as is evidenced by the many hundreds of municipal ordinance amendments reviewed by the Commission and the 45 changes in Pinelands management area boundaries certified by the Commission in 28 different municipalities since July 1991. As a result of these approved management area changes, the Forest, Agricultural Production and Special Agricultural Production Areas have been increased in size while the Rural Development and Regional Growth Areas have been decreased. Residential zoning capacities were likewise affected by the approved management area changes, as well as by other municipal rezonings and certified ordinance provisions. Overall, a nine percent decrease in the estimated residential zoning capacity of the Pinelands Area occurred during the last decade, continuing the trend reported in the 1991 Plan Review Report.

The CMP itself was also amended numerous times during the past decade. In fact, since July of 1991, the Commission adopted 17 sets of amendments to the CMP, three resulting from the second comprehensive review of the Plan which addressed a wide variety of topics such as forestry, waste management, landscaping, stormwater management, local communications facilities and resource extraction. Other amendments were adopted to establish density transfer programs in the Forest and Rural Development Areas, authorize pilot programs to test alternate methods of achieving the goals and objectives of the CMP, allow for the extension of certain waivers upon the transfer of development rights from other lands in the Pinelands Area, recognize “new” uses such as assisted living facilities, incorporate guidelines for changes in Pinelands management area boundaries, define and regulate agricultural resource extraction, and allow for a reduction in assigned Regional Growth Area residential densities in certain municipalities. A generous \$187,000 grant from the Geraldine R. Dodge Foundation will also help two municipalities address some of the critical community planning, design and development issues that have remained a challenge in Pinelands growth areas for many years.

The Commission also received a number of petitions for amendment during the past ten years. Two (those relating to off-site commercial advertising signs and the boundary of the Pinelands National Reserve [PNR]) were ultimately implemented through the Commission’s adoption of amendments to the CMP.

Chapter 2 - Project Review

Since 1981, 33,567 development applications have been submitted to the Pinelands Commission, 14,635 of which were received within the last ten years. Except for the first two years after the CMP went into effect (when application levels were very high), we receive around 1,500 applications each year.

More than 10,275 applications were deemed to be “complete” in the last decade, almost 25% of which were processed through streamlined permitting procedures. During this same period, 16,475 local approvals were granted, 16,364 (99%) of which were allowed to take effect by the

Commission without any further Pinelands Commission review. Of those in which the Commission did intervene, only 45 were ultimately denied. Septic and construction permits are now processed through a simplified “fax” procedure - 40% of all local approvals were handled in this manner.

The location of approved development corresponds well to the Pinelands management area designations. In the last ten years, less than 0.3 % of all approved residential units are located in the Preservation Area District while only 2.2 % are located within Pinelands Forest Areas. In contrast, over 71% of all residential development is located in Regional Growth Areas and another nearly 25% is located in Pinelands Villages, Towns and Rural Development Areas. The ten most active municipalities have not changed much from the first ten years; they represent Regional Growth Area and Pinelands Town municipalities in Atlantic, Burlington, Gloucester and Ocean Counties.

Since the inception of the CMP, waivers of strict compliance (variances from Pinelands land use and development standards) have been approved for 13,762 residential units; however, 12,624 (or 92%) were granted in the early years of the program for projects that had received local development approvals prior to 1979. 9,419 units have been denied. In 1992, the Commission amended the CMP to reduce the number of waivers approved because properties were not found to have a “beneficial” use. Since then, only 139 residential waivers have been approved, as compared to 999 beforehand.

Letters of Interpretation (LOIs) are issued to formally interpret various provisions of the CMP but their most frequent use is to calculate the number of Pinelands Development Credits to which an individual property is entitled. The number of LOIs has increased by 59% during the last ten years, largely due to increased landowner interest in the PDC Program. Indeed, 20% of all Pinelands Development Credit LOIs issued during the past ten years were issued in the past year as the Commission, the State Agriculture Development Committee, the NJDEP and the Pinelands Development Credit Bank worked together to make better use of the Special PDC Purchase Program

Chapter 3 - Permanent Land Protection

Permanent land protection has continued to play a crucial role in the preservation of the Pinelands ecosystem during the past decade, whether through land acquisition, on-site clustering and easements, or off-site density transfers. The most significant trends and developments to emerge over this time include substantial acquisition activity by the NJDEP outside of the originally designated “502” areas (these are acquisition projects funded, in part, through federal grants), the establishment of the Limited Practical Use Program, a competitive and diverse market for Pinelands Development Credits, a partnership with other state agencies to purchase and retire credits, creative applications of other preservation techniques on the part of the Commission, and heightened land protection efforts by non-profit conservation organizations as well as local and state governments.

The Commission works closely with the NJDEP to advance acquisition efforts in the Pinelands. Pinelands scientists and planners help to target efforts on ecologically significant areas. As a

result, 70,398 acres of land have been purchased within the “502” target areas since 1980. In the last ten years, the NJDEP also acquired land in environmentally sensitive areas outside of the “502” boundaries, totaling about 35,000 acres. Several large litigation settlements resulted in the acquisition of additional acreage, some of which will be conveyed to THE NJDEP. The Limited Practical Use Program, created as a remedy for small lot owners in the Pinelands has accounted for the acquisition of nearly 1,000 acres from 226 landowners since its inception.

Pinelands Development Credits continue to serve as a critical development transfer tool; approximately 14% of all residential development in the Regional Growth Areas during the past ten years involved PDC use. Approximately 8,300 rights have been allocated to the three sending areas since 1991, with 3,288 rights actually severed. Through June 2001, 27,750 acres within the Pinelands have been protected through the PDC Program. Much of this land was protected through the private sale of credits but the Special PDC Purchase Program, whereby the State buys and retires PDCs, continues to play an important role in land preservation.

Off-site preservation techniques such as clustering and other types of easements were responsible for protecting over 4,000 acres of undeveloped Pinelands land, in some cases, habitat for threatened or endangered species. In all, non-traditional acquisition techniques accounted for nearly 45% of the permanent land protection that occurred within the Pinelands during the past decade. Nevertheless, much more remains to be done to ensure the permanent, long-term protection of the Pinelands’ significant natural, cultural, agricultural and other resources.

Chapter 4 - Regulatory Programs

Dozens of formal agreements have been reached with other government agencies to improve the Pinelands protection program. Federal agency agreements help to coordinate various Pinelands initiatives, including delineation of wetlands in the Pinelands. Agreements with State agencies help to coordinate statewide planning efforts with the CMP, implement the Special PDC Purchase Program, coordinate permit processing with a number of NJDEP programs (including, for example, freshwater wetlands, stream encroachment, forestry, pesticide applications and hazardous waste), and streamline Pinelands permit application and approval procedures for public development. Streamlining agreements have been reached with several state agencies, many counties and 22 municipalities. Still other agreements address unusual site or development conditions. For example, agreements cover the closure of the lined portion of the Southern Ocean landfill, the use of certain sludge-derived products, the development of Atlantic County’s Lake Lenape Park, the use of herbicides along Pinelands transportation corridors, groundwater recharge of treated wastewater at the Kings Grant treatment facility and the temporary off-road recreational vehicle use of an abandoned sand mine in return for its reclamation.

The municipal local review officer (LRO) program, which expedites development application approvals for homes on existing lots by providing for the review of such applications by municipal zoning officers, is now in place in 18 of the 53 Pinelands Area municipalities. This program represents the Commission’s initial effort in both streamlining the overall application process and establishing a more cooperative permitting partnership with municipalities. Plans are in place to expand the LRO program through, among other things, technology improvements and training.

Enforcing Pinelands land use and development standards remains a challenge. About 81 violation reports are verified each year, about the same rate as in the 1980s. Each year, 52 are resolved, mostly through cooperative efforts with Pinelands municipalities. The most frequent types of violations are construction without the proper permits, illegal establishment of a land use and wetlands filling or clearing. Since the Commission's enforcement authorities are limited and its staff small, we attempt to support municipal enforcement efforts whenever possible.

Several important State laws have been enacted in the last ten years. Among the more notable are the 1995 Green Acres, Farmland and Historic Preservation and Blue Acres Bond Issue that provided state funding for the Commission's limited practical use (LPU) program; the 1999 Garden State Preservation Trust to acquire open space and protect farmland; the Pinelands Rural Economic Development Pilot Program authorized in 1997; 2001 legislation to undertake the Kirkwood-Cohansey aquifer assessment; and the 1996 establishment of a Pinelands license plate program. The Pinelands Water Resources Protection Trust Bond Act, which would provide \$70 million for important infrastructure projects, has yet to be passed.

Other notable activities include: the 1995 revival of the Pinelands Municipal Council, which meets approximately five times per year and provides a forum for the mayors of the 53 Pinelands municipalities to discuss a variety of issues; the "Firewise in the Pines" seminar, a joint effort with the NJDEP Forest Service and municipalities to increase forest fire awareness and education throughout the Pinelands; and the intergovernmental effort in 1997 and 1998 to address potential alternatives to the long discussed extension of State Route 55 in Cumberland and Cape May Counties.

Chapter 5 - Public Information and Outreach

In an effort to keep its various constituencies informed, the Commission produces three publications on a recurring basis - the Annual Report, *The Pinelander*, and *Pinelines*. The Annual Report summarizes Commission activities and its fiscal status while *The Pinelander* contains articles of general interest on regional topics, additional information on Commission activities and a calendar of upcoming events. *Pinelines* is an occasional publication which updates public officials on pending and adopted legislation affecting the region. The Commission's website, launched in 1996, provides a wealth of information about the Pinelands protection program.

Since 1984 the Commission's educational program has been enhanced and improved by the nine-member Pinelands Educational Advisory Council. The Council has helped select speakers and topics for the annual Pinelands Short Course, which relocated to the Richard Stockton College of New Jersey in 2001. It also helped lead the effort to adapt Pinelands lesson plans to the Commission's web site. This online curriculum, as well as the web site itself, are the recipients of two awards.

The Commission's efforts to interpret the Pinelands to the public were greatly aided by two Intermodal Surface Transportation Efficiency Act grants, awarded in 1995 and 1996. The grant funding, in excess of \$1.1 million, is being used by the Commission, in concert with the National Park Service and the Division of Parks and Forestry (NJDEP), for a variety of interpretive media.

In another joint effort with the NPS and the NJDEP, the Commission is participating in development of the New Jersey Coastal Heritage Trail. One component, the “Maritime History Trail,” was dedicated in 1993 and four other, themed trails will be opened in the coming years.

Chapter 6 - Cultural Resources

The Commission has completed most of the work necessary for development of a comprehensive cultural resource management plan for the Pinelands. In 1991, the Commission distributed the revised *Cultural Resource Management Plan for Historic Period Sites*, which dealt with the historic resources of the Pinelands from the past 350 years. More recently, the staff began work on the prehistoric component of the cultural resource management plan (i.e., sites associated with Native American culture prior to contact with European and African Americans). Because of their near invisibility across the landscape, the challenge in planning for prehistoric sites lies mainly in determining their numbers and location. The Commission’s approach involves development of a predictive model of prehistoric site occurrence. The model should be completed and will be ready for testing in 2002.

Permanent protection of historically significant sites in the Pinelands is accomplished by listing on the New Jersey or the National Register of Historic Places, by formal Designation by the Commission, or by action by a municipality via a local historic preservation ordinance. As of June 2001, a total of 34 buildings, structures, sites, and districts have been protected by entry on the New Jersey and/or National Register; six of these were researched and nominated by the Commission. Local ordinances have also been adopted as a means of preserving historic districts in six Pinelands municipalities. The Commission is currently working with Lakehurst Borough on a Register nomination and a historic ordinance.

To encourage Pinelands municipalities to implement local measures for the protection of their cultural heritage, the Commission developed and disseminated *A Survey of Potential Historic Districts in the Pinelands* in 1993. This report identified 23 areas that appear to be eligible for historic district status. Most of these were traditional settlements with concentrations of well preserved buildings and structures, but several less conventional areas were also included.

Between July 1991 and June 2001, the Commission staff reviewed 2,310 development applications to determine the need for a cultural resource survey; surveys were required for 302 (13.1%) of them. Of the 210 survey reports submitted during the same period, 115 (54.8%) identified a resource (though in most instances, the resource was not deemed eligible for Designation). During this time the Commission also began to assist municipalities and applicants with small development projects (such as road improvements) in satisfying the CMP requirement to address cultural resources in the application review process.

Chapter 7 - Other Planning Activities

During the past decade the Commission has been involved in a number of initiatives that developed either as an outgrowth of administration of the CMP or from a desire to assist Pinelands municipalities. The Commission’s efforts have addressed a wide range of issues, problems, and opportunities, including effective alternatives to conventional septic systems, the

economic well-being of rural communities, management of the Mullica River watershed, provision of infrastructure in areas slated for growth, and a variety of other topics.

The analysis of alternatives to conventional septic systems was prompted by the realization that the currently approved residential systems did not measurably reduce pollutants entering our groundwater resources. Therefore, in March 2000 the Commission formed a special committee to investigate other available septic system technologies that promised better results. The panel eventually recommended a total of five different systems for a detailed evaluation. The committee concluded that all five merited consideration and recommended establishment of an interim program to authorize their installation and monitoring over a minimum of a three-year period. The Commission has since proposed formal CMP amendments to implement these recommendations.

The Rural Economic Development initiative has involved two sequenced programs. In August 1997, the legislature authorized a pilot program to identify ways to attract businesses and related economic development opportunities to rural Pinelands municipalities. The Commission was charged with oversight of the program and immediately set about selecting qualifying municipalities. Eventually, seven municipalities were chosen to participate, either alone or in joint partnerships. A consulting firm was then awarded a contract to study current conditions in the participating municipalities and design strategies for reinvigorating the local economies. The three reports they drafted are available from the Commission. Unfortunately, many of the recommendations have yet to be implemented due to a lack of funding.

However, one of the consultant recommendations was for development of a state and federally designated Scenic Byway, which would encourage tourism and investment along the designated corridor. The Commission staff has been able to support the effort of as many as 16 municipalities in charting the route of a byway that would celebrate the natural and cultural wonders of the Pinelands while promoting economic development along the path. In 2001 a tentative alignment for the byway was identified that reaches from the Mullica River south to the Delaware Bay. In the coming year a nomination package will be prepared and submitted to the State. Eventually, application will be made to the Federal Highway Administration for designation as a National Scenic Byway.

Effective management of the Mullica River watershed is the goal of an initiative formally launched in September 2000 when the Commission and the NJDEP entered into an agreement to develop a management plan. The main objective of the management plan will be to assess current water quality and supply, and to develop strategies to maintain, restore and enhance the health of the ecosystem in the 24 towns and four counties which make up the watershed. A steering committee of watershed stakeholders has been formed and a second public meeting was held in October 2001 to solicit comments on short-term measures that might help to improve water quality and educate residents. Longer term goals include development of a water budget in 2003, establishment of target water quality in 2004, and completion of the management plan by 2005.

The Pinelands Infrastructure Trust Fund (PITF) provided \$30 million in grants and loans to Pinelands municipalities. The monies were used to build the infrastructure to support

development in Regional Growth Areas, primarily sewer projects in Gloucester, Camden, Atlantic, and Ocean Counties. These projects have significantly benefited the people and the environment of the Pinelands. More than 40,000 existing and new homes can be served by these sewer projects.

Chapter 8 - Economic Monitoring

The Commission sought and received federal support for a long-term economic monitoring program in the mid '90s. With input from a newly hired economist and an advisory committee of experts, a program was designed and established with two main components - annual monitoring of economic indicators to take the pulse of the region and special studies to determine causes and effects of any unusual trends. To date, these efforts have resulted in initiation of two special projects: a cooperative effort with the Pinelands Municipal Council to investigate municipal fiscal health and to determine if any of those conditions are unique to the Pinelands; and a special blueberry product development project, undertaken in concert with Rutgers University and local growers.

The monitoring program has generated a series of annual reports, with data being collected over various periods from 1980-2000. The data has not raised any special concern, as the region has continued to prosper, but it has identified several significant trends. For instance, Pinelands municipalities have outpaced non-Pinelands towns in building permits, with the majority issued along the northern, eastern, and western edges of the region. The Pinelands outperforms surrounding areas with lower unemployment rates and higher rates of growth of business establishments. However, wages in the Non-Pinelands region grew faster than in the Pinelands. A particularly encouraging finding was that agriculture remains a strong component of the economy, although cranberry prices, predominantly stable in recent years, dropped precipitously in 1999. Conversely, blueberry prices, once weak, have stabilized.

Overall municipal financial conditions in the Pinelands remain favorable when compared against other areas in the state, but these averages may mask some more localized conditions that bear watching. For this reason the Commission will continue to monitor the economic well-being of the region well into the future.

Chapter 9 Science Program

The Mullica River Basin study, which found that the current status of the aquatic and wetland resources in this major watershed is clearly related to existing land-use patterns, was completed as a major element of the Commission's federally funded long-term environmental monitoring program. The surface water quality and biological communities found in forested stream basins contrast sharply with those attributes found in basins with a high percentage of upland agriculture and developed land. Changes in the composition of stream vegetation, fish assemblages, and anuran (frog and toad) communities paralleled gradients of increasing land-use intensity and water quality degradation. Surface waters characterized by elevated pH and dissolved solids and biological communities that included non-native plant and animal species were common in stream basins with a high percentage of developed land and upland agriculture. An analysis of land-cover changes was also completed as part of the Mullica River Basin study.

The land-cover composition of the basin was similar in 1979 and 1991. Most land-cover transitions involved new development or the conversion of one agricultural land use to another and occurred in the appropriate Pinelands management areas.

In addition to other environmental monitoring projects, work has begun on two other important research initiatives. Timber rattlesnake monitoring is now underway in Evesham Township to examine the effects of the Sanctuary residential development and associated mitigation strategies on this snake population. A work plan for the Kirkwood-Cohansey aquifer assessment project is now being developed. This project, to determine how water supply needs may be met while protecting this critical aquifer and the Pinelands' ecology, will be undertaken with the help of the NJDEP, Rutgers University, the United States Geological Survey and the United States Fish and Wildlife Service. These are but two of many "applied" research projects that can help the Commission directly address difficult permitting and policy issues. The challenge will be to find the financial and staff resources to tackle these important matters.

Chapter 10 - Recommendations

The last chapter of the report highlights a number of possible initiatives related to the two core topics of this third review, permanent land protection and issues associated with addressing Regional Growth Area density reduction. It also includes some issues identified through this review process that the Commission may wish to consider as it embarks upon its review of the Pinelands protection program. These are not meant to be exhaustive but they are intended to highlight topics that can provoke critical thinking about and stimulate creative ideas to improve Pinelands programs, whether they be in the form of regulatory changes, administrative actions, legislation, etc.

The recommendations are grouped in five broad categories. Community development recommendations cover such topics as transportation and other services in developing municipalities, funding for key infrastructure improvements, community and neighborhood design and sustainable development in the Pinelands' more rural areas. The permanent land protection, resource protection, and land management grouping highlights questions and issues about Pinelands management areas, permitted uses, and resource protection standards. It outlines several possibilities for further strengthening permanent land protection initiatives. Research and planning topics include funding for environmental and economic monitoring programs, applied research, prehistoric resources and geographic data and surveys for endangered plants and animals. Operations and permit streamlining possibilities deal with the creation of a seamless permitting system, enforcement and other recommendations offered by group of "practitioners" in December 2001. The two education and interpretation topics deal with the future of the Richard J. Sullivan Center for Environmental Policy and Education and the future of Pinelands interpretation.

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INTRODUCTION

A periodic review of the New Jersey Pinelands Comprehensive Management Plan (CMP) is required by Section 502 of the National Parks and Recreation Act of 1978 (the federal legislation) and New Jersey's Pinelands Protection Act. This ensures that the Plan continues to be a "living" and "workable" document that responds to changing conditions, lessons learned, and innovations. It also enables the Pinelands Commission to effectively achieve its mission, "to preserve, protect and enhance the natural and cultural resources of the Pinelands National Reserve (PNR) and to encourage compatible economic and other human activities consistent with that purpose."

This is the third report of the New Jersey Pinelands Commission since 1983 detailing actions taken to implement the standards and procedures of the CMP. This report primarily covers the period between December 1991 (the date of the last update report) and June 2001 and is one component of the upcoming, formal review of the CMP. The review is intended to provide background information and identify ways and means whereby substantive and operational aspects of the CMP might be improved.

The Pinelands Commission held two retreats in January and May of 2001 to discuss the framework and time schedule for this review. There was agreement that the review should be conducted in a limited time period, focusing on issues of major concern. Given the breadth of issues covered by the CMP, past reviews, in the interest of being fully comprehensive, took a number of years to complete. The concept for this review is to identify critical efforts (ongoing and future) that may be necessary to assess and improve the Pinelands protection program and initially focuses on recommendations that can be implemented immediately. At these retreats, the Commission indicated that permanent land protection and measures to address Regional Growth Area communities should be the priority focus of this review.

During the course of this year, the Commission will hold a series of hearings and panel discussions in order to obtain input from local officials, land use planners, environmentalists, the development community, Pinelands residents, the general public and economic interests including agriculture. One meeting has already been held at which individuals who have regular, repeated contact with the Commission and involvement with the regulatory regime of the CMP suggested measures to better day-to-day operations.

The views expressed by all of the participants in the panel discussions, including the public in attendance, will be gathered with any written comments that are received and will then be organized and evaluated by the Commission and its staff. From them, the staff will prepare an assessment of the issues that have been raised so that they can be categorized according to their relevance and immediacy and the feasibility of their enactment. The Commission will then review all of the input from the panel discussions, the written submissions, this status report, and select final priorities for closer consideration, including the two, previously identified core topics (permanent protection of the Pinelands environment and sustainable development in growth areas) which the Commission settled upon in 2001. These priorities will then be sorted according to complexity and the appropriate action to be taken, i.e., CMP amendment,

administrative relief, or additional, more intensive study. By February 2003, a critique of this review, highlighting the results and next steps and efforts, will be completed. The Commission anticipates proposing amendments that respond to some of the more straightforward, less complex issues. Work on longer term and more involved issues will continue into next year.

This report, as well as the large-scale CMP review of which it is a part, is being presented to the Commission and disseminated to the public in conformance with a requirement of the CMP (N.J.A.C. 7:50-7.11). It summarizes the activities of the Commission over the past ten years in interpreting and applying the CMP and identifies a variety of possible amendments and procedural and other changes that could improve Pinelands protection programs. The report has been assembled generally according to major organizational and operational categories that have evolved since passage of the Pinelands Protection Act of 1979, these being Land Use Planning, Project Review, Permanent Land Protection (including acquisitions and the Pinelands Development Credit program), Regulatory Programs, Public Information, Cultural Resources, Other Planning Activities, Economic Monitoring, the Science Program, and Recommendations. It provides information on county and municipal conformance with the CMP (Land Use Planning), Commission action on proposed development (Project Review), intergovernmental coordination and CMP violation and enforcement activities (Regulatory Programs), educational programs (Public Education and Outreach), protection of the region's cultural and historic heritage (Cultural Resources), and a host of other initiatives - such as Analysis of Alternative Septic Systems, Rural Economic Development, and the Pinelands Infrastructure Trust Fund - in which the Commission has taken the lead (Other Planning Activities). The report further includes a summary of the economic monitoring program launched by the Commission in 1992 and a reprise of research into the natural sciences of the Pinelands. For further information on these and other programs, contact the Pinelands Commission.

CHAPTER 1

LAND USE PLANNING

To facilitate a comprehensive and consistent application of provisions of the New Jersey Pinelands Protection Act and the Comprehensive Management Plan (CMP), each municipality and county in the Pinelands Area is required to revise its master plan and land use regulations in order to implement the objectives and standards of the CMP. Local conformance enables municipalities to plan for their communities in a manner that integrates the basic tenets of the CMP. The CMP also sets forth a program to permit federal installations within the Pinelands to revise their master plans and enter into agreements with the Commission to ensure that their land use and development activities are compatible with Pinelands protection policies.

This chapter summarizes these land use planning activities and highlights noteworthy results of the municipal conformance process. Also highlighted are amendments to the CMP, which the Commission adopted to implement recommendations stemming from the second comprehensive review of the CMP, as well as to reflect changing and emerging land uses.

MUNICIPAL CONFORMANCE

The status of municipal conformance as of December 2001 is given in Table 1.1. As of December 2001, 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 as being in conformance with the CMP. Four of these municipalities (Berkeley Township, Egg Harbor Township, Lacey Township and the City of Port Republic) were certified subsequent to the issuance of the 1991 update report. The one remaining uncertified municipality, South Toms River Borough, has not initiated any significant conformance activity in recent years. Of the approximately 927,000 acres located within the Pinelands Area, all but 360 acres are now governed by approved municipal plans and ordinances.

The master plans and land use ordinances of the 52 certified municipalities are not static documents; the Commission reviewed and approved many hundreds of ordinance and master plan amendments during the past decade. A small number (45) of these amendments involved changes in Pinelands management area designations and are discussed in detail later in this chapter. The majority was generated by municipalities to reflect the changing needs of their communities and covered a wide variety of topics, ranging from the simple (e.g., revised sign standards) to the highly complex (e.g., adoption of lot disturbance standards for Regional Growth Area zoning districts). In order to accommodate municipal objectives in a manner which was consistent with CMP standards, the Commission did, on a number of occasions, work with municipalities to develop what might be termed “innovative” solutions. These included the use of Pinelands Development Credits (PDCs) for commercial development in Berlin Township’s Regional Growth Area, the accommodation of affordable housing opportunities in Medford Township’s Regional Growth Area, the creation of an industrial zone within Buena Vista Township’s Agricultural Production Area to allow for the expansion of an existing use, the

required provision of buffers from agricultural uses in Monroe Township's Regional Growth Area and Hammonton's Pinelands Town area, and the creation of a Rural Development Area zone in Monroe Township with a lower than normal density (one unit per eight acres) and requirements for clustered residential development.

Table 1.1
Status of Municipal Conformance
December, 2001

Certified

Barnegat Township	Manchester Township
Bass River Township	Maurice River Township
Beachwood Borough	Medford Lakes Borough
Berkeley Township	Medford Township
Berlin Borough	Monroe Township
Berlin Township	Mullica Township
Buena Borough	New Hanover Township
Buena Vista Township	North Hanover Township
Chesilhurst Borough	Ocean Township
Corbin City	Pemberton Township
Dennis Township	Plumsted Township
Dover Township	Port Republic City
Eagleswood Township	Shamong Township
Egg Harbor City	Southampton Township
Egg Harbor Township	Springfield Township
Estell Manor City	Stafford Township
Evesham Township	Tabernacle Township
Folsom Borough	Upper Township
Franklin Township	Vineland City
Galloway Township	Washington Township
Hamilton Township	Waterford Township
Hammonton Town	Weymouth Township
Jackson Township	Winslow Township
Lacey Township	Woodbine Borough
Lakehurst Borough	Woodland Township
Little Egg Harbor Township	Wrightstown Borough

Not Certified

South Toms River Borough

Another area in which the Commission worked with a number of municipalities involves affordable housing. The Council on Affordable Housing (COAH) sets both rehabilitation (rehabilitation component) and new construction (fair share number) housing obligations for all municipalities in the State, including those in the Pinelands Area. However, only in

municipalities with Regional Growth Areas or Pinelands Towns is the new housing obligation an issue. Generally, COAH rules require that a municipality zone for a density of at least six units per acre to subsidize a 20% set aside for inclusionary zoning for affordable housing. Densities this high are inconsistent with the residential density assignments of the CMP in many of the Regional Growth Areas. Even in Regional Growth Areas where a density of six units per acre is feasible, densities this high tend to be in zones where substantial PDC use is required. In such situations, the public purpose of providing an outlet for the restrictively zoned lands of the Pinelands Area runs counter to the public purpose of affordable housing because the costs of PDCs can hinder the affordability of projects. Several municipalities have proposed zones where such densities and affordable housing should be provided. The issue of PDC use was, with some difficulty, resolved in the past on a case-by-case basis through the creation of small zones in which the provision of affordable housing is required but there are no PDC obligations. This type of situation may become more acute in the future, especially if some of the municipalities with Regional Growth Areas that are concerned about over-development are successful in their pursuit of down-zonings and as further efforts to accommodate affordable housing occur.

The above examples represent cases in which the Commission was successful in meeting both municipal desires and CMP standards. There were, however, instances where the conflict between municipal and CMP goals was too great and the Commission was unable to accommodate municipal land use objectives. These instances may be characterized as falling within one of four categories: providing sewer service to uses or areas that are located in management areas where the CMP does not permit such service; increasing the non-residential tax base of rural communities; overcoming site-specific problems in designated growth areas; and siting large or unpopular uses. Examples of sewer service issues include new development adjacent to, but not within, sewer service areas, existing development isolated from sewer service areas, and clustering new development at appropriate sites which are not within sewer service areas. Examples of tax base issues include the desire of municipalities to increase non-residential development opportunities in Regional Growth Areas by reducing the size of residentially zoned areas, additional commercial development in the extensive Pinelands Forest Area regions, the suitability of golf courses and their impact on the CMP's land use goals, and the expansion of existing non-residential uses in management areas where sewer service and the use of alternate design wastewater treatment systems is not permitted. Examples of site-specific growth area issues include wetlands buffers, CMP requirements for on-site stormwater management, the presence of endangered or threatened species, and the presence of cultural resources. Examples of siting problems include local communications facilities (towers), the reuse of closed landfills as a means of obtaining necessary funding for capping, land extensive recreation areas (e.g., soccer fields), and regional schools.

COUNTY CONFORMANCE

The Pinelands Protection Act and the CMP require Pinelands counties to revise their master plans and land development regulations to be consistent with the CMP. The Commission has certified the plans and regulations of all seven Pinelands counties.

FEDERAL INSTALLATION CONFORMANCE

There are four primary federal facilities located within the Pinelands Area: Fort Dix Army Training Center, Lakehurst Naval Air Warfare Center, McGuire Air Force Base and the Federal Aviation Administration Technical Center. All of these facilities are located within a Military or Federal Installation Area.

Although the Commission does exercise some oversight of development activities at each of these facilities, only one - the Lakehurst Naval Air Warfare Center - formally requested and received Commission approval of its master plan in June of 1992.

PINELANDS MANAGEMENT AREA ADJUSTMENTS

Subchapter 5, Minimum Standards for Land Uses and Intensities, of the CMP establishes requirements which govern the type, location and intensity of land uses permitted throughout the Pinelands. Part II of subchapter 5 establishes nine management areas and sets forth the goals, objectives and permitted uses for each, a summary of which is provided in Table 1.2 on the following page.

The requirements of subchapter 5 provide a sound framework for the management of the Pinelands and afford local governments with the flexibility to refine them. N.J.A.C. 7:50-5, Part II, specifically provides municipalities with the ability to refine and adjust the boundaries of Pinelands management areas, provided such refinements and adjustments serve to implement the goals and objectives of the CMP. All management area adjustments are reviewed by Commission staff and the Commission's CMP Policy and Implementation Committee and become effective only after formal approval by the full Commission.

Table 1.3 provides a summary of management area changes certified by the Commission. "Current Acres" reflects management area changes which were accomplished when the Commission certified the master plans and land use ordinances of Berkeley, Egg Harbor and Lacey Townships and the City of Port Republic, as well as those approved in other municipalities subsequent to their original certifications by the Commission. Since June 1991, 45 changes in management area designations were certified by the Commission in 28 different municipalities. Nearly half of these redesignations involved less than 100 acres of land.

**Table 1.2
Pinelands Management Areas**

Management Area	Description	Permitted Uses ¹	
		Residential	Non-residential
Preservation Area District	heart of the Pinelands environment and the most critical ecological region; a large, contiguous wilderness-like area of forest which supports diverse plant and animal communities and is home to many threatened and endangered species	none except 1 acre lots in designated Infill Areas	limited commercial uses in designated Infill Areas
Special Agricultural Production Area	discrete areas within the Preservation Area primarily used for berry agriculture and horticulture of native Pinelands plants	farm-related housing on 40 acres	expansion of existing uses only
Forest Area	similar to the Preservation Area District in terms of ecological value; a largely undeveloped area which is an essential element of the Pinelands environment, contains high quality water resources and wetlands and provides suitable habitat for many threatened and endangered species	5 to 25 acre lots	roadside retail within 300 feet of preexisting use
Agricultural Production Area	areas of active agricultural use, generally upland field agriculture and row crops, together with adjacent areas with soils suitable for expansion of agricultural operations	farm-related housing on 10 acres non-farm housing on 40 acres	agricultural commercial; roadside retail within 300 feet of preexisting use
Rural Development Area	areas which are slightly modified and suitable for limited future development; represents a balance of environmental and development values that is intermediate between the pristine Forest Areas and existing growth areas	3.2 to 6.0 acre lots	small scale community commercial and light industrial uses on septic
Pinelands Village	small, existing, spatially discrete settlements which are appropriate for infill residential, commercial and industrial development compatible with their existing character	1 to 5 acre lots if not sewered	commercial and industrial uses compatible with existing character
Pinelands Town	large, existing spatially discrete settlements	2 to 4 homes per acre with sewers	commercial and industrial uses
Regional Growth Area	areas of existing growth and adjacent lands capable of accommodating regional growth influences while protecting the essential character and environment of the Pinelands	2 to 4 homes per acre with sewers	commercial and industrial uses
Military and Federal Installation Area	federal enclaves within the Pinelands	n/a	uses associated with function of the installation or other public purpose uses

¹Many of the uses described here are subject to various conditions and limitations. Other conditional uses are also permitted in many management areas. A number of Towns/RGAs are now sewered; densities in those areas are typically 1 unit per acre.

Table 1.3
Summary of Acreage Changes by Management Area
Pinelands Area¹
December 2001

Pinelands Management Area	1980 Acres²	1991 Acres	Current Acres³	% Change 1980-1991	% Change 1991-2001	% Change 1980-2001
Preservation Area District	292,918	292,601	291,176	-0.11%	-0.48%	-0.59%
Infill Area	2,000	2,037	2,072	0	1.72%	3.60%
Special Agricultural Production Area	36,133	36,133	36,817	0	1.89%	1.89%
Forest Area	245,118	242,441	245,591	-1.09%	1.30%	0.19%
Agricultural Production Area	74,656	66,269	67,492	-11.23%	1.85%	-9.60%
Rural Development Area	116,550	114,319	112,856	-1.91%	-1.28%	-3.17%
Pinelands Village	26,041	25,598	25,292	-1.70%	-1.20%	-2.88%
Pinelands Town	16,638	21,191	21,544	27.37%	1.67%	29.49%
Regional Growth Area	70,688	80,436 ⁴	77,610	13.79%	-3.51%	9.79%
Military and Federal	46,381	46,098	46,088	-0.61%	-0.02%	-0.63%
Total	927,123	927,123	927,123	0	0	0[*]

¹Includes only those lands within the state-designated Pinelands Area.

²Original (1980) acreage estimates have been adjusted to account for the original certification of Pinelands Villages, Special Agricultural Production Areas and Infill Areas. These areas were not geographically designated in the original CMP; instead, municipalities were given the responsibility to delineate villages and infill areas and designate Special Agricultural Production Areas within their jurisdictions, subject to the standards and guidelines provided in the CMP.

³While more accurate, "Current Acres" figures do not reflect management area data now available from the Commission's Geographic Information System. Instead, for comparison purposes, "Current Acres" was derived by modifying "1991 Acres" based on the 45 management area changes certified by the Commission between July of 1991 and December of 2001.

⁴A "municipal reserve" in Hamilton Township will be automatically converted to a Regional Growth Area in 2004. For purposes of this table, it is tabulated as RGA acreage.

As is indicated on Table 1.3, the Forest, Agricultural Production and Special Agricultural Production Areas have been increased in size since 1991 by 1.30%, 1.85% and 1.89%, respectively. On the other hand, the Rural Development Area has been decreased by 1.28% and the Regional Growth Area by 3.51%. This is primarily due to the Commission's long-standing practice of requiring that management area changes which increase the development potential for certain areas be "offset" by management area changes which decrease the development potential for other areas within a municipality. In order to provide a meaningful offset, the Commission generally seeks to identify lands which are comparable in character and at least equal in size to those for which a municipality is proposing to increase development potential. Such offsets are traditionally provided through a simple "swap" of lands between two management areas whereby, for example, 100 acres are redesignated from the Forest Area to the Rural Development Area and offset by the redesignation of 100 acres from the Rural Development Area to the Forest Area. In other more complex cases, an offset has been provided by redesignating lands from or to a different management area. For example, the increased development potential resulting from the redesignation of 100 acres from a Rural Development Area to a Pinelands Town might be offset by the redesignation of 500 acres from a Rural Development Area to a Forest

Area and the resulting decrease in development potential for those lands. Under this example, a larger offset would be necessary in order to accomplish a reduction in development potential of the same magnitude as the increase in development potential occurring elsewhere. The Commission has approved both types of management area changes over the years and expects to continue to do so as it has proven to be a successful tool in enhancing the protection of Pinelands resources while recognizing the need for municipal flexibility.

The current Pinelands Land Capability Map appears on the following page as Figure 1.1. This map, adopted as part of the CMP, is a graphic depiction of Pinelands management areas which form the basis upon which different land uses and the intensity of those uses are permitted in the Pinelands.

Preservation Area

In the Preservation Area, municipalities have the responsibility of delineating Pinelands Villages, designating Special Agricultural Production Areas and Agricultural Production Areas, and maintaining a Preservation Area “District.” Within the Preservation Area District, municipalities have the ability to designate Infill Areas which are discrete areas that exhibit compact patterns of existing development. Very few changes have occurred within the Preservation Area since 1991. The Pinelands Village of Bamber Lake (412 acres) was delineated in Lacey Township through the Commission’s original certification of that municipality’s master plans and land use ordinances. The Pinelands Village of Port Republic was also delineated, involving 143 acres in the Preservation Area. Another village, Beckerville, was established in Manchester Township; 62 acres of this village are located within the Preservation Area. Washington Township revised the boundaries of three of its Pinelands Villages (Green Bank, Lower Bank and Jenkins), resulting in a net increase of 58 acres. Two Special Agricultural Production Areas, totaling 460 acres in size, were designated in the Town of Hammonton and one existing Special Agricultural Production Area in Woodland Township was expanded by 224 acres. Finally, one new infill area of approximately 35 acres in size was established in Shamong Township.

Protection Area

Within the Protection Area, municipalities have many more opportunities to make management area adjustments to meet local needs and reflect site characteristics. The adjustments approved by the Commission during the past 10 years are summarized below by management area.

Pinelands Villages

Currently, there are a total of 47 certified Pinelands Villages in 29 municipalities. Four of these villages (Brookville, Warren Grove, Waterford Works, and Milmay) are located in more than one municipality. The 47 villages occupy nearly 25,300 acres, for an average village size of approximately 540 acres. In 17 of the villages, municipal land use ordinances require a minimum lot size of greater than one acre for residential development, rather than the one acre minimum utilized in the majority of villages. Because of the larger lot size requirements, the overall size of these villages was often increased beyond that which would normally be permitted to provide an opportunity for continued development and reflect the existing character of large lot development.

Between 1991 and 2001 the Commission certified 13 management area changes involving Pinelands Villages within the Protection Area. These included the delineation of the Pinelands Village of Port Republic in which 120 acres were rezoned from the Forest Area to the village and the establishment of the Pinelands Villages of Vincentown in Southampton Township (14 acres were rezoned from the Agricultural Production Area to the village) and Beckerville in Manchester Township (101 acres were rezoned from the Forest Area to the village). Other management area changes of note affecting Pinelands Villages in the Protection Area included the expansion of the Pinelands Village of Indian Mills in Shamong Township (65 acres were rezoned from the Agricultural Production Area to the village) and a significant decrease in the size of the Pinelands Village of Sweetwater in Mullica Township (639 acres were removed from the village and rezoned to the Forest Area).

Forest Area

The largest management area in the Protection Area, and the most environmentally sensitive, is the Forest Area. The Forest Area currently includes 245,591 acres in the Protection Area and an additional 154,684 acres outside the Protection Area but within the federally designated PNR. Three municipalities (Bass River Township, the City of Estell Manor and Ocean Township) have received certification of their master plans and land use ordinances for 18,431 acres of Forest Area in the Pinelands National Reserve (PNR). In total, 35 municipalities with Forest Areas covering 245,591 acres have been certified by the Commission.

Between July of 1991 and December of 2001, the Commission certified 22 management area changes affecting the Forest Area. The net result was an increase in the size of the Forest Area of 3,150 acres. The largest change occurred in Maurice River Township and involved the redesignation of over 1,500 acres from the Rural Development Area to the Forest Area to better reflect wetlands patterns. Other large additions to the Forest Area occurred in Buena Vista Township (780 acres), Galloway Township (460 acres), the Town of Hammonton (339 acres), Mullica Township (639 acres) and Ocean Township (282 acres). The only decreases of note involved the rezoning of 275 acres to the Pinelands Town of Hammonton, the creation of an Agricultural Production Area in Berkeley Township to recognize existing cranberry bogs (644 acres), and the delineation of two Pinelands Villages: Port Republic (120 acres) and Beckerville (101 acres).

Agricultural Production Area

The CMP originally designated Agricultural Production Areas based on the presence of actively farmed areas and surrounding lands with soils suitable for agricultural use. Approximately 75,000 acres were originally included in the Agricultural Production Area under the CMP. By 1991, this management area had been reduced to 66,269 acres in size as a result of the Commission's certification of municipal master plans and land use ordinances which frequently sought to adjust boundaries to better reflect areas of active agriculture, existing development

patterns and environmental features. The past ten years, on the other hand, have seen an increase in the Agricultural Production Area; there are currently 19 municipalities with Agricultural Production Areas which cover a total of 67,492 acres.

Between July of 1991 and December of 2001, the Commission certified 13 management area changes affecting the Agricultural Production Area. The net result was an increase in the size of the Agricultural Production Area of 1,223 acres. This increase was primarily due to the establishment of two new Agricultural Production Areas to recognize existing cranberry bogs, one in Berkeley Township (745 acres) and the other in Medford Township (708 acres). A Monroe Township master plan reexamination resulted in the rezoning of 457 acres from the Agricultural Production Area to the Rural Development Area; this decrease in the Agricultural Production Area was offset by the rezoning of 682 acres from the Rural Development Area and Regional Growth Area to the Agricultural Production Area. Other decreases of note involved the rezoning of lands in the Agricultural Production Area to the Pinelands Villages of Indian Mills (65 acres) in Shamong Township and Vincentown (14 acres) in Southampton Township, as well as the rezoning of 460 acres of forested land in Galloway Township to the Forest Area.

The Agricultural Production Area was also impacted by two pilot programs which were authorized by the Commission. The first of these programs, the Township of Galloway and City of Egg Harbor City Pilot Off-Site Clustering Program, resulted in the redesignation of 260 acres from the Agricultural Production Area to the Rural Development Area and Pinelands Town in Galloway Township to facilitate expansion of an existing complex, the Renault Winery. The second program, the Township of Tabernacle and Township of Pemberton Public Educational Facilities Pilot Program, involved the redesignation of 146 acres from the Agricultural Production Area to the Regional Growth Area in Tabernacle Township to accommodate a new regional high school and the redesignation of 298 acres from the Regional Growth Area to the Agricultural Production Area in Pemberton Township.

Rural Development Area

Rural Development Areas currently account for 112,856 acres in the Pinelands Area, with an additional 17,361 acres falling within the PNR, outside the state-designated Pinelands Area. Two municipalities with Rural Development Areas, Bass River and Ocean Townships, revised their land use ordinances for certification by the Commission, accounting for approximately 1,100 acres in the PNR. In total, 28 municipalities with Rural Development Areas have been certified. The current Rural Development Area acreage figure represents a 1,463-acre decrease from 1991 and a continuation of the trend in a reduction in size of the Rural Development Area from 1980.

Twenty-five of the 45 management area changes certified by the Commission between July 1991 and December 2001 affected the Rural Development Area. This large percentage may reflect the fact that the Rural Development Area serves as an intermediate management area in terms of land uses and development intensities, one in which adjustments are frequently made to reflect local land use and environmental conditions.

Large increases in the Rural Development Area occurred in Jackson Township, Waterford Township and Shamong Township where 1,500 acres, 634 acres and 180 acres were

redesignated from the Regional Growth Area. Decreases of note include Berkeley Township where 78 acres were redesignated to the Agricultural Production Area, 233 acres to the Forest Area and 187 acres to the Regional Growth Area; Berlin Township where 103 acres were redesignated to the Regional Growth Area; Buena Vista Township where 780 acres were redesignated to the Forest Area and 197 acres were redesignated to the Pinelands Town; Egg Harbor Township where the entire 212-acre Rural Development Area originally designated by the CMP was redesignated to Regional Growth Area; Maurice River Township where 1,500 acres were redesignated to the Forest Area; Medford Township where 708 acres were redesignated to an Agricultural Production Area; Ocean Township where 282 acres were redesignated to the Forest Area; and Stafford Township where that municipality's entire Rural Development Area (140 acres) was redesignated to the Forest Area.

Regional Growth Area

Regional Growth Areas totaling approximately 119,000 acres in 30 municipalities were originally designated in the CMP. The Regional Growth Areas of seven of these 30 municipalities are located entirely outside the state-designated Pinelands Area and account for approximately 48,000 acres of the total. Within the Pinelands Area, the CMP designated 70,688 acres of Regional Growth Area in 23 municipalities. By 1991, the size of the Regional Growth Area had been increased by 13.8 percent to 80,436 acres through the Commission's certification of the master plans and land use ordinances of 21 Regional Growth Area municipalities. Since that time, an overall reduction in the size of the Regional Growth Area has occurred, bringing the total to 77,610 acres in 24 municipalities.

Since 1991, the Commission certified 20 management area changes affecting the Regional Growth Area. The largest of these occurred in Jackson Township where 1,500 acres were redesignated from the Regional Growth Area to the Rural Development Area. Other significant decreases occurred in Waterford Township where 634 acres were rezoned to the Rural Development Area, in Monroe Township where a total of 772 acres were rezoned to the Agricultural Production and Rural Development Areas, and in Shamong Township where 180 acres were rezoned to the Rural Development Area. Increases of note occurred in Berkeley Township where a 187-acre Regional Growth Area was created as part of that municipality's 2001 certification effort and in Berlin Township where 103 acres were redesignated from the Rural Development Area, primarily to facilitate commercial development along Route 73.

As previously discussed, the Township of Tabernacle and Township of Pemberton Public Educational Facilities Pilot Program authorized by the Commission also affected the Regional Growth Area. Under this pilot program, approximately 160 acres were added to the Regional Growth Area in Tabernacle Township while approximately 300 acres were removed from the Regional Growth Area in Pemberton Township and added to that municipality's Agricultural Production Area.

Pinelands Towns

Pinelands Towns, existing spatially discrete settlements, accounted for 21,191 acres in the Pinelands Area in 1991. Since that time, the Commission certified eight management area changes affecting Pinelands Towns, resulting in an increase of 353 acres in this management area. The two primary changes occurred in the Town of Hammonton where the Pinelands Town was expanded to include 275 acres previously located in the Forest Area and in Buena Vista Township where the Pinelands Town was expanded by 197 acres along Route 40. It should be noted that both of these expansions were offset by significantly larger rezonings to conservation areas; in Hammonton, 339 acres were redesignated from the Pinelands Town to the Forest Area and 71 acres were redesignated from the Pinelands Town to the Agricultural Production Area and in Buena Vista, 780 acres were redesignated from the Rural Development Area to the Forest Area.

The Township of Galloway and City of Egg Harbor City Pilot Off-Site Clustering Program authorized by the Commission in 1996 also impacted the overall size of the Pinelands Town management area. Under this program, 120 acres in Galloway Township were redesignated from the Agricultural Production Area and 90 acres in Egg Harbor City were redesignated from the Forest Area to the Pinelands Town.

Summary

Adjustments were made in all management areas during the period between July 1991 and December 2001. With the exception of the Regional Growth Area, which decreased in size by 3.5 percent, no management area was changed by more than two percent. The trend was for the inclusion of more land in conservation-oriented areas, sometimes as the result of “offsetting” zoning changes but other times merely to reflect environmental limitations. Few very large changes were made; those that did occur were generally the result of master plan reexaminations in those municipalities that had made few, if any, changes since their master plans and land use ordinances were originally certified by the Commission. As noted previously, nearly half of the 45 approved management area changes involved less than 100 acres of land. Many represented minor boundary adjustments or corrections and a significant number involved the rezoning of lands back to their original CMP management area designations.

RESIDENTIAL ZONING CAPACITY ESTIMATES

CMP standards and guidelines vary widely by management area. Therefore, most management area boundary adjustments result in changes in residential zoning capacity. Other factors, such as Waivers of Strict Compliance and “grandfathered” lots, also contribute to the overall development potential of the Pinelands Area. In 1983, an estimate based on the existing management area delineations and the possible effects of other CMP provisions was published. That estimate was updated in the 1991 report by using zone capacities from land use ordinances in those municipalities which had been certified by the Commission as well as the average density standards of the CMP for those municipalities not yet certified. The “Current Estimate” presented on Table 1.4 relies on zone capacities from the land use ordinances of the 52 certified

municipalities (CMP average density standards are used for the one remaining uncertified municipality) and takes into account the 45 management area redesignations certified by the Commission beginning in July of 1991, as well as other ordinance changes which municipalities adopted to affect zoning densities within existing management area boundaries. For comparison purposes, the “Current Estimate” figures have not been adjusted to account for the amount of development which may have occurred in any management area during the past decade, nor were the 1991 figures adjusted in that fashion.

For the Forest Area, the current zoning capacity estimate is 8,625 dwelling units, a slight decrease (575 units or six percent) from that which was estimated in 1991. While at first glance it would appear that an increase in Forest Area zoning capacity should have resulted from the increased acreage of this management area shown on Table 1.4, rezonings within the Forest Area itself led to a decrease in units and in many cases, lands rezoned to the Forest Area had little development potential due either to their environmental limitations or public ownership. The Rural Development Area experienced a larger decrease of 2,355 units or 10 percent.

Residential zoning capacity in the Regional Growth Area has been decreased by 10,300 units (5,846 “base” units; 4,454 PDC units) or approximately 10 percent during the past 10 years. This decrease is due not only to management area adjustments adopted by a number of municipalities but also to decreases in density within certified Regional Growth Areas, particularly Egg Harbor and Hamilton Townships which recently took advantage of the flexibility provided by N.J.A.C. 7:50-5.28(a)7ii. Actual zone capacities in the Regional Growth Area approximate 114,000 units. The difference between actual zone capacity and that reflected on Table 1.4 is nearly 21,000 units and is attributable to the fact that, while certified Regional Growth Area zoning ordinances permit as many as 39,000 units to be built through the use of PDCs, there are at most only approximately 17,500 rights available for transfer from the Preservation Area District, Special Agricultural Production Area and Agricultural Production Area. As was the case in 1991, there are, by design, currently more than twice as many opportunities to use PDCs provided through certified Regional Growth Area zoning ordinances than there are credits available for use.

The only management areas in which an increase in zoning capacity occurred are Pinelands Villages and Towns which increased by 400 units or two percent. Only six percent (25 units) of this increase may be attributed to Pinelands Villages; the remaining 375 unit-increase is associated with Pinelands Towns and may be attributed both to changes in external Town boundaries and rezonings within Towns, a number of which were adopted to meet affordable housing obligations.

**Table 1.4
Estimated Residential Zoning Capacities in the Pinelands Area¹**

Category	1983 Estimate	1991 Estimate	Current Estimate	% Change 1980-1991	% Change 1991-2001	% Change 1980-2001
Infill Area (Preservation Area District)	0 ²	200	201	N/A	0.50%	0.50%
Forest Area	9,000	9,200	8,625	2.17%	-6.25%	-4.17%
Rural Development Area	22,900	24,200	21,845	5.68%	-9.73%	-4.61%
Pinelands Villages and Towns	17,700	16,400	16,800	-7.34%	2.44%	-5.10%
Regional Growth Area						
Base units	91,200	80,800 ⁴	75,000 ⁴	-11.40%	-7.24%	-17.81%
PDC units ³	26,000	22,500	17,500	-13.46%	-22.00%	-33.00%
Total	117,200	103,300	92,500	-11.86%	-10.00%	-21.00%
Waivers	14,300	11,900	9,300	-16.78%	-21.85%	-34.97%
Substandard Lots	10,000	10,000	6,500	0	-35.00%	-35.00%
Total	191,000	175,200	155,771	-8.00%	-11.00%	-18.00%

¹So that the 1983, 1991 and Current Estimates can be compared to one another, the amount of development which has occurred over time, and the land associated therewith, have not been used as a basis to adjust zone capacities.

²Zone capacities for Infill Areas were not estimated in 1983.

³These estimates reflect the maximum number of rights that may be transferred from sending areas (PAD, SAPA and APA) to the RGA. The actual zone capacities in the RGA exceed these estimates; the current estimate of zone capacity for PDC units is approximately 39,000.

⁴A “municipal reserve” in Hamilton Township will be automatically converted to a RGA in 2004. For purpose of this table, it is treated as a growth area.

Waivers of Strict Compliance

Waivers of Strict Compliance are approved by the Commission as a means of providing relief where strict compliance with CMP standards would create an extraordinary hardship or where relief is necessary to serve a compelling public need. As is discussed in Chapter 2, more than 13,600 residential units received Waivers of Strict Compliance between September of 1980 and June of 1991. Since the 1992 amendments to the waiver program took effect, the Commission has approved only 139 waivers, for an average of 15 waivers or units per year. Projecting that practice into the future, it is estimated that a total of approximately 9,300 residential units may be authorized through the Commission’s approval of Waivers of Strict Compliance through the middle of this century.

Substandard Lots

The substandard or “grandfathered” lot provisions of the CMP provide that existing lots of an acre or more in the Protection Area may be developed if certain conditions are met relative to ownership and occupancy. The Commission originally estimated that approximately 10,000 dwelling units could be developed under these provisions based on an analysis of ownership patterns. The 1991 Report indicated that it was likely considerably less than 10,000 substandard lots would ultimately be approved for development, based on municipal recognition of existing

land tenure patterns when developing land use ordinances and actual lot counts which were completed in three municipalities. A precise number remains difficult to determine. However, the relatively small number of units approved under the substandard lot provision to date, coupled with past and ongoing acquisition activities in those management areas where the substandard lot provision is most frequently used, indicate that a significant reduction in the estimate is warranted. Therefore, the original 10,000-unit estimate is being reduced by approximately one-third to 6,500 units in this report.

Other Categories

There remain certain categories of development for which no estimate of residential zoning capacity is provided. The PNR outside the state-designated Pinelands Area is not subject to the development review standards and procedures of the CMP, nor are municipalities required to have their master plans and land use ordinances for that area certified by the Commission as being in conformance with the CMP. Any estimates of development potential would therefore be speculative and are not projected here.

Since all residential development permitted in Agricultural Production Areas, Special Agricultural Production Areas and the Preservation Area District is conditional in nature, it is not possible to derive accurate estimates based on land characteristics alone. However, as Chapter 2 suggests, the level of residential development in these three management areas, over and above that permitted through the Commission's approval of Waivers of Strict Compliance or through qualification under the CMP's grandfathered lot provisions, is expected to be insubstantial.

Zone Capacity Summary

In 1981, the Commission estimated that approximately 237,000 new residences could be built within the PNR under the terms of the CMP. Although the estimates presented in this report are somewhat less, this is attributable to several factors: lands within the PNR but outside the state-designated Pinelands Area are not included (nor were they included in the 1983 or 1991 estimates); Regional Growth Area zone capacities have been reduced by slightly more than 10,000 units due to reductions in the size of that management area through the municipal conformance process and decreases in permitted density implemented in accordance with N.J.A.C. 7:50-5.28(a)7ii; a number of waivers have expired; the March 1992 CMP amendments have resulted in a significant reduction in the number of waivers approved each year; and the number of units expected to be developed under the substandard lot provisions of the CMP has been reduced based on past permitting experience and ongoing acquisition activities.

AVERAGE GROSS DENSITY

The CMP assigns "net" residential densities for three management areas: the Forest Area, the Rural Development Area and the Regional Growth Area. These net densities are based upon the amount of private, vacant upland in the management area. In the Forest Area, the CMP assigns a net density of one unit per 15.8 acres. In the Rural Development Area, a net density of 1 unit per 3.2 acres is assigned. Assigned net densities in the Regional Growth Area vary from 1.0 unit per

acre to 3.5 units per acre. These net densities are then translated to gross densities when municipalities design their zoning plans for Commission certification. Table 1.5 indicates the average gross densities permitted by certified municipal ordinances in the three management areas.

**Table 1.5
Current Average Gross Densities**

Management Area	Average Gross Density in Certified Land Use Ordinances	
	Acres per unit	Units per acre
Forest Area	1 unit per 28 acres	N/A
Rural Development Area	1 unit per 5 acres	N/A
Regional Growth Area	N/A	3.0 units per acre

NON-RESIDENTIAL ZONING DISTRICTS

As was indicated previously on Table 1.2, non-residential uses are permitted in a number of Pinelands management areas. Significant limitations apply within the more restrictive areas (e.g., commercial uses are generally permitted in the Forest and Agricultural Production Areas only in close proximity to commercial uses which existed in 1979). In the Rural Development and Regional Growth Areas, as well as in Pinelands Towns and Villages, the CMP provides municipalities with the opportunity to permit a wider variety of non-residential uses and establish commercial and industrial zones. Table 1.6 provides a summary of such municipal zoning efforts.

Attracting commercial ratables has long been perceived by many Pinelands municipalities as a critical objective, one which has sometimes proven difficult to accomplish within the Regional Growth Area due to the residential density assignments of the CMP. The CMP does, however, provide municipalities with some degree of flexibility in the design of Regional Growth Area zoning plans. For example, lands which are zoned for non-residential uses, predominantly developed as such and which otherwise form a part of a reasonable balance between non-residentially zoned property and residentially zoned lands need not be included when applying the residential density requirements of the CMP. As Table 1.6 indicates, it is within the Regional Growth Area that the largest number of non-residential zones (56 commercial zones; 13 industrial zones) have been certified and the greatest amount of land (over 13,300 acres) has been made available for non-residential development. All but two of the 23 certified municipalities with Regional Growth Areas have provided for one or more commercial or industrial zone. Nevertheless, the impact of CMP residential density assignments on the ability of municipalities to achieve an appropriate and desirable balance of land uses in their Regional Growth Areas remains an issue worthy of further consideration.

Table 1.6
Non-residential Zoning Districts in Certified Municipalities
Pinelands Area

Management Area	Commercial and Industrial Zones		% of Total Management Area
	#	Acres	
Infill Area (Preservation Area District)	2	340	17 ¹
Forest Area	9	2,500	1
Agricultural Production Area	6	500	1
Rural Development Area	24	7,700	7
Pinelands Village	22	3,300	13
Pinelands Town	26	4,300	20
Regional Growth Area	69	13,300	17

¹Represents % of total acres included in infill areas, not within the entire Preservation Area District.

COMPREHENSIVE MANAGEMENT PLAN AMENDMENTS

Since July 1991, the Commission has adopted 17 sets of amendments to the CMP. Three of these resulted from the second comprehensive review of the CMP and took effect in December of 1994, August of 1995 and May of 1996. They involved the following topics:

?? *Forestry* - In 1995, a small working group was formed consisting of representatives from the Commission staff, the NJDEP, and the private forestry industry for purposes of developing recommendations to streamline and simplify the Pinelands forestry program and make it more predictable, without leading to unwarranted ecological consequences. Amendments were subsequently adopted in 1996 to implement the recommendations of this group and focused on three areas: the municipal permitting process, the Commission's application process and CMP standards for forestry operations. With respect to the municipal permitting process, the amendments required that a clear and straightforward process for the review and approval of forestry permits be established at the municipal level, that any municipal fees for forestry permits be reasonable and that forestry permits be valid for 10 years, rather than the two year period previously authorized in the CMP. In terms of the Commission's application process, the amendments exempted certain small-scale forestry activities, provided that the Commission would assume the responsibility of completing any necessary cultural resource surveys when asked to do so and, more importantly, established a system which utilizes participation in other State programs (i.e., the State's woodland assessment program and the New Jersey Forest Stewardship Program) and keeps additional Pinelands requirements to a minimum. Forestry standards were likewise revised to implement a system which relies on the expertise of the NJDEP relative to most

silvicultural and best management practices and focuses additional standards on matters of particular importance in the Pinelands. Finally, additional standards for forestry practices on State lands were adopted. See Chapter 4 for a discussion of the impacts of these amendments on the Commission's forestry program and review of applications;

- ?? *Growth and Design* - Amendments were adopted in 1994 to increase municipal flexibility when designing zoning plans for Regional Growth Areas by permitting the residential density requirements of the CMP to be increased or decreased by as much as ten percent if certain conditions are met. To date, two municipalities (Egg Harbor and Hamilton Townships in Atlantic County) have implemented ten percent decreases in their residential zoning capacities pursuant to these amendments and a third, Winslow Township in Camden County, is expected to do so in the near future. The Commission also adopted amendments which provide greater opportunities for the phasing of development in Regional Growth Areas by allowing municipalities to establish "reserves" which would be zoned for lower residential densities until infrastructure is provided and other requirements are met. Finally, amendments were adopted which encourage municipalities to adopt more appropriate zoning standards for commercial uses along highways so as to reduce the amount of so-called "strip" development;
- ?? *Resource Extraction* - Amendments were adopted in 1994 to clarify existing resource extraction standards, prohibit new mining operations in the Forest Area (increasing from 43 percent to 70 percent those areas in the Pinelands where new mining operations are now prohibited), and streamline the resource extraction permit process by allowing longer permit renewal periods and permitting certain activities to occur without individual permits. To date, six municipalities have revised their permitting procedures to provide for the longer permit renewal periods authorized by these amendments;
- ?? *Solid Waste Management* - Amendments were adopted in 1996 an attempt to address evolving policies and technological advances in this particular field. These amendments: clarified the types of facilities that are permitted when ancillary or otherwise related to agricultural operations; prohibited mass burn incinerators in the Pinelands; continued existing prohibitions on hazardous waste processing facilities and solid waste landfills; established siting policies for specified types of waste management facilities whereby more intensive facilities may be located only in or near areas where wastes are generated and less intensive facilities may be located at closed landfills and in Pinelands Villages; increased flexibility relative to the closure of existing vegetative and construction debris landfills and the capping of existing landfills with impermeable materials; exempted recyclable materials from the normal waste importation limitations of the CMP; specified the conditions under which recycling centers accessory to resource extraction operations or concrete or asphalt manufacturing plants and facilities intended for the collection and transfer of petroleum waste and household hazardous waste may be permitted in the Pinelands; and defined situations where deviations from siting, importation or land application limitations may be permitted through memoranda of agreement which ensure protection of Pinelands resources;

- ?? *Stormwater Management* - Amendments were adopted in 1994 to focus stormwater recharge requirements on 10-year storm events, rather than 50-year storms, require that the rate of runoff from larger storms be controlled, require retention of stormwater only from impervious surfaces, ensure adequate construction and maintenance of stormwater retention basins through maintenance guarantees and inspection and monitoring programs;
- ?? *Water Supply* - An amendment was adopted in 1994 to promote greater consideration of water conservation by requiring both purveyors and users of water supply systems to address conservation;
- ?? *Off-site Advertising Signs* - Amendments were adopted in 1994 to permit existing lawful signs to continue in Regional Growth Areas, Pinelands Towns and certain non-residential zones in Rural Development Areas and Pinelands Villages, provide for the removal of all other off-site advertising signs and allow municipalities to permit new signs in Regional Growth Areas and Pinelands Towns as replacements for existing signs that are removed from other management areas. To date, the Commission has issued 40 sign “rights”, signifying the removal of existing off-site advertising signs. Six of these sign “rights” have been used in the development of new off-site advertising signs pursuant to the adopted amendments;
- ?? *Local Communications Facilities* - The CMP contains a maximum height limitation of 35 feet in all management areas, with the exception of Regional Growth Areas and Pinelands Towns. Recognizing that this height limitation severely restricted the ability of the cellular telephone industry to provide service in a significant portion of the Pinelands and that such service was growing in importance for many types of communication, amendments were adopted in 1995 which define the term “local communications facility,” allow municipalities to permit such facilities in all management areas, subject to certain siting limitations, and establish standards for such facilities that exceed 35 feet in height. These standards include requirements for the use of existing structures where feasible, the demonstration of a need for the facility to serve the Pinelands and to be located in the Pinelands, accommodation of the needs of other local communications providers in the design of support structures, the minimization of visual impacts from various roads, recreation facilities, existing residential development, river corridors and special Pinelands resources. Perhaps most significant was a requirement for submission of a comprehensive plan for the entire Pinelands whenever a facility exceeding 35 feet in height is proposed outside a Regional Growth Area or Pinelands Town. The intent of this requirement was to ensure that the number of facilities proposed in certain more sensitive management areas is the least number necessary to provide adequate service. Based on this requirement, the Commission approved two comprehensive plans, the Comprehensive Plan for Wireless Communication Facilities in the Pinelands in September of 1998 and the Comprehensive Plan for PCS Communications Facilities in the Pinelands in January of 2000. The Commission’s approval of these plans is discussed in greater detail in Chapter 7;

- ?? *Landscaping* - Recognizing that it was impractical to continue targeting detailed landscaping regulations to individual lot owners, amendments were adopted in 1996 to focus CMP standards on larger development projects where the use of characteristic Pinelands vegetation and low maintenance landscaping practices is likely to have a more significant impact on Pinelands resources. These amendments required that publicly sponsored projects, major developments and those other applications for which municipalities require the submission of landscaping plans maximize the use of existing vegetation, minimize permanent lawn or turf areas and maximize the use of native shrubs and trees. In addition, the amendments provided for the use of non-native species for limited ornamental purposes, screening and buffering and when the area to be developed contains a predominance of other shrub and tree species; and
- ?? *Cultural Housing* - Special provisions are included in the CMP to permit members of long time Pinelands families to reside in the Pinelands and continue their contributions to the region's existing social and cultural character. Amendments adopted by the Commission in 1996 clarified and simplified the tests which applicants must meet to qualify for the development of a home under the cultural housing provisions while ensuring that only those persons with long-standing ties to the Pinelands are afforded this special opportunity to subdivide residential lots for their family members.

Other notable amendments adopted by the Commission which relate to land use planning are described below. Noteworthy amendments concerning development review and permanent protection are described in Chapters 2 and 3.

Density Transfer Programs

Amendments adopted by the Commission in 1991 created a density transfer program for the Forest and Rural Development Areas. Under this program, existing lots which would otherwise be considered "undersized" may be developed if sufficient noncontiguous lands elsewhere in the same management area are permanently protected so that the overall parcel size which results is equal to the minimum lot size for the zone in which development is proposed. To implement the CMP amendments, density transfer programs were established and certified in 35 municipalities. These programs range from the simple (where development of an existing undersized lot is permitted if noncontiguous lands elsewhere in the same zoning district are deed restricted) to the complex (where "receiving" and "sending" areas within a zone or management area are designated, the deed restriction of noncontiguous lands in zoning districts other than that in which development is proposed is allowed or where the creation of new "undersized" lots is permitted). Nine programs involving the designation of receiving and sending areas were established, seven in the Forest Area and two in the Rural Development Area. These special programs were developed by Commission staff in an attempt to provide increased protection to an identified resource or environmentally sensitive area, as well as to better direct development to appropriate portions of particular zoning districts or management areas.

Since the CMP amendments took effect in March of 1992, over 100 Certificates of Filing in 15 different municipalities have been issued for applications proposing development under a density transfer program. These Certificates of Filing involved approximately 40 applications in the

Forest Area and another 60 applications in the Rural Development Area. The vast majority of these applications involved the development of existing undersized lots; only five (in the Rural Development Areas of Hamilton, Galloway and Evesham Townships) proposed the creation of new “undersized” lots. By far the most activity occurred in two Atlantic County municipalities: Hamilton and Mullica Townships which together accounted for 73 percent of the applications received by the Commission. These applications proposed the deed restriction of approximately 900 acres (roughly 400 acres in the Rural Development Area and 500 acres in the Forest Area).

Pilot Programs

In 1996, the Commission amended the CMP to authorize the establishment of pilot programs as a means of testing whether or not alternative methods might achieve the goals and objectives which the requirements and standards in subchapters 5 and 6 of the CMP represent. Two specific pilot programs have been authorized to date and a third was recently proposed by the Commission. These programs are described in detail below:

?? *The Township of Galloway and City of Egg Harbor City Pilot Off-Site Clustering Program* - Adopted by the Commission in 1996, the intent of this pilot program was to determine whether the land conservation and protection goals of the CMP could be accomplished, and perhaps even advanced, by allowing more intensive development in a newly designated development corridor to occur if it were balanced by the permanent conservation of lands outside the corridor. The municipalities of Galloway Township and Egg Harbor City were selected as the location for the pilot program based on the fact that both contained existing Pinelands Town areas which could logically be extended into a new growth corridor and based on the location of an existing nonconforming use of significant size, the Renault Winery, within a short distance of the existing Pinelands Town areas as well as the designated sewer service area.

In order to implement the Township of Galloway and City of Egg Harbor City Pilot Off-Site Clustering Program, the two municipalities had to adopt appropriate amendments to their land use ordinances. The necessary ordinance amendments were certified by the Commission in 1997 and resulted in the redesignation of Pinelands management areas. A total of 350 acres were redesignated by the two municipalities, 90 from a Pinelands Forest Area to a Pinelands Town, 140 from an Agricultural Production Area to a Pinelands Town and 120 from an Agricultural Production Area to a Rural Development Area. The new Pinelands Town area essentially forms a corridor along Bremen Avenue and includes the only existing use of substantial size in the vicinity, the Renault Winery, a long-standing tourist facility which is located on the boundary between Galloway Township and Egg Harbor City. Galloway Township subsequently redesignated an additional 20 acres from the Forest Area to the Rural Development Area; this rezoning was certified by the Commission in the Fall of 2000.

The ordinances adopted by Galloway Township and Egg Harbor City require that all existing and proposed buildings and structures in the Pinelands Town portions of the redesignated area be served by sanitary sewer. In addition, the ordinances require the provision of complementary open space for all conditional uses in the redesignated area

at a rate of 1.9 acres of land for each acre developed for outdoor, intensive recreation use and at a rate of 0.24 acres of land for each 100 square feet of existing or proposed floor area devoted to a conditional use. The ordinances also establish Primary and Secondary Conservation Areas within which the required complementary open space must be located. These conservation areas consist of lands within the Pinelands Forest, Agricultural Production and Rural Development Areas; the Primary Conservation Areas include lands immediately adjacent to the redesignated Pinelands Town and Rural Development Area and total approximately 725 acres in size.

Thus far, 53,960 square feet of new non-residential development have been approved within the Pinelands Town portion of the area redesignated as part of the pilot program. A total of 280 acres have been permanently conserved as a result, with an additional 147 acres also deed restricted in anticipation of the next phase of the project (see Chapter 3). While not insignificant, it should be noted that this development and corresponding provision of permanent open space represents only a small percentage of what could potentially occur under the pilot program. The Commission estimated in 1996 that up to 596,000 square feet of non-residential space would be feasible within areas redesignated under the program and that there was the potential for permanent conservation of over 1,600 acres of land in the surrounding Forest and Agricultural Production Areas. These figures were based on an assumption that development would occur in the redesignated area at approximately the same intensity as that of the existing Renault Winery complex and also that all vacant lands in the redesignated area would be developed as planned developments or conditional uses.

The CMP requires that the Executive Director review the Township of Galloway and City of Egg Harbor City Pilot Off-Site Clustering Program and report to the Commission as to its implementation within three years of the certification of the implementing municipal ordinance amendments. Such a review was conducted in June of 2000. The Commission concluded that the pilot program had been successful in furthering the land conservation and protection goals of the CMP but that, given the relatively small amount of development that had actually been approved under the provisions of the program, it was premature to consider broadening the applicability of the program in the Pinelands. The Commission determined that the program should continue as currently structured, with a second review to be completed within six years of the Commission's approval of the pilot program.

?? *The Township of Tabernacle and Township of Pemberton Public Educational Facilities Pilot Program* - In July of 1999, the Commission adopted a set of amendments to the CMP relating to public educational facilities. These amendments addressed management area redesignations involving lands in more than one Pinelands municipality which were intended to facilitate the development of public education facilities. The amendments clarified the ability of Pinelands municipalities to make such changes in management area boundaries and explicitly set forth the standards which had to be met, including requirements for the purchase and redemption of PDCs as a means of offsetting the cumulative effect of the redesignations on the PDC Program. Based on these amendments, the Commission subsequently certified land use ordinance amendments

adopted by two Pinelands municipalities (Tabernacle and Pemberton Townships in Burlington County), which implemented Pinelands management area changes for purposes of accommodating the development of a new regional high school in Tabernacle Township. Although the United States Secretary of the Interior did approve the amendments, he also requested that the Commission adopt a number of revisions to N.J.A.C. 7:50-5.33 in an effort to restrict the scope of any future management area redesignations adopted pursuant to the standards in that section of the CMP.

In response to the Secretary's request, the Commission adopted amendments to the CMP in 2000 which repealed the public educational facility standards in N.J.A.C. 7:50-5.33 and established the Township of Tabernacle and Township of Pemberton Public Educational Facilities Pilot Program. The intent of this program was to restrict the applicability of the public educational facility standards previously set forth at N.J.A.C. 7:50-5.33 to the management area redesignations already approved in Tabernacle and Pemberton Townships and require full evaluation by the Commission according to specified criteria, as well as adoption of an additional amendment to the CMP, before the concept of intermunicipal rezonings could be extended to other municipalities or uses. N.J.A.C. 7:50-10.16 prescribes detailed procedures and requirements pursuant to which an evaluation of the new pilot program must be conducted by the Commission's Executive Director. An initial review of the program must be completed three years after completion of construction of the new high school in Tabernacle Township. The criteria against which the success of the pilot program is to be judged include consideration of the impacts of the high school on surrounding lands in Tabernacle Township, the compatibility of the high school with the existing character of Tabernacle's adjacent Pinelands Village, the disposition of lands in Tabernacle which were redesignated to the Regional Growth Area but not ultimately used by the high school and the impacts of the management area redesignations on the long-term viability of Pemberton Township's Agricultural Production Area. In addition, the extent to which lands have been permanently conserved in Pemberton Township through the purchase of easements and elsewhere in the Pinelands Area through the purchase of PDCs must be factored into the equation. Finally, in order for the pilot program to be deemed successful, the Executive Director will need to determine that the net effect of the program, when viewed in its entirety, is to further the goals and objectives of the Pinelands Protection Act, the Federal Act and the CMP. This last criterion represents an attempt to evaluate the impacts of the pilot program from a broader perspective and is of particular importance for the Commission to consider when determining whether or not the approach used in the pilot program is one which the Commission wishes to consider for other situations in the future.

Upon completion of the evaluation, the Executive Director will report his or her findings and recommendations to the Commission. This report must include an analysis of the potential for use of intermunicipal transfers for specified uses in defined situations throughout the Pinelands, as well as whether or not alternative techniques and processes exist or could be developed which might provide for the development of public educational facilities in a manner which better addresses the goals and objectives of the CMP and the Pinelands Protection Act. Should the Executive Director's evaluation of

the pilot program indicate that it has been successful, the Commission may consider expanding the program's applicability and the concept of intermunicipal transfer in general to other municipalities and uses.

While a full evaluation of the Township of Tabernacle and Township of Pemberton Public Educational Facilities Program is still several years away, one outcome can be reported now. Based on the requirements of the pilot program, the Lenape Regional High School District purchased and redeemed 59.25 PDCs, resulting in the permanent protection of 2,166 acres in the Preservation Area District of Pemberton and Little Egg Harbor Townships and the Agricultural Production Area of Tabernacle Township (see Chapter 3).

?? *The Pilot Program for Alternate Design Wastewater Treatment Systems* - In March of 2000, the Pinelands Commission formed the Ad Hoc Committee on Alternative Septic Systems to study and assess alternative technologies with nitrogen-reducing capabilities, and if appropriate, to develop a recommended regulatory framework that ensures their long-term performance. Based on the recommendations of this Committee (discussed in greater detail in Chapter 7), the Commission proposed rules to establish this third pilot program in December of 2001. The program, which is proposed to remain in place for a five-year period, would allow for the use of five technologies that have been demonstrated to be more effective in reducing nitrogen in wastewater than the two alternatives (RUCK and pressure dosed systems) permitted under current CMP standards. A series of stringent operation and maintenance safeguards would be required to ensure that substandard performance will be quickly detected and remedied, or result in suspension of additional installations of any problematic technology. Work on development of a long-term program would begin while the pilot program is underway. This two-phase approach will enable the Commission to take advantage of "lessons learned" during the pilot program, incorporate and/or coordinate with forthcoming NJDEP requirements for alternative on-site wastewater disposal technologies, and develop appropriate institutional arrangements at the local and state levels. These rules will be considered for adoption during the coming year (see Chapter 7).

Waiver/Transfer Amendments

In 1996, the Commission adopted a set of amendments to the CMP which provide a limited opportunity for the continued development of certain waiver projects beyond previously established deadlines. Specifically, these amendments provided for the extension of approvals for certain waiver projects for a period of ten years, provided that development rights from other lands in the Pinelands Area are transferred to the site of the waiver project. The development rights must be transferred from lands in the most conservation-oriented management areas of the Pinelands: the Preservation Area District, Special Agricultural Production Area or Forest Area. In addition, one of the parcels from which the rights are to be transferred must be of conservation value and consist of at least 500 contiguous acres. Lands involved in the transfer may be conveyed to the State, a local jurisdiction or non-profit conservation organization but, in any case, must be deed restricted to preclude further development (except for certain specified low-intensity uses). The amendments also limited the number of rights that may be transferred to any

particular site by indicating that the number of units approved for that site pursuant to the original waiver remains the maximum that may be developed. In other words, the proposed transfer of development rights may not be used as a means of increasing the amount of development associated with a waiver project beyond that which was previously approved by the Commission.

Subsequent to the Commission's adoption of these amendments, one transfer took place. The development rights to 3,576 acres of land in the Preservation Area District and Forest Area of Berkeley and Manchester Townships were "transferred" to the site of a partially completed waiver project in Southampton Township's Rural Development Area (see Chapter 3).

Assisted Living Facilities/Continuing Care Retirement Communities

In May of 2000, the Commission adopted a set of amendments to the CMP to address assisted living facilities and continuing care retirement communities, in recognition of the growing popularity and importance of these uses and in order to provide standards to govern their development in the Pinelands. Definitions for the two types of uses were added and the existing definition of "dwelling unit" was amended to make clear that all units in an assisted living facility and all units in a continuing care retirement community, other than those which are licensed as long term care beds in nursing facilities, are considered to be dwelling units, consistent with Federal law and recent court decisions. The amendments further specified that assisted living facilities and continuing care retirement communities are permitted in Pinelands Regional Growth Areas, Pinelands Villages and Pinelands Towns and that the normal residential density limitations and other standards of the CMP for each of these management areas continue to apply. The amendments further specified that PDC use will be required if a municipality elects to permit the uses in question at a density exceeding eight dwelling units per acre within the Regional Growth Area.

Guidelines for Management Area Changes

In February of 2001, the Commission adopted amendments to the CMP which incorporate a set of guidelines to be used by the Commission in reviewing municipal proposals for management area changes and making determinations as to whether certification of a proposed management area change pursuant to the conformance procedures in subchapter 3 of the CMP or the adoption of a formal amendment to the CMP would be the more appropriate means of accommodating a municipality's request. These amendments were adopted in response to a September 3, 1999 letter from the Secretary of the Interior in which the Commission was requested to develop criteria which could be used to determine when the Secretary's approval should be required for municipal land use ordinance amendments which implement changes to the Pinelands Land Capability Map.

The adopted amendments set forth a list of seven attributes which the Commission determined were generally indicative of a management area change that may warrant the adoption of an amendment to the CMP. Included on the list are: management area changes which create certain freestanding management areas or new Pinelands Villages; management area changes which are large enough to change the character of a municipality's Pinelands zoning plan, increase

development potential for an area which predominantly includes lands with environmental limitations, lands which are permanently protected or included in a defined Pinelands acquisition area or lands included in an Agricultural Development Area that has been identified by a County Agriculture Development Board, or decrease development potential for an area which predominantly includes lands not appropriate for such a decrease due to their land tenure and use patterns, community and environmental character, accessibility to infrastructure or role in the PDC Program; management area changes which have such a large cumulative or net effect that they substantially change the character of a municipality's overall Pinelands zoning plan; management area changes which could result in the establishment of a new precedent that represents a significant departure from past Commission policy and is expected to have region-wide implications; management area changes which are inconsistent with the goals and objectives for the relevant management areas set forth at N.J.A.C. 7:50-5.13; and, finally, management area changes which contemplate a result that is not reflected in the certification standards for municipal land use ordinances contained in N.J.A.C. 7:50-3.39(a).

Agricultural Resource Extraction

In August of 2001, the Commission revised and adopted standards and application requirements for agricultural resource extraction. The amendments define those resource extraction activities which are accessory to agricultural operations and clarify the circumstances under which soil may be excavated and removed from a farm without triggering the need for a development application to be filed with and reviewed by the Pinelands Commission. They were adopted in response to an increasing number of instances in which material was excavated and removed from a farm and where significant amounts of soil and sand were proposed to be removed and sold from a property in support of an agricultural use, even though questions existed as to whether the excavation and soil removal activities were truly necessary for the agricultural use. In response to these situations and the Commission's desire to standardize its approach to agricultural extraction activities, the New Jersey State Board of Agriculture created an Agricultural Excavation Task Force in 1999 to work with the Pinelands Commission to both better define agricultural exemptions and define those resource extraction activities which are accessory to an agricultural operation. The results of the Task Force's work and the Commission's experience in regulating the individual agricultural resource extraction activities are reflected in the adopted amendments.

Regional Growth Area Densities

In December of 2001, the Commission adopted a set of amendments which provides those municipalities with assigned Regional Growth Area densities of 3.0 or 3.5 units per developable acre an opportunity to reduce those densities to as low as 2.5 units per developable acre, if certain conditions are met. These conditions include a requirement that appropriate opportunities for the use of PDCs be provided and a requirement that municipalities provide to the Commission a description of those ongoing and future efforts, projects and other measures they intend to implement or recommend be implemented by other agencies to address needs and objectives related to infrastructure, utility service, recreation, conservation, economic development, housing and community development. The Commission anticipates that four

municipalities will adopt revised master plans and land use ordinances to implement the reduced density requirement in the coming year.

The Commission has also received a \$187,000 grant from the Geraldine R. Dodge Foundation to help two growth municipalities address critical community development and design issues. Pinelands growth towns have long expressed concerns about over development and its effect on community character and services. This grant will enable us to engage a nationally renowned planning and design firm to help two towns develop long term strategic visions and then craft creative plans and ordinance standards to achieve those visions. We expect that these ideas will be transferable to other developing municipalities throughout New Jersey.

AMENDMENT PETITIONS

Petitions for amendment of the CMP may be submitted to the Commission by any public agency, and, except in municipalities or counties with certified master plans and land use ordinances, any resident of the Pinelands Area or the owner of, or any person having a contractual interest in, any property in the Pinelands Area. The six amendment petitions submitted to the Commission between July 1991 and December 2001 were as follows:

- ?? *P. West et al* - Submitted to the Commission in 1991 by a group of property owners in Manchester Township, Ocean County, this petition requested the redesignation of approximately 75 acres from the Rural Development Area to the Regional Growth Area within the PNR, outside the state-designated Pinelands Area, to allow for an increased intensity of commercial development. Recommended for denial by Commission staff, the petition was withdrawn in November of 1991 prior to any formal action by the Commission, based on a belief that Manchester Township would ultimately be pursuing Commission approval of its master plan and land use ordinances as they applied to that area of the municipality located in the PNR, outside the Pinelands Area. Manchester Township, as reported elsewhere, has not yet requested such Commission approval.
- ?? *Robert Gardner* - In September of 1991, the Commission received a petition from Robert Gardner, the operator of a small resource extraction pit in Tabernacle Township. This petition requested an extension of the two-year duration imposed by the CMP on resource extraction permits issued by municipalities the Pinelands Area. After being informed by Commission staff that an alternate regulatory approach could be pursued with Tabernacle Township without the need for an amendment to the CMP, the petition was formally withdrawn in October of 1991.
- ?? *New Jersey Outdoor Advertising Association* - This petition, submitted to the Commission in the fall of 1993, requested amendments to the CMP's sign regulations to allow existing outdoor commercial advertising signs (billboards) in certain management areas to remain and, further, to allow for new outdoor advertising signs in Regional Growth Areas and Pinelands Towns if such existing signs in other management areas were removed. Almost simultaneously, the Commission proposed a set of amendments to the CMP which addressed the revisions requested by the petitioner. Those

amendments were adopted in September of 1994 and the petition was thereafter considered to have been withdrawn.

- ?? *Avalon Golf & Development, Inc.* - This petition, submitted to the Commission in July of 1994, requested that the Pinelands Area Jurisdiction Boundaries Map and the Official Map of the Pinelands be amended to conform with the petitioner's interpretation of the Pinelands National Reserve Boundary Map (which was adopted by Congress in P.L. 95-625, November 10, 1978) and to thereby exclude approximately 173 acres of land in Middle Township, Cape May County, from the PNR. The property in question was located within the PNR but outside the state-designated Pinelands Area. Review of the petition by Commission staff led to a conclusion that an alternative boundary line in the vicinity of the property would be identified which represented a more exact interpretation of the federal Pinelands map and followed identifiable features. As a result, the petition was approved with modifications by the Commission on November 4, 1994 and the amended boundary line was implemented through the Commission's adoption of amendments to the CMP, effective August 1995.
- ?? *Krischer/Goldstein* - Submitted to the Commission in December of 1996 by two property owners, this petition requested that the Pinelands Land Capability Map be amended to change the land use classification of approximately 185 acres in Berkeley Township, Ocean County. The petitioners requested that the lands in question be redesignated from a Pinelands Forest Area to a Pinelands Regional Growth Area. Review of the petition by Commission staff determined that no information had been submitted to document or even suggest that the current Forest Area designation of the property was inappropriate based on the criteria for designating management areas contained in the CMP. Denial of the petition was therefore recommended and the Commission proceeded to do so on February 14, 1997.
- ?? *New Jersey Builders Association* - Submitted in 2001, this petition requested revisions to the procedures followed by the Commission in its review of amendments to master plans and land use ordinances submitted by Pinelands municipalities that have had their master plans and ordinances certified by the Commission. Specifically, the petitioner requested (1) the publication of notices in the New Jersey Register whenever the Executive Director determines that a municipal master plan or ordinance amendment submitted to the Commission raises a substantial issue with respect to conformance with the CMP; (2) the provision of timely notice to interested parties of public hearings on such master plan or ordinance amendments; and (3) the timely distribution of all reports, correspondence and notice of scheduled meetings on such master plan or ordinance amendments. The petition was determined to be incomplete in August of 2001, pending receipt of a more detailed statement as to the conformity of the proposed amendment with the Pinelands Protection Act, the Federal Act and the CMP.

CHAPTER 2

PROJECT REVIEW

The CMP establishes procedures to ensure that the minimum standards of the Pinelands Protection Act are implemented and enforced. Through these procedures, the Commission exercises oversight responsibilities in municipal and county permitting decisions and has direct decision making authority in development proposed by public agencies and other types of development applications. Proposed development is reviewed to determine potential impacts upon the Pinelands environment including water quality, plants and animals, and historic and cultural resources. The compliance of a project with land use standards that govern the permissible location and intensity of development is also considered.

The staff's reviews are coordinated with the state and local agencies that have roles in the approval and permitting of development. These include the NJDEP, municipal planning and zoning boards, county health departments and municipal construction code officials. Over the past ten years, the Commission has continued to implement measures designed to streamline the review process and increase the participation of local agencies in the process.

While a significant volume of applications have been completed over the last two decades, expansion of existing and the identification of new streamlining measures will continue. The greater use of the Commission's Geographic Information System will better enable us to share information with municipalities, applicants and other interested parties.

COMPREHENSIVE MANAGEMENT PLAN AMENDMENTS

The Commission adopted amendments to the CMP that took effect in March 1992. Those amendments significantly altered the procedures for applications for Waivers of Strict Compliance. A Waiver of Strict Compliance is required for development that cannot meet all of the standards of the CMP. The Pinelands Protection Act requires that the Commission make two findings in order to grant a Waiver. The first finding is that there exists an extraordinary hardship or a compelling public need. The second finding is that the waiver, if granted, will not substantially impair the resources of the Pinelands and will be consistent with the purposes and provisions of the Federal Act and the Pinelands Protection Act. As discussed in greater detail below, the 1992 amendments simplified the waiver process for defined categories of proposed development that only need a waiver of one or more of the environmental standards contained in Subchapter 6 of the CMP, made it more difficult for other categories of development to qualify for a waiver, and also created the density transfer program for the Pinelands Forest and Rural Development Areas.

In response to federal legislation authorizing the use of federal funds for the acquisition of lands in the Pinelands that are considered to have a limited practical use and the state appropriation of the necessary matching funds, the Commission adopted rules for the acquisition of such properties in 1995. The new rules established the standards by which the NJDEP may acquire

parcels that are considered to have a limited practical use. These standards require, in part, that the parcel in question must have been denied a Waiver of Strict Compliance. While the overall effect of the 1992 amendments was to reduce the number of waiver applications, this was partially counterbalanced by a large number of waiver applications received from property owners seeking to qualify for the limited practical use program.

In 1995, the Commission adopted rules that provided for alternative local permitting programs in order to simplify the processing of development applications. Based upon these provisions, 18 municipalities have established programs under which a local review officer processes certain types of development applications on behalf of the Commission. In municipalities that have adopted ordinances creating a Local Review Officer program, the Commission staff provides input to the Local Review Officer in a cooperative permitting program. Under this program, a preliminary zoning permit is issued by the Local Review Officer and serves as the Certificate of Filing.

Following the appropriation of monies by the State for the purchase and retirement of PDCs, rules establishing the Special Pinelands Development Credit (PDC) Purchase Program became effective February 2000. These rules provided for the purchase and retirement of PDCs by the Pinelands Development Credit Bank (PDC Bank) and established the criteria for such purchases. These rules significantly increased the number of applications for Letters of Interpretation (LOI) concerning the allocation of PDCs to a particular parcel.

ACTIONS ON DEVELOPMENT APPLICATIONS

In the past ten years, the Commission has received a total of 14,635 applications, an average of 1,463 a year. The most applications received in any one year was 1,840 in 1991, the least was 1,237 applications in 1999. A total of 19,022 applications were received from 1980 until June 30, 1991, an average of 1,729 a year. However, this number is a reflection of the fact that in the first two years after the CMP fully took effect over 4,000 applications were received. Since that time, while the number of different types of applications has varied, the number of applications submitted to the Pinelands Commission has consistently remained around 1,500 applications a year, regardless of economic conditions. Of the applications received from July 1, 1991 to June 30, 2001, 10,275 development applications were completed and were issued Certificates of Filing, Certificates of Completeness, Notices of Filing, preliminary zoning permits, recreation permits, Reports on Applications for Public Development and letters of consistency taken pursuant to Memorandum of Agreement. These include development proposed by private entities and public agencies. Of the 10,275 completed applications, 2,507 (24.4%) were completed through streamlined permitting procedures. This includes 834 that were completed pursuant to streamlined procedures established by memoranda of agreement and 1,673 completed pursuant to the local review officer process. In addition, 1,098 applications for LOIs were completed. A total of 562 applications for Waivers of Strict Compliance were completed. An additional 1,044 submissions were determined not to require an application to the Pinelands Commission.

In addition to the completed applications, there are the applications that were received and reviewed, but were not completed. Upon receipt of an application, the Commission staff reviews the submitted information and issues a letter requesting any additional information that is necessary to complete the application. During the past ten years, the Commission staff issued 18,793 letters to applicants advising them that additional information was needed to complete an application. If requested information is not received in a reasonable period of time, the Commission closes these applications. These may be applications that are in the early stages of planning. Such applications may be reopened when the applicant is prepared to proceed. In other situations, applications are not completed when the applicants are advised that their proposals do not appear to comply with the standards of the CMP and local ordinances and are unlikely to receive the approvals that are ultimately needed. Rather than proceed through the application process, applicants may decide that they will not complete these applications.

Level of Decision Making on Development Applications

The Federal Act and the Pinelands Protection Act provided that the CMP would be implemented through coordinated efforts of local, State and Federal agencies. The Pinelands Protection Act gives the Commission the authority to review municipal and county approvals. While the CMP provisions implementing this provision may have been originally considered to be disruptive to the traditional process of local review of development, it has enabled the Commission to move toward a partnership relationship with local permitting agencies that would not have been possible if the Commission had been established as an independent permitting agency like the NJDEP.

Through the provisions for alternate permitting procedures that were adopted in 1995, many municipalities now have local review officers who have assumed a considerable amount of the review and decision-making in cooperation with the Commission. Local review officers are authorized to issue, on the Commission's behalf, Notices of Filing or Preliminary Zoning Permits that serve as Certificates of Filing. Under these alternate permitting procedures, 1,673 applications have been issued preliminary zoning permits or Notices of Filing by municipal local review officers. A total of 6,541 private development applications received Certificates of Filing or Completeness from the Commission under the standard permitting procedure. Over 20% of the private development applications were completed pursuant to the local review officer program.

Also of interest is the Commission's action on local approvals through its traditional oversight role. In the past ten years, the Commission received notice of 16,475 local approvals, of which 16,364 (99%) were allowed to take effect without being formally reviewed by the Pinelands Commission. A total of 1,200 local approvals (7% of the total local approvals that were received) were initially called up for review by the Pinelands Commission. Of these, only 54 local approvals (0.3%) were formally acted upon by the Commission. Of these, nine were approved by the Commission and 45 were denied. Most of the applications that were denied were proposed developments that had been abandoned by the applicant after receiving local approvals and the applicant did not attend the scheduled hearing. A total of 111 (0.7%) of the local approvals that were called up are still pending review by the Commission. Most of these applicants are trying to resolve the issues that were raised by the local approval. The remaining

1,035 local approvals that were initially called up for review by the Commission were allowed to take effect after the applicant provided additional information or revised plans to resolve the inconsistencies with the CMP. This procedure occurs relatively routinely as an applicant may request that a Certificate of Filing be issued so that they may proceed to the local planning board and address both the Commission's issues and the local issues in final revisions after the receipt of a conditional local approval. In the period from the adoption of the CMP to June 30, 1991, the Commission allowed 9,161 (99%) of the 9,235 local approvals of which it received notice to take effect. Of the total of 818 local approvals (9% of the total local approvals that were received) that were initially called up for review, only 74 (0.8%) were acted on by the Commission. The remaining 744 were allowed to take effect upon the applicant's demonstrating consistency by either revising the plans or submitting additional information.

During the past ten years the Commission developed ways to significantly streamline the review of septic and construction permits. Under the provisions of the Pinelands Protection Act, the Commission has 15 days after the issuance of a final local approval to determine whether to review that approval or allow it to take effect. This time period, along with the length of time it took to mail the permit to the Commission and for the Commission's response to be mailed back to the applicant, represented a significant delay for the applicant who was ready to proceed with construction. In order to eliminate this delay, the Commission set up a new process with all the health departments and construction code officials. Under this process, when the health department or the construction code official receives an application for a permit, it faxes a form to the Commission. While the local agency is reviewing the application, the Commission staff determines whether the proposed development needs to be reviewed by the Commission. If an issue is raised, the application is called up for review by the Commission. However, if no issue is raised by the proposed development, then the Commission staff informs the local permitting agency by fax that the permit can be issued. As a result, the applicant can proceed with the proposed development as soon as the permit is issued rather than waiting up to 15 days, plus mail time, after the permit was issued to start construction as occurred under the former procedure. The Commission's response to the local agency usually occurs prior to when the local agency is ready to issue its permit. As a result, the applicant experiences no delay due to the Commission's review of the septic or construction permit. Of the 16,475 local approvals reviewed by the Commission during the past ten years, 6,628 (40%) were reviewed utilizing the faxed permit procedure.

PRIVATE DEVELOPMENT

Management areas were identified in the CMP on the basis of natural, cultural and physical characteristics. The management areas were designed to redirect patterns of development, mostly residential and commercial, that had emerged in the Pinelands prior to the adoption of the CMP. This prior, uncontrolled development was generally thought to represent the most significant threat to the environmental integrity of the Pinelands. The CMP established the types and intensity of land use that may be permitted in the management areas (see Table 1.2 in Chapter 1 for a summary). The Preservation Area District and Forest Area, being mostly undeveloped, were intended to remain relatively undisturbed in order to protect the long-term ecological integrity of the region. Permitted uses in these areas are generally limited to low

intensity land uses that would have minimal impact upon the natural environment. Agricultural Production Areas were established in areas that were predominantly in active agricultural uses and in areas of prime agricultural soils. Land uses compatible with the maintenance of agriculture may be permitted in this management area. Special Agricultural Production Areas are discrete areas within the Preservation Area that are primarily used for berry agriculture. Land uses in these areas are limited to uses compatible with the maintenance of the berry agricultural uses of these areas. Land uses in the Rural Development Areas, Pinelands Villages and Towns, and Regional Growth Areas are consistent with gradually increasing levels of development. Lastly, the Military and Federal Installation Areas are federally owned lands where institutional activities compatible with the federal mission may occur.

The following tables demonstrate that the objectives for the management areas are being met. For example, over 71% of all residential units approved in the last ten years were located in the Regional Growth Areas which comprise about 8% of the Pinelands. Over 96% of all approved residential units were located in the management areas that were designated for development (Regional Growth Areas, Pinelands Villages, Pinelands Towns and Rural Development Areas) which comprise about 26% of the Pinelands Area. In contrast, of the total 16,354 approved residential units, only 40 units or 0.24% of the approved units were in the Preservation Area District, which comprises about 32% of the Pinelands Area. These include 15 units in designated Infill Areas which are small discrete areas of existing development suitable for limited infill development within the Preservation Area District.

A similar pattern of development can be seen in the location of approved commercial development. Industrial uses are included in this category. The Regional Growth Area accounted for 51% of the approved commercial uses. In combination, the Regional Growth Area, Pinelands Villages, Pinelands Towns and Rural Development Areas were the location of 87% of the approved commercial uses. In contrast, there were 22 non-residential uses (3%) approved in the Preservation Area District. Those uses were predominantly expansions of existing uses that predate the CMP.

Using the current data for the two reporting periods, the number of approved residential units over the past ten years (16,354) is significantly less than the number (23,262) during the preceding ten-year period. The percentage of approved residential units in the Regional Growth Area in the past ten years, 71.5%, was significantly higher than in the ten preceding years, 51.8%. The number of approved units in the more restrictive management areas dropped from 8% in the first ten years of the CMP to less than 4% during the past 10 years. These changes are primarily a result of increased infrastructure availability in Regional Growth Areas and the decrease in the number of approved waiver units.

Table 2.1
New Jersey Pinelands Commission
Residential, Residential/Commercial & Commercial Approvals
9/23/80 through 6/30/91

Management Area	% of Total Pinelands Area	Residential Units Approved¹	% of Total Residential Units Approved	Non-Residential Approvals¹	% of Total Non-Residential Approvals	# of Applications
Preservation Area District	32%	50	0.21%	11	1.73%	113
Infill Area ²	0.2%	16	0.07%	2	0.31%	43
Special Agricultural Production Area	4%	0	<.01%	0	0.00%	7
Forest Area	26%	1,391	5.98%	30	4.72%	549
Agricultural Production Area	7%	276	1.19%	52	8.18%	497
Rural Development Area	13%	6,918	29.74%	76	11.95%	1,064
Pinelands Village	3%	1,385	5.95%	43	6.76%	683
Pinelands Town	2%	1,177	5.06%	120	18.87%	641
Regional Growth Area	8%	12,049	51.8%	301	47.33%	2,332
Military/Federal Installation Area	5%	0	0.00%	1	0.16%	3
Totals	100%	23,262	100%	636	100%	5,932

¹These numbers are higher than those reported in the Second Progress Report on Plan Implementation because not all data had been updated on the Development Review Tracking System at the time the report was issued.

²Infill areas are within the Preservation Area District.

Table 2.2
New Jersey Pinelands Commission
Residential, Residential/Commercial & Commercial Approvals
7/01/91 through 6/30/01

Management Area	% of Total Pinelands Area	Residential Units Approved	% of Total Residential Units Approved	Non-Residential Approvals	% of Total Non-Residential Approvals	# of Applications
Preservation Area District	32%	25	0.15%	22	3.08%	72
Infill Area ¹	0.2%	15	0.09%	3	0.42%	17
Special Agricultural Production Area	4%	5	0.03%	1	0.14%	7
Forest Area	26%	365	2.23%	37	5.18%	421
Agricultural Production Area	7%	185	1.13%	27	3.78%	292
Rural Development Area	13%	2,225	13.61%	89	12.47%	764
Pinelands Village	3%	436	2.67%	39	5.46%	408
Pinelands Town	2%	1,403	8.58%	129	18.07%	532
Regional Growth Area	8%	11,695	71.51%	367	51.40%	4,2890
Military/Federal Installation Area	5%	0	0.00%	0	0.00%	1
TOTALS	100%	16,354	100%	714	100%	6,803

¹Infill areas are within the Preservation Area District

Table 2.3 shows residential activity by municipality. The ten most active municipalities account for 82% of the approved residential development in the past 10 years. The 10 most active municipalities during the first ten years accounted for 76% of the approved residential units during that time period. While the relative ranking of the municipalities has changed since the last ten-year reporting period, the list of most active municipalities remains very similar to the list for the last reporting period. In fact, there are only two new municipalities on the list - Stafford and Galloway Townships, which replaced Pemberton and Berkeley Townships. Stafford Township experienced a great increase in residential development within the Ocean Acres subdivision when sewers were extended to that portion of the Township. The increased development in Galloway Township was partially a result of the extension of sewers in the Pinehurst section of the Township. The significant increase in residential development in Egg Harbor Township also is a result of numerous extensions of sewer lines in that municipality.

**Table 2.3
Ten Most Active Municipalities For Residential Development**

9/23/80 - 6/30/91		7/1/91 - 6/30/01	
Municipality	Approved Units	Municipality	Approved Units
Hamilton Township	4,402	Egg Harbor Township	2,846
Evesham Township	3,800	Stafford Township	2,467
Barnegat Township	1,846	Hamilton Township	2,080
Egg Harbor Township	1,463	Monroe Township	1,469
Berkeley Township	1,411	Galloway Township	1,235
Hammonton Town	1,003	Evesham Township	765
Medford Township	935	Manchester Township	753
Pemberton Township	933	Medford Township	687
Monroe Township	918	Hammonton Town	609
Manchester Township	907	Barnegat Township	579

Pemberton Township was one of the 10 most active towns during the first ten years as a result of the extension of sewer lines to the Country Lakes section of the Township. With the exception of Evesham and Berkeley Townships, all of the other most active municipalities in both time periods have significant areas designated as Regional Growth Areas or Pinelands Towns. A large number of the approved units in Evesham Township were within the Kings Grant subdivision in a Rural Development Area. That development received a Waiver of Strict Compliance, since expired, that authorized the development of up to 4,500 residential dwelling units. Most of the units in that development received local approvals prior to 1991, resulting in the reduction in approved units in Evesham during the past 10 years. The 1,411 units in Berkeley Township during the first 10 years were all located in one subdivision in the Rural Development Area, which received a Waiver of Strict Compliance.

Table 2.4 shows non-residential development in the ten most active municipalities. Many of the municipalities that experienced the greatest amount of residential development also have seen the highest number of approved non-residential developments.

**Table 2.4
Ten Most Active Municipalities For Commercial Development**

9/23/80 - 6/30/91		7/1/91 - 6/30/01	
Municipality	Approved Applications	Municipality	Approved Applications
Hammonton Town	175	Hammonton Town	107
Egg Harbor Township	159	Hamilton Township	99
Medford Township	134	Egg Harbor Township	89
Winslow Township	114	Medford Township	79
Hamilton Township	113	Waterford Township	75
Monroe Township	76	Winslow Township	74
Pemberton Township	71	Pemberton Township	57
Galloway Township	63	Galloway Township	53
Waterford Township	50	Monroe Township	39
Manchester Township	40	Stafford Township	30

Forestry

Forestry is a longstanding enterprise in the Pinelands. Forestry activities have generally been concentrated in the less developed areas. Prior to June 30, 1991, a total of 106 private applications for forestry activities were completed with the Commission, an average of 9.6 annually. Between July 1, 1991 and June 30, 2001, a total of 186 private forestry applications were completed with the Commission, an average of 18.6 annually. This increase in applications is a result of the streamlined permitting process discussed in Chapter 4, an increased awareness by landowners of the benefits of properly managing the forest resources on their properties, and improved enforcement.

Recreational Activities

Recreational activities represent organized trail events such as enduros. These are typically run along routes using existing roads, trails and fire cuts located on both public and private lands. The events tend to occur in the more conservation-oriented management areas. A total of 91 recreation permits were issued in the past ten years. This represents an increase over the 74 permits that were issued in the previous ten years.

PUBLIC DEVELOPMENT

Public development projects represent a diverse group of activities. These are projects proposed by municipalities, counties, State agencies and Federal agencies. They range from infrastructure projects such as roads, bridges, sewer and water lines; to institutional uses such as schools, offices, hospitals and prisons; to recreational uses. Development within the military installations and the federal installation varies in accordance with the mission of the installation. As Table 2.5 indicates, the locations of approved public development projects are less concentrated than the private development activities. Even so, the largest percentage of approvals, 35%, were for projects located in the Regional Growth Areas. Of the 561 public development applications that were approved, 75% were located in Regional Growth Areas, Pinelands Villages, Pinelands Towns, Military and Federal Installations, and Rural Development Areas. These approvals are more widespread across the management areas than private development approvals because public projects include infrastructure maintenance and improvement projects. These can involve roads, bridges and culverts located throughout the Pinelands. Another factor is that a significant number of approvals have been granted for permitted development activities in state parks, forests and wildlife management areas that are primarily located in the more restrictive management areas. In addition, limited expansion of existing non-conforming public facilities is permitted in all management areas.

Table 2.5
Public Development Approvals
July 1, 1991 Through June 30, 2001

Management Area	# Approvals	Percentage
Preservation Area District	123	10.9%
Infill Area	1	0.1%
Special Agricultural Production Area	2	0.2%
Forest Area	96	8.5%
Agricultural Production Area	58	5.1%
Rural Development Area	147	13.0%
Pinelands Village	96	8.5%
Pinelands Town	107	9.5%
Regional Growth Area	393	34.7%
Military/Federal Installation Area	108	9.5%
Total Public Applications	1,131	100%

WAIVERS OF STRICT COMPLIANCE

The Pinelands Protection Act authorized the Commission to waive strict compliance with any standard of the CMP upon a finding that the waiver was necessary to alleviate an extraordinary

hardship or to satisfy a compelling public need. The Act required that any such waiver must be consistent with the purposes of the Act and the Federal Act, and must not result in substantial impairment of the resources of the Pinelands.

The CMP contains standards and criteria for the evaluation of waivers. When the CMP was first adopted, it contained three different ways that an applicant could demonstrate extraordinary hardship. One of these was based on final subdivision approvals that were granted prior to 1979 if the development could comply with all the environmental standards contained in Subchapter 6. A total of 758 residential units received waiver approvals under this provision of the CMP prior to its being repealed in 1985. Expenditures made in reliance on local approvals received prior to 1979 were the second basis for establishing extraordinary hardship. A total of 11,866 residential units were approved under this provision of the CMP prior to its being repealed in 1987. The third basis of establishing extraordinary hardship was for the applicant to demonstrate that the property did not have a beneficial use unless one or more of the provisions of the CMP were waived. A total of 999 residential units were approved under this provision of the CMP prior to its being significantly amended by the 1992 amendments.

The amendments to the waiver rules in 1992 were adopted by the Commission in response to the large number of waiver units being approved on undersized lots in the more restrictive management areas and the difficult process applicants had to go through to qualify for a waiver. Those changes, with subsequent amendments, defined 12 categories of developments that are presumed to have an extraordinary hardship if only a waiver of one or more of the environmental standards in Subchapter 6 is required. Nine of the categories are for the development of individual single-family dwellings. One of the categories involves development of either an individual single-family dwelling or a permitted commercial use in a designated Infill Area. The other two categories of development are agricultural commercial establishments and agricultural employee housing that are accessory to an existing agricultural use. The rules also added a definition of specific situations that would result in a substantial impairment of the resources of the Pinelands. In order to balance the environmental impact of the granting of waivers, the amendments required the redemption of PDCs for waivers from the standards contained in subchapter 6 of the CMP. This results in the permanent protection of land in the Preservation Area District and the two Agricultural Production Areas.

Related amendments to the CMP that were adopted in 1992 created the density transfer program for the Forest and Rural Development Areas. Through this program, municipalities adopted ordinances to permit the development of lots that do not comply with the minimum lot size requirements contained in the zoning ordinances. These undersized lots may only be developed if other land within the same zone is acquired and preserved so that the overall parcel size is equal to the density required by the ordinance. This program was expected to reduce the number of waivers granted for lots in the Forest and Rural Development Areas and provide landowners with greater options for use of their property.

Table 2.6 shows the number of waivers approved in each management area before and after the 1992 amendments. The chart distinguishes among the types of waiver approvals that were originally included in the CMP. By comparing the no beneficial use waiver approvals that were granted under the rules that existed prior to 1992 to the waivers that have been approved under

those amendments, it is possible to determine the effects of the 1992 amendments. The total number of approved residential units was significantly lower under the 1992 amendments. A total of 139 residential units, an average of 15 units per year, have been approved through waivers in the period from 1992 to June 30, 2001 pursuant to the 1992 amendments. This compares to a total of 999 waiver units, an average of 90 units per year, approved under the no beneficial use hardship provision that existed prior to 1992. The greatest number of approved units in the period since 1992 were located in the Regional Growth Area. These units represent 31% of the total number of approved waiver units. In combination, the Regional Growth Area, Pinelands Villages and Pinelands Towns were the locations of 50% of the waiver units that were approved. As intended by the 1992 amendments, there has been a significant reduction in the number of units approved in the Forest and Rural Development Areas. A total of 54 units, an average of 5 units a year, in these two management areas have been approved under the current regulations. This is in contrast to the approvals granted under the prior rules. A total of 463 units, an average of 42 units annually, were approved in these two management areas under the prior no beneficial use standard. More significantly, most of the units approved in these management areas under the prior regulations were on undersized lots while all of the waiver approvals under the current regulations in these management areas are on conforming lots.

There were only 13 non-residential waiver approvals since 1992. Twelve of these were waivers that were approved based upon a compelling public need. Nine waivers were for activities proposed as part of hazardous waste cleanups. The remainder of the compelling public need waivers were for airport safety improvements and railroad maintenance activities. There was one non-residential waiver approved for agricultural employee housing based upon the extraordinary hardship provisions of the CMP. The non-residential waiver approvals were spread throughout the management areas.

**Table 2.6
Waiver Approvals**

Management Area	Pre 3/92 Waivers						Post 3/92 Waivers		
	Approvals Received Prior To 1979			No Beneficial Use Waivers			Residential Units	Non-Residential	
	Residential Units		Non-Residential	Residential Units		Non-Residential			
	Approved	Denied ¹		Approved	Denied ¹		Approved	Denied ¹	
Preservation Area District	30	38	4	21	0	3	4	0	7
Infill Area	0	0	0	1	0	0	1		0
Special Agricultural Production Area	0	0	0	0	0	0	2	0	0
Forest Area	1365	407	1	193	79	0	14	0	1
Agricultural Production Area	756	1827	3	109	36	0	9	0	2

Management Area	Pre 3/92 Waivers						Post 3/92 Waivers		
	Approvals Received Prior To 1979			No Beneficial Use Waivers					Non-Residential
	Residential Units		Non-Residential	Residential Units		Non-Residential			
	Approved	Denied ¹		Approved	Denied ¹		Approved	Denied ¹	
Rural Development Area	9445	5203	1	270	18	2	40	0	2
Pinelands Village	18	3	0	88	3	2	20	0	1
Pinelands Town	0	0	0	39	2	1	6	0	0
Regional Growth Area	1010	26	2	278	23	11	43	0	0
Military/Federal Installation Area	0	0	0	0	0	0	0	0	1
All Management Areas	0	0	0	0	0	0	0	0	2
Totals	12624	7504	11	999	161	19	139	0	14

¹Units requested but not approved in approved waiver applications

Table 2.7 addresses waiver denials before and after the 1992 CMP amendments that affected waiver applications. As previously discussed, the 1992 amendments made it more difficult for a parcel in the Forest Area or the Rural Development Area to qualify for a waiver. The number of waiver denials has also been affected by the rules regarding the limited practical use program that became effective in 1995. Those rules established the standards by which the Commission determines whether a property is eligible to be purchased by the NJDEP under the limited practical use program. One of the standards is that a parcel must have been denied a Waiver of Strict Compliance. As a result, an application for a Waiver has become the first step in qualifying a parcel for acquisition under the limited practical use program.

A total of 712 residential units have been denied pursuant to the 1992 amendments. A total of 431 of those units were proposed in one application for development of a subdivision in the Forest Area in Berkeley Township. Almost all of the remaining 281 denied units were proposed in applications for individual single-family dwellings. The largest number of those 281 units, 133 or 47%, were proposed to be located in the Forest Area. The next largest number of waiver denials under the 1992 amendments were for units proposed in the Rural Development Area. In combination, the Forest Area, Rural Development Area and Preservation Area District were the locations of 83% of the units for which waivers of strict compliance were denied, excluding the 431-unit application that was denied.

**Table 2.7
Waiver Denials**

Management Area	Pre 3/92 Waiver		Post 3/92 Waiver	
	Residential Units	Non-Residential	Residential Units	Non-Residential
Preservation Area District	37	3	17	0
Infill Area	2	0	1	0
Special Agricultural Production Area	0	0	1	0
Forest Area	132	4	564	1
Agricultural Production Area	58	7	8	0
Rural Development Area	222	6	72	3
Pinelands Village	22	2	9	1
Pinelands Town	8	1	13	0
Regional Growth Area	561	6	27	0
Totals	1,042	29	712	5

LETTERS OF INTERPRETATION

A total of 1098 LOIs were issued between July 1, 1991 and June 30, 2001. This is in contrast to the 691 LOIs issued between the adoption of the CMP and June 30, 1991. The most LOIs issued in any one year was 195 in 1994 and the least was ten in 1987. This significant increase in the number of LOIs is a reflection of increased interest by property owners in the Preservation Area District, Agricultural Production Area and Special Agricultural Production Area in determining the number of PDCs allocated to their land. This is a reflection of the increased price in the private market place for credits because of increased demand, the Special PDC Purchase Program, and the formula adopted by the State Agriculture Development Committee (SADC) pursuant to the Garden State Preservation Trust Act for valuing development easements on farms in the Pinelands Area which are allocated credits. The marketing efforts of the PDC Bank significantly contributed to the increased demand for credits by developers. Of the 1098 LOIs issued in the past ten years, 1062 or 97% were for determinations of credit allocations. About 20% of all LOIs issued concerning PDC allocations during the past 10 years were issued after January 2001, when the SADC proposed its rules implementing the formula for calculating the development value of farms in Agricultural and Special Agricultural Production Areas in the Pinelands. Of the 691 LOIs issued in the initial ten years of the CMP, only 419 or 61% were for determinations of credit allocations.

The primary type of other LOIs that are currently issued concern the location of wetlands and the size of the required wetlands buffer for a particular proposed development. When the CMP was first adopted, numerous requests for LOIs were received concerning the location of management area lines on a particular parcel and whether a particular use was permitted in a given

management area. Once a municipality came into conformance, the Commission no longer issued these kinds of LOIs in that municipality because it was the zoning districts and permitted uses established by the certified ordinance that governed. During the initial years after the adoption of the CMP, numerous LOIs were issued concerning how several of the environmental standards contained in Subchapter 6 of the CMP applied to a particular parcel. Most of these letters concerned wetlands, wetlands buffers, cultural resources, and threatened and endangered species.

CHAPTER 3

PERMANENT LAND PROTECTION

The permanent protection of ecological, cultural and agricultural lands was a fundamental principle in the establishment of the Pinelands protection program through clear mandates in the New Jersey Pinelands Protection Act of 1979. To achieve these mandates, a multi-faceted approach of land use regulations, a transferable development rights program, and public acquisition was implemented.

The framework of the CMP, adopted in 1980, embraces those mandates through the creation of management areas with special values and associated regulations that restrict uses and development in those areas that have these land values. To further address specific resources that may not be protected through these designations, the original CMP highlighted the importance of continued public acquisition efforts and established a transferable development rights program – known as the PDC Program.

The PDC Program has both sending and receiving areas. Preservation, Agricultural and Special Agricultural management areas are sending areas where properties are entitled to credits that can either be purchased by the State at \$6,000 per right (four rights equal a credit), or purchased privately to be used for density bonuses in Regional Growth Areas. Once severed, sending properties where the credits originated are permanently protected through deed restriction. This is the most successful regional development transfer program in the nation, preserving almost 27,750 acres of land through June of 2001. While the Commission continues to implement measures to ensure an active private market, it is clear that the purchase of credits by the State is also critical to the protection of some of the Pinelands' most important resources. Through June 2001, the State's Special PDC Purchase Program has resulted in the purchase of 499 rights and the protection of 3,130 acres of land.

Over the past year, the Commission has expanded its application of the Special PDC Purchase Program to complement other agencies' preservation efforts in the Pinelands. In the spring of 2001, the Commission signed an agreement with the SADC to use its resources in combination with the Special PDC Purchase Program to permanently protect agricultural uses in the Pinelands through the Farmland Preservation Program. This has resulted in a commitment of \$4 million from the PDC Program to protect more than 3,000 acres of land. In addition, joint efforts with the NJDEP have been ongoing to identify sites of important ecological value and apply state funding from the PDC Program to complement Green Acres acquisition efforts.

The original CMP highlighted the importance of land acquisition by recommending that 100,000 acres of state owned recreational lands be added to the then 240,000 existing acres. Since 1980, funds have been appropriated from state and federal sources for the purchase of many properties within the Pinelands. Early acquisition efforts centered almost entirely on NJDEP purchases of explicitly targeted "502" areas, for which a great deal more detail is presented later in the chapter.

Acquisition efforts continue to be an important component of the permanent land protection strategy within the Pinelands, both on the part of the NJDEP and other entities. It is also important to consider what else is being done at the local, state, and federal levels to promote permanent land protection, as well as by non-governmental organizations active in the Pinelands.

PINELANDS ACQUISITION PROGRAMS

Pinelands “502” Acquisition Program

The Pinelands designation by the federal government as a “National Reserve” makes it uniquely eligible for federal land acquisition funding. Section 502 of the 1978 National Parks and Recreation Act and the New Jersey Pinelands Protection Act of 1979 direct the Pinelands Commission to identify management techniques aimed at protecting Pinelands’ resources, among them a list of land acquisition targets. Once identified, these target areas are then passed on to the NJDEP as recommendations for acquisition through fee simple purchase or other means.

The Pinelands Acquisition Program as originally established designated eight targets, known as “502” areas (after the federal statute section), which have guided the State’s acquisition efforts and expenditures. These target areas were selected based on their strategic ecological value related to watershed protection, wildlife corridors, and contiguity with existing State-owned land. Section 502 of the federal Pinelands legislation had authorized \$25.7 million in matching funding for acquisitions in these original target areas through 1991. The largest allocation was for the Cedar Creek Watershed with over \$8 million in funding. About \$9 million in authorized federal funding has yet to be appropriated.

By the time the last Plan review occurred in 1991, two additional target areas had been added. Since 1991, the State has expanded the existing Pinelands acquisition targets within four sub-areas, three of which are grouped under the heading of Southern Forest Region, with the fourth being continued work within the Wading River Ecosystem.

Table 3.1 details the federally funded acquisitions that have been made by the State within the 502 target areas. The first 7 listed (along with minor additions to State lands) were the originally funded projects, while Makepeace Lake and East Plains/Stafford Forge were added prior to the 1991 review. Work in the Wading River Ecosystem and Southern Forest Region has occurred primarily during the past 10 years.

More specifically, 9,080 acres have been funded and acquired in 502 target areas since June 1991. Of this, 4,649 acres were within the Wading River and Southern Forest project areas, with another 2,235 acres accounted for by Makepeace Lake and East Plains/Stafford Forge. In the original eight target areas, only 2,196 additional acres were acquired during the period from June 1991 to June 2001, representing fewer than 5% of the acreage now owned in those areas.

The total number of acres acquired through June 30, 2001 under the 502 Funding Program stands at 70,398, about 13% of which was purchased within the past ten years.

Table 3.1
Pinelands "502" Acquisition Projects
Acres Acquired

Section "502" Funded Pinelands Projects	Original Project Acreage	Acres Acquired As Of Aug. 1983	Acres Acquired Between Aug. 1983 & June 1991	Acres Acquired Between June 1991 & June 2001	Total Acres Acquired As Of June 2001
Cedar Creek Watershed	15,400	7,904	6,384	545	14,833
West Plains / Greenwood Forest	9,000	8,808	199	0	9,007
Oswego River	10,250	5,709	2,966	94	8,769
Bass River	8,500	536	4,748	1,557	6,841
Upper Wading River Watershed	3,400	0	3,142	0	3,142
Goose Ponds at Tabernacle	909	909	0	0	909
Friendship Bogs	2,171	2,171	0	0	2,171
Makepeace Lake	8,000	N/A	7,689	58	7,747
East Plains / Stafford Forge	8,400	N/A	5,305	2,177	7,482
Minor Additions to State Lands	960	579	504	0	1,083
Wading River Ecosystem	16,693	N/A	0	322	322
Southern Forest Region:					
Manumuskin / Tuckahoe River Basin	12,800	N/A	3,765	100	3,865
Peaslee Addition	1,289	N/A	0	1,289	1,289
Belleplain Extensions	5,363	N/A	0	2,938	2,938
PINELANDS "502" TOTAL	103,135	26,616	34,702	9,080	70,398

Based on data provided by the NJDEP.

The environmental attributes of some of the pre-1991 additions to the 502 list were outlined in this chapter's previous incarnation (1991) and deserve to be reviewed here. All of these target areas have seen activity within the past ten years.

Makepeace Lake is located in northern Atlantic County and represents an important component of the emerging north-south corridor linking the large State forests of Burlington County with the Forest Area of the southern Pinelands. Toward this end, the Belleplain extensions and Peaslee additions will serve to fortify the Southern Forest Region, which forms the crucial southern bulkhead of the Pinelands system. The Manumuskin and Tuckahoe River basins, also within this area, encompass one of the more pristine and contiguous waterway systems in the Pinelands.

The East Plains/Stafford Forge project area traverses critical headwaters and habitats for many of the Pinelands signature species. Similarly, the Wading River Ecosystem, which includes several smaller project areas, encompasses a variety of important Pinelands ecosystems as well as unique landscape features such as Apple Pie Hill and the Pine Plains.

At the inception of the Pinelands Acquisition Program in 1980 it was expected that \$60.5 million in State and federal funds would be allocated for 502 acquisitions. In light of the expanded scope of the State's acquisition efforts, specifically the Garden State Preservation Trust, it is likely that

the numbers will shortly exceed that estimate in the Pinelands as a whole. Table 3.2 documents the use of 502 funds for the given acquisition targets both as of and since the June 1991 review.

Expenditures totaled more than \$7.5 million for the period June 1991 through June 2001. Most of the expense was associated with the East Plains/Stafford Forge project and the Southern Forest Region, as these acquisitions accounted for nearly 80% of the total. Since its inception, the Pinelands 502 Acquisition Program has incurred nearly \$52.9 million in expenditures.

In 2001, the NJDEP and the Pinelands Commission began to explore additional acquisition priorities and the use of 502 funds to help finance them. These efforts will continue in 2002.

Table 3.2
Pinelands “502” Acquisition Projects
Total Expenditures

Section "502" Funded Pinelands Projects	Original Project Acreage	Anticipated Total Cost As Of June 1991	Total Expenditures Prior to June 1991	Total Expenditures Between June 1991 & June 2001	Total Expenditures As Of June 2001
Cedar Creek Watershed	15,400	\$15,085,891	\$12,743,409	\$474,666	\$13,218,075
West Plains / Greenwood Forest	9,000	\$3,949,920	\$3,922,830	\$0	\$3,922,830
Oswego River	10,250	\$4,790,016	\$5,526,828	\$38,917	\$5,565,745
Bass River	8,500	\$4,181,154	\$2,879,101	\$1,001,757	\$3,880,858
Upper Wading River Watershed	3,400	\$2,100,000	\$1,524,879	\$0	\$1,524,879
Goose Ponds at Tabernacle	909	\$1,126,299	\$998,790	\$0	\$998,790
Friendship Bogs	2,171	\$1,174,500	\$1,164,595	\$0	\$1,164,595
Makepeace Lake	8,000	\$6,900,000	\$6,886,476	\$42,040	\$6,928,516
East Plains / Stafford Forge	8,400	\$8,300,000	\$5,901,462	\$1,819,353	\$7,720,815
Minor Additions to State Lands	960	\$1,200,000	\$504,356	\$0	\$504,356
Wading River Ecosystem	16,693	\$14,000,000	\$0	\$0	\$0
Southern Forest Region:					
Manumuskin / Tuckahoe River Basin	12,800	\$10,600,000	\$3,306,070	\$147,411	\$3,453,481
Peaslee Addition	1,289	N/A	\$0	\$1,390,118	\$1,390,118
Belleplain Extensions	5,363	\$4,400,000	\$0	\$2,616,727	\$2,616,727
Pinelands Total	103,135	\$77,807,780	\$45,358,796	\$7,530,989	\$52,889,785

Based on data provided by the NJDEP.

Other Pinelands Acquisition Projects

As part of its mandate to permanently protect land statewide the NJDEP has expanded its acquisition efforts within the Pinelands to properties adjacent to, nearby, and removed from the designated 502 areas. Table 3.3 lists the various acquisition projects undertaken by the NJDEP along with the acres purchased and associated costs. All of the activity presented here has occurred since the last review in 1991.

Some 32 active project areas are listed in Table 3.3, with total acquisitions of 34,787 acres at a cost of nearly \$32.3 million. Eight of the project areas are associated with the existing 502 target areas, with Makepeace Lake and the Wading River Ecosystem involved most heavily. The larger

acquisitions outside the 502 areas include 3,126 acres in Lebanon State Forest and 2,617 acres in Wharton State Forest. Despite the proximity of these two areas, project sites are in fact spread throughout the Pinelands, from Winslow in the west to Dennis Creek in the south, the Forked River Mountains in the east and Pemberton Lake to the north.

The Pinelands Commission is working with DEP to help stress the importance of ecological attributes when prioritizing possible acquisition targets. Among the factors considered when evaluating environmentally a prospective target are proximity to the headwaters of major Pinelands waterways, presence of threatened or endangered species, and watershed boundaries and characteristics.

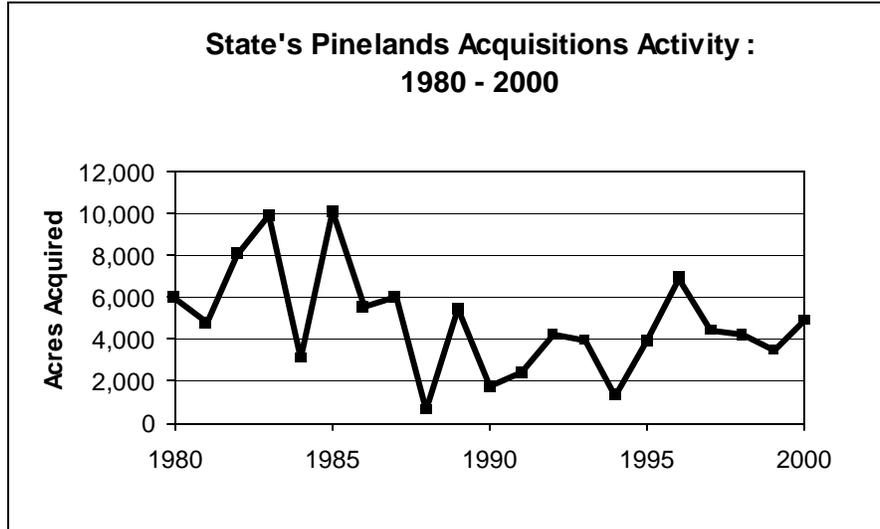
Table 3.3
Other State Pinelands Acquisition Projects
Acres Acquired and Expenditures

	Total Acres Acquired Between June 1991 & June 2001	Total Expenditures Between June 1991 & June 2001
Pinelands Acquisition Projects		
Allens Woods, Natural Lands Trust Preserve	118	\$70,000
Bass River	453	\$462,586
Belleplain State Forest	583	\$657,718
Cedar Creek Watershed	64	\$33,338
Clarks Landing Preserve	45	\$2,500
Colliers Mills WMA	194	\$574,058
Crossley Preserve	120	\$50,000
Dennis Creek WMA	207	\$136,850
East Plains / Stafford Forge	627	\$349,497
Elwood WMA	1,633	\$765,000
Forked River Mountains	725	\$500,000
Gibson Creek WMA	435	\$405,000
Great Egg Harbor WMA	2,212	\$2,274,544
Green Bank State Forest	198	\$180,000
Hamilton Preserve	772	\$790,000
Hammonton Creek WMA	200	\$265,000
J & M Statewide	2,507	\$1,628,415
Lebanon State Forest	3,126	\$2,225,447
Makepeace Lake	3,376	\$3,040,230
Pancoast Preserve	264	\$255,500
Peaslee WMA	1,145	\$1,378,718
Pemberton Lake	82	\$100,000
Pinelands National Reserve	1,101	\$875,504
Manumuskin / Tuckahoe River Basin	1,149	\$1,122,262
Belleplain Extensions	1,790	\$1,287,052
Tuckahoe WMA	254	\$298,000
Upper Wading River Watershed	109	\$82,539
Urban-Natural Areas	74	\$56,600

Pinelands Acquisition Projects	Total Acres Acquired Between June 1991 & June 2001	Total Expenditures Between June 1991 & June 2001
Wading River Ecosystem	5,907	\$2,331,041
West Plains / Greenwood Forest	398	\$187,107
Wharton State Forest	2,617	\$6,794,669
White Oak WMA	1,684	\$2,047,750
Winslow WMA	618	\$1,057,000
Pinelands Total	34,787	\$32,283,925

Figure 3.1 shows the trends in total of the NJDEP Pinelands acquisitions since 1980.

**Figure 3.1
Trends In Pinelands Acquisition Activity**



Based on data from the NJDEP

Large Litigation Settlements

Over the past 10 years there have been instances where negotiations during litigation with landowners or developers have resulted in the sale of land, either to the State or non-governmental organizations, for the purpose of environmental stewardship. The settlements that were borne of these negotiations were successful in securing significant tracts of land for permanent protection. Several examples of this sort are discussed below. (Note: these acreages are in addition to the State's inventory as detailed above.)

In 1996, a large landowner in Ocean County petitioned the Pinelands Commission to redesignate 185 acres of the Forest Area in Berkeley Township to Regional Growth Area for the purposes of development. The Commission both denied this request and an application for a waiver of strict compliance to allow development of 431 homes on the parcel. The landowner proceeded to file

state and federal lawsuits against the Commission. Following court decisions against him, the landowner entered into negotiations with the Commission. These negotiations resulted in a settlement under which the landowner agreed to sell the 185-acre site as well as an additional 905 acres within the Forest Area and Preservation Area District of Berkeley and Lacey Townships to the NJDEP and Ocean County for the purpose of permanent protection.

In response to the discovery of critical timber rattlesnake habitat in a partially constructed development in Burlington County known as The Sanctuary, negotiations with the landowner resulted, in 2000, in plans for the acquisition of various properties in Evesham and Medford Townships. The land to be purchased is located within Forest and Rural Development Areas in Evesham Township, and in Forest and Rural Development Areas and the Preservation Area District in Medford Township. A total of approximately 1,000 acres is to be transferred through this settlement to the NJDEP for permanent land protection.

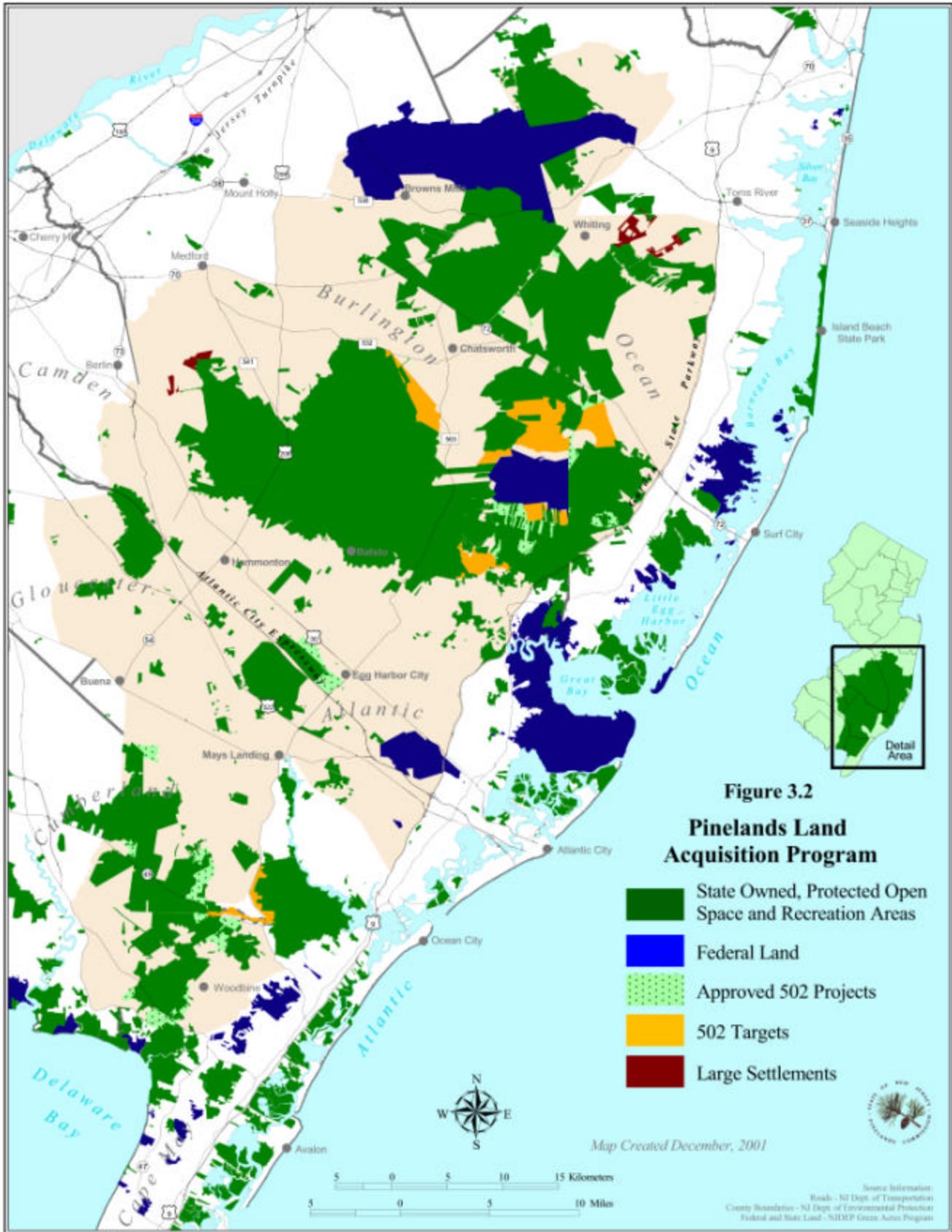
Negotiations with Berkeley Township and Ocean County resulted in a 1997 settlement whereby 650 acres of municipally owned land in the Township's Forest Area and Preservation Area District, adjacent to the land preserved through the waiver transfer program discussed below, would be conveyed to The Nature Conservancy, a non-governmental conservation organization, for stewardship. This action was taken in conjunction with the Township's construction of an emergency access road through the Forest Area to serve senior citizen developments located outside the Pinelands Area.

Figure 3.2 illustrates the Pinelands land acquisition programs discussed above.

Limited Practical Use Program

Introduction

The federal Pinelands legislation authorizes matching federal grants to the State of New Jersey to acquire properties in the PNR which are found, among other things, to have "limited practical use." Although the CMP guarantees that every property in the Pinelands will have economic use, the need to minimize environmental harm results in some properties having more limited uses than others. It is these properties, which have more limited uses, that this program is intended to address.



To date, the federal government and the State of New Jersey have each appropriated \$1 million to support the Limited Practical Use program. Up to an additional \$5 million is available for this program through the Green Acres, Farmland and Historic Preservation, and Blue Acres Bond Act of 1995.

General Program Description

The Pinelands Commission and the NJDEP Green Acres office cooperated to develop the LPU program in 1995 and will continue to cooperate in its implementation.

In general, the Commission and the NJDEP have sought to utilize a rather limited amount of funding to purchase properties from among those which have already largely met the criteria specified in the federal Pinelands legislation. This requirement, that the landowners have exhausted remedies which would permit greater use and development of the property in question, is met in one of two ways: 1) after an application for a waiver of strict compliance is made by the property owner and a decision to deny the waiver is made by the Pinelands Commission; or 2) after an application for a waiver of strict compliance is made by the property owner and, although an approval was granted, the approval granted a transferable development right to the property rather than authorizing development of the property. "Waivers", or deviations from CMP regulations, are generally sought by property owners when they believe that their properties cannot be reasonably used or developed in accordance with Pinelands zoning and development requirements. Waivers can be approved only under extraordinary circumstances.

All properties that became the subject of a waiver denial decision since August 9, 1980 have been initially screened by Pinelands and NJDEP staff to determine their potential eligibility for acquisition. This same process is followed for the few properties that were allocated a transferable development right through a waiver approval. Those properties found to be eligible after the initial screening have been contacted to determine final eligibility. All new waiver denial applications are processed in the same manner. Once these recommendations are approved by the Pinelands Commission and NJDEP Green Acres, the NJDEP will pursue the actual acquisitions. In no case have property owners been forced to sell their property - the program is purely voluntary and property owners may elect not to participate.

The federal Pinelands legislation establishes two additional criteria that are used to evaluate properties. First, the property must have limited practical use and second, the landowner cannot own 50 acres or more of land anywhere in the PNR.

Each candidate property is judged against the standards that serve to define limited practical use. These standards exclude properties with homes or substantial principal non-residential uses, and properties that due to zoning and other changes, may qualify for the development of a home or substantial principal non-residential use. Contiguous lands in common ownership that are considered by the Commission to be part of the total original parcel are also examined to determine whether they meet the standards.

The owners of those properties that pass through this first screening are then contacted to determine if the ownership test is met, an evaluation that includes factors such as continuous ownership, fee ownership, partnership and corporate considerations, and the 50-acre test.

Program Activity

From the inception of the LPU program (closing date for receipt of initial questionnaires was August 1995) through June 30, 2001, 18 rounds were conducted. Of 427 questionnaires received, 367 were deemed eligible, representing over 1,335 acres of land distributed among 34 municipalities. Those municipalities having the greatest amount of activity (number of eligible properties) were Buena Vista Township (57), Hamilton Township (55), and Maurice River Township (45). The acreage eligible by municipality ranged from 0.17 in Berlin Township to 391.67 in Hamilton Township. In terms of activity by management area, the Forest Area contained the most eligible land at nearly 795 acres while the Special Agricultural Production Area had only a single application of 7.76 acres.

As of June 30, 2001, the NJDEP Green Acres Program has purchased 226 parcels (980.70 acres at a cost of \$1,353,430) and another 17 parcels (20.23 acres costing \$45,175) are being processed. Approximately 31% of the properties deemed eligible by the Commission have either withdrawn from the program, failed to respond or have rejected the offer.

Highlights of the LPU program can be found in Tables 3.4a – 3.6.

Table 3.4a
Limited Practical Use Land Acquisition Program
Eligible Parcels By Round

A. ELIGIBLE PARCELS BY ROUND										
Number Of Eligible Parcels	Year in Which Eligibility Determination Was Made by Pinelands Commission									
	1995 Rnd 1	1996 Rnd 2	1996 Rnd 3	1996 Rnd 4	1997 Rnd 5	1997 Rnd 6	1997 Rnd 7	1998 Rnd 8	1998 Rnd 9	1998 Rnd 10
	134	29	21	25	21	8	17	11	21	11
Number Of Eligible Parcels	1999 Rnd 11	1999 Rnd 12	1999 Rnd 13	2000 Rnd 14	2000 Rnd 15	2000 Rnd 16	2001 Rnd 17	2001 Rnd 18	Total Parcels	
	13	10	10	2	7	9	2	16	367	

Table 3.4b
Limited Practical Use Land Acquisition Program
Eligible Acres By Management Area

B. ELIGIBLE ACRES BY MANAGEMENT AREA										
Management Area	1995 Rnd 1	1996 Rnd 2	1996 Rnd 3	1996 Rnd 4	1997 Rnd 5	1997 Rnd 6	1997 Rnd 7	1998 Rnd 8	1998 Rnd 9	1998 Rnd 10
PAD	39.47	19.67	4.62	13.22					8.00	9.36
FA	235.84	30.47	119.74	95.90	107.85	0.41	20.78	19.32	29.31	7.67
APA	44.86	21.00		4.28						
SAPA				7.76						
RDA	110.71	26.80	5.03	19.83	1.07	48.39	2.74	2.12	3.33	6.81
RGA	40.44	4.94	5.00	1.17					12.86	
PV	17.71	12.18	0.83							
PT	1.54	3.80		0.63	1.40		1.11	0.34	0.15	
Total	490.57	118.86	135.22	142.79	110.32	48.80	24.63	21.78	53.65	23.84
Management Area	1999 Rnd 11	1999 Rnd 12	1999 Rnd 13	2000 Rnd 14	2000 Rnd 15	2000 Rnd 16	2001 Rnd 17	2001 Rnd 18		Total Acres
PAD		4.14	0.32				0.40	0.27		99.47
FA	23.92	1.36	13.78	0.29	50.99	28.02		9.30		794.95
APA								9.71		79.85
SAPA										7.76
RDA	12.18	3.77	1.29	0.52		0.50		0.26		245.35
RGA		1.30	3.36		0.36	1.00	0.18	0.51		71.12
PV										30.72
PT			0.48							9.45
Total	36.10	10.57	19.23	0.81	51.35	29.52	0.58	20.05		1,338.67

Table 3.5
Limited Practical Use Land Acquisition Program
Eligible Acres By Municipality

Rounds 1 through 18 Eligible applications from December 8, 1995 through June 7, 2001 (dates represent Pinelands Commission meeting dates)		
Municipality	# Acres	Number of Eligible Questionnaires
Bargegat Township	44.36	5
Bass River Township	15.23	2
Berlin Township	0.17	1
Buena Vista Township	121.65	57
Corbin City	6.40	1
Dennis Township	13.44	1
Egg Harbor City	0.82	2
Egg Harbor Township	15.70	14
Estell Manor City	39.33	10
Evesham Township	14.76	7
Folsom Borough	2.92	7
Franklin Township	20.50	1
Galloway Township	39.07	7
Hamilton Township	391.67	55
Hammonton Town	0.53	1
Jackson Township	53.17	5
Lacey Township	1.57	7
Lakehurst Borough	5.20	2
Manchester Township	21.53	14
Maurice River Township	37.06	45
Medford Township	12.24	9
Monroe Township	3.62	4
Mullica Township	161.74	33
Pemberton Township	44.38	33
Shamong Township	44.11	8
Southampton Township	83.19	11
Stafford Township	3.95	2
Tabernacle Township	18.95	1
Upper Township	41.48	5
Washington Township	13.22	1
Waterford Township	43.20	10
Weymouth Township	10.00	2
Woodbine Borough	0.34	1
Woodland Township	13.17	3
Pinelands Total	1,338.67	367

Table 3.6
Limited Practical Use Acquisition Program
Acquisitions By Green Acres

County	Properties	Properties Acquired			Properties in Process		
	Acquired & In Progress ¹	# Parcels	Acres ²	Expenditures ³	# Parcels	Acres	Expenditures
Atlantic	125	120	644.28	\$769,490	5	17.09	\$21,000
Burlington	39	38	133.55	\$199,060	1	0.18	\$2,000
Camden	1	1	4.28	\$5,120	0	0.00	\$0
Cape May	3	3	19.54	\$34,840	0	0.00	\$0
Cumberland	45	38	37.00	\$92,930	7	2.51	\$14,000
Gloucester	5	5	24.36	\$30,500	0	0.00	\$0
Ocean	25	21	117.69	\$221,490	4	0.45	\$8,175
TOTAL	243	226	980.70	\$1,353,430	17	20.23	\$45,175

¹31% of eligible participants have withdrawn, rejected the offer or failed to respond.

²Average parcel size is 4.33 acres.

³Average price per acre is \$1,380.

Based on data provided by the NJDEP.

Contract With Cape May County MUA and The Nature Conservancy

Non-governmental organizations have become important players in the permanent protection of land through acquisition, both in the Pinelands and elsewhere in New Jersey and the nation. A recent trend that has greatly enhanced the ability of these groups to preserve land through acquisition is the growth of cooperative efforts between these organizations and governmental bodies. An example of one such arrangement involving the Pinelands Commission is discussed below.

In 1999, the Commission reached an agreement with the Cape May County Municipal Utilities Authority (CMCMUA) that provides \$2.25 million (\$1,989,315 of which was in hand through the end of 2001) for permanent protection of environmentally sensitive lands in the Pinelands. These funds are transferred incrementally from the CMCMUA to the Commission to be held in an account until their use is approved. One stipulation of the agreement is that at least \$180,000 of this funding must be spent on acquisition projects in Cape May County. The Nature Conservancy was contracted to administer the program. The Nature Conservancy will purchase land itself and will make \$400,000 available to local governments or to other non-profit organizations. What makes this agreement even more effective as a land protection tool is that The Nature Conservancy will participate as a matching partner, supplementing the \$1.8 million in CMCMUA acquisition funds with it's own contributions.

A number of acquisitions have already occurred that will begin to satisfy the specifications of this contract. In 2000, a 10.5-acre site in Maurice River Township's Eldora Nature Preserve was acquired and retained by The Conservancy, while a 169-acre site in Buena Vista Township's Peaslee Wildlife Management Area was purchased and transferred to the NJDEP. In addition, several acquisitions are currently being finalized by The Nature Conservancy.

PINELANDS DEVELOPMENT CREDIT PROGRAM

Background

The CMP established the PDC Program to: 1) encourage a shift of development away from active farmland and environmentally sensitive regions; and 2) provide a way for landowners in these areas to benefit from increased land values in Regional Growth Areas. The program allocated transferable development rights called Pinelands Development Credits (PDCs) to property owners in the Preservation Area District, Special Agricultural Production Area, and Agricultural Production Area as a supplemental use of property. The credits, each of which equals four transferable residential development rights ("rights"), can be purchased for use in the Regional Growth Area to increase the densities of housing being constructed there. PDCs may also be used in association with the approval of waivers of strict compliance and certain municipal variances on properties outside of the Regional Growth Area. More recently, PDCs can be purchased and retired by the State through the "Special Pinelands Development Credit (PDC) Purchase Program."

Allocation And Use Potential

PDCs are allocated to properties on the basis of land characteristics. For example, uplands in the Preservation Area District receive an allocation of one credit for every 39 acres. In the Agricultural Production Area and Special Agricultural Production Area, all uplands and areas of active agriculture, including berry agricultural bogs and fields, are allocated two credits per 39 acres. Properties approved for resource extraction, but as yet not mined, also receive two credits per 39 acres. Wetlands not in agricultural use are generally allocated 0.2 credits per 39 acres, a ratio based on the comparative sale prices of uplands and wetlands. Finally, those who owned lots at least 0.1 acre in size as of February 7, 1979, are allocated at least 0.25 PDCs if the property is vacant and not in common ownership with contiguous land, though this provision was somewhat limited by an amendment to the CMP in February of 2000.

The CMP, as well as the 1983 and 1991 CMP Progress Reports, contains estimates of the number of PDCs that might eventually be allocated. Since then, ongoing estimates have been revised to account for the fact that State land acquisition in the Preservation Area District has progressed, thereby reducing the amount of eligible land, and municipalities have adjusted management area boundaries during the conformance process, thereby affecting areas which may be eligible for PDC allocation. The net result of these adjustments is that approximately 18,000 rights (4,500 PDCs) are available for allocation. Of these, roughly 1,500 rights have been redeemed for development and 499 purchased and retired through the Special PDC Purchase Program.

PDCs are formally allocated when a landowner receives a Letter of Interpretation (LOI) from the Commission establishing the exact number of PDCs attributed to a particular property. Upon formal allocation, a landowner may “sever” PDCs from the land by recording a conservation or an agricultural easement with the PDC Bank to permanently protect the property. As of June 30, 2001, approximately 8,300 rights (2,075 PDCs) have been formally allocated and, of these, about 3,300 rights (825 PDCs) have been severed (see Tables 3.7 and 3.8).

Table 3.7
Pinelands Development Credit Program
Allocation of Rights By Year

Year	Number of Allocations ¹	Number of Rights Allocated ³
1981	7	332
1982	25	662
1983	37	518
1984	33	215
1985	22	135
1986	13	30
1987	8	41
1988	8	38
1989	81	388
1990	152	714
1991	77	269
1992	17	34
1993	127	246
1994	133	503
1995	27	119
1996	30	195
1997	65	242
1998	81	199
1999	16	77
2000	168	1,618
2001 ²	161	1,740
TOTAL	1,288	8,315

¹The numbers are equivalent to the number of LOIs issued by the Pinelands Commission relative to the PDC allocations. Revised LOIs are not counted, except where increased allocations result in an increase in acres. The numbers for years 1981 through 1990 differ from those in the 1991 report due to amended LOIs and inconsistent data management.

²Figures shown for 2001 are through the first six months.

³In cases where property owners received revised PDC allocations, the adjusted allocation is reflected in the total number of rights for the year in which the original allocation was made, except where increased allocations result from an increase in acres, which are reflected in the year that the revised allocation occurred.

Source: Cross-referenced LAN file summary, Executive Director's LOI summary record and 1981-2001 LOIs.

Once the PDCs are severed from the “sending property,” they may be sold to a private buyer or to the PDC Bank. As of June 30, 2001, the PDC Bank owned 101 rights (see Table 3.8). In addition, the PDC Bank has transferred 44 rights to other agencies at no cost, including four rights to the NJDEP (two in 1994 and two more in 1996 for compelling public need developments), and 40 rights to B’ nai B’rith for an affordable housing project in Chesilhurst Borough in 1998. Another 2,365 rights have been purchased privately.

**Table 3.8
Pinelands Development Credit Program
Number of Rights Severed From Land**

Year of Severance	Not Purchased to Date	Purchased through 6/30/01 by:				Total Severed
		NJ PDC Bank ¹	Special PDC Purchase Program ²	Private	Other ³	
1982	0	0		40		40
1983	0	33		119		152
1984	0	38		69		107
1985	0	0		29		29
1986	0	0		18		18
1987	0	0		9		9
1988	0	0		2		2
1989	0	0		4		4
1990	33	0		232		265
1991	16	0		235		251
1992	18	0		195		213
1993	0	0		4		4
1994	25	0		221	2	248
1995	31	19		85		135
1996	2	4		71	2	79
1997	34	7		212		253
1998	0	0		167	40	207
1999	3	0		142		145
2000	14	0	498	286		798
2001 ⁴	103	0	1	225		329
TOTAL	279	101	499	2,365	44	3,288

¹Purchases by the PDC Bank include those received through Burlington County Credit Exchange.

²All rights purchased by the PDC Bank through Special PDC Purchase Program have been retired.

³Other includes 44 rights transferred by PDC Bank at no cost to other agencies that are no longer available.

⁴Figures shown for 2001 are through the first six months.

Source: Pinelands Development Credit Bank

Changes In Receiving Areas

Just as the areas to which PDCs are allocated have been affected by changing conditions, so too have the areas capable of receiving the transferred credits. During the initial conformance process, much of which occurred prior to the issuance of the 1991 report, municipalities adjusted

growth area boundaries, altering the areas available to accept credits. Also during conformance, some municipalities demonstrated that certain already subdivided or developed areas were incapable of receiving credits. Zoning ordinances often included commercial and industrial districts in growth areas resulting in a reduction of residentially zoned land. Furthermore, amendments adopted by the Commission in 1994 allowed municipalities to increase or decrease their assigned Regional Growth Area densities by as much as 10 percent. Two municipalities (Egg Harbor and Hamilton Townships) took advantage of this increased flexibility and implemented 10% reductions in density in 2001. Larger decreases in density in some Regional Growth Areas may occur as a result of additional CMP amendments adopted by the Commission in December 2001.

In order to reduce the long-term, cumulative impacts of granting waivers, amendments to the CMP waiver program that took effect in March 1992 (and subsequent amendments effective October 1996 and July 2000) created a PDC obligation for such projects. Through the year 2000, approximately 150 rights were required to be used in association with projects which received waiver approvals from the Commission. The March 1992 CMP amendments also provided for PDC use when certain municipal density variances were granted for projects in Pinelands Villages and Towns and for cultural housing on lots of less than 3.2 acres in size. Coupled with already existing CMP requirements for the purchase of PDCs in association with density and use variances in the Regional Growth Area, approximately 600 additional rights were required to be used through the year 2000 for projects receiving municipal variances. While these waiver and variance provisions have slightly increased redemption opportunities above those traditionally related to bonus densities in the Regional Growth Area, the net effect of all these changes is that the PDC receiving potential of the Pinelands Regional Growth Area has not been dramatically altered.

It is estimated that 39,000 rights (9,750 PDCs) could be ultimately used in the Regional Growth Areas. This estimate accounts for zoning opportunities in 23 Regional Growth Area municipalities whose land use ordinances have been certified by the Pinelands Commission, and in South Toms River Borough whose ordinances have not yet received Commission approval. Not reflected are additional opportunities for PDC use created when municipalities grant density and use variances in Regional Growth Areas; this includes two towns (Medford Lakes Borough and Dover Township) that were not required to zone for normal PDC use due to the small amount of vacant land in their Regional Growth Areas.

Based upon allocation and redemption estimates, more than twice as many opportunities to use PDCs exist than there are PDCs available for use. This is not to suggest, however, that there will be a shortage of PDCs. Zoning ordinances do not require that properties be developed at maximum permitted densities, and some land in growth areas has already been developed at lower densities.

Overall Program Activity

Although the PDC Program was first established in 1981, the 1991 Plan review report noted that activity was relatively slow until property owners became familiar with the program,

municipalities became certified, and the PDC Bank was established and began operations in 1988.

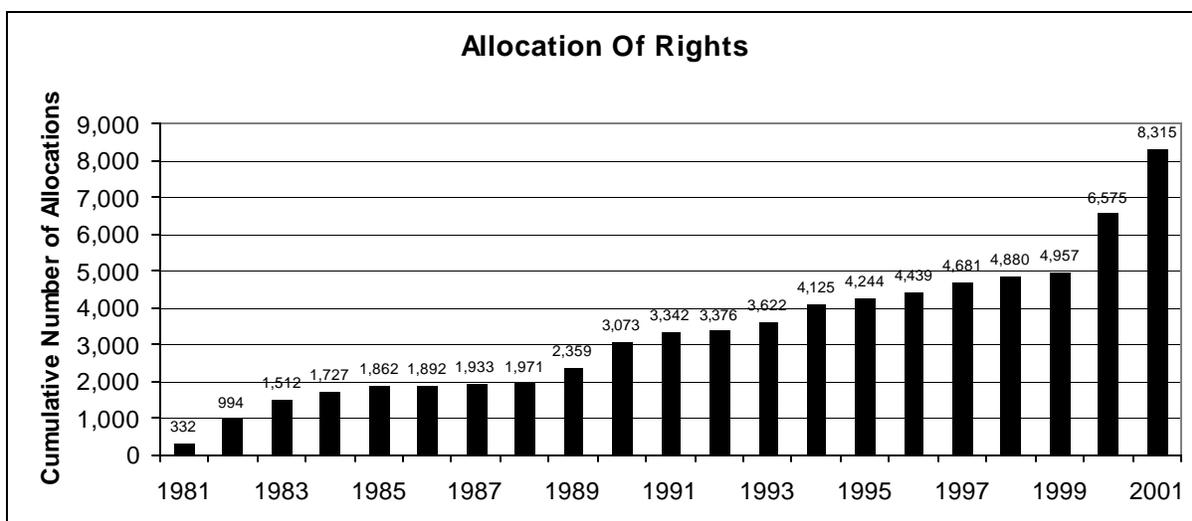
A number of factors have contributed to an increased level of program activity over the past few years. These include an active outreach program on the part of the Commission and the PDC Bank, a higher private sales price for PDCs (\$7,236/right at the November 1999 PDC Bank auction followed by an even higher price of \$9,000/right on the private market in October 2000), the establishment of the Special PDC Purchase Program (whereby the PDC Bank purchases and retires credits with State funds at a price of \$6,000 per right) and actions by the SADC to promote its Farmland Preservation Program in the Pinelands.

The following sections highlight PDC activity in a variety of key performance areas through June 30, 2001. For ease in comparing the PDC Program to other TDR programs, much of the PDC statistical data is expressed in terms of development “rights.” Note that in the Pinelands each PDC (development credit) entitles its owner to develop four residential units; thus one development “right” is equivalent to 1/4 PDC.

“Sending Area” Activity

Table 3.7 and Figure 3.3 show yearly and cumulative allocations of PDCs. Through June 30, 2001, there have been approximately 8,300 rights allocated as a result of roughly 1,400 LOIs. Table 3.8 shows the number of rights severed. The number of severances has increased dramatically since the inception of the Special PDC Purchase Program in 1999. As of June 30, 2001, a total of 3,288 rights had been severed.

**Figure 3.3
Pinelands Development Credit Program**



Figures shown for 2001 are through the first six months.

The severances have resulted in the permanent protection of approximately 27,750 acres as of June 30, 2001. Of this total, some 13,747 acres are located in the Preservation Area District,

7,149 acres in the Agricultural Production Area, and 6,852 acres in the Special Agricultural Production Area. (An additional 2.23 acres in the Regional Growth Area is also permanently preserved as a result of a court settlement.) Almost 22,000 acres of the 27,750 (79%) was protected in the last ten years. Table 3.9 shows the location by municipality of these protected acres.

Table 3.9
Pinelands Development Credit Program
Acres Permanently Preserved Through June 30, 2001

	PAD	APA	SAPA	RG ¹	TOTAL ACRES
Barneget Township	41				41
Bass River Township	1,082				1,082
Buena Borough		215			215
Buena Vista Township		116			116
Estell Manor City		686			686
Franklin Township		676			676
Galloway Township	28	269			297
Hamilton Township		87			87
Town of Hammonton		696			696
Lacey Township	3,708				3,708
Little Egg Harbor Township	1,459				1,459
Manchester Township	334				334
Medford Township	291				291
Monroe Township		283		1	283
Mullica Township	5	14			19
Pemberton Township	1,043	1,041	141	2	2,226
Shamong Township	44	93			137
Southampton Township		2,182			2,182
Tabernacle Township	346	355	776		1,477
City of Vineland		166			166
Washington Township	1,150				1,150
Waterford Township		272			272
Winslow Township		1			1
Woodland Township	4,216		5,935		10,151
Total Acres²	13,747	7,149	6,852	2	27,750

¹Assignment of PDCs to RGA resulting from court settlements.

²Numbers may not total due to rounding.

Source: Pinelands Development Credit Bank

“Receiving Area” Activity

PDC Program activity can also be measured by examining the number of projects using PDCs in the receiving areas. The projects incorporated in Table 3.10 are those that are actively being pursued by developers, have received preliminary or final approvals, or have been constructed

within the last ten years. Additional projects in the early stages of planning are not included in these tabulations as too many unknowns exist that might affect ultimate PDC use. “Old” inactive projects are likewise not included. The 1991 Report showed 132 projects using 1,897 rights. As of June 30, 2001, the total number of active, approved, or built projects had increased to 414 with the potential use of 3,099 rights.

Table 3.10 shows the level of PDC project activity by municipality. In the 1991 report, Monroe and Medford Townships exhibited the highest overall level of PDC project activity; in 2001, Egg Harbor Township (84 projects) and Monroe Township (68 projects) top the list. In terms of the number of rights to be used, Hamilton Township is highest with 28 projects requiring 727 rights. The seemingly high number of rights to be used in Tabernacle Township (15 projects requiring 283 rights) is largely a reflection of one major project, the Public Educational Facilities Pilot Program. More particularly described in Chapter 1, this program resulted in the Lenape School District’s purchase of 237 development rights (59.25 PDCs). 2,166 acres of land was permanently protected through this pilot PDC Program.

Table 3.11 compares the number of PDC units approved in the two reporting periods to the total dwelling units approved in the Regional Growth Area. For the period through June 1991, roughly 4.7% of approved residential development involved PDC use. However, this rate has jumped to over 14% in the past ten years. This finding supports the trend reported in the 1991 report that predicted increased PDC use associated with residential development.

Figure 3.4 shows the number of new projects each year since 1990, ranging from a low of 25 projects in 2000 to a high of 68 in 1995. During the first half of 2001, 28 new projects were reported.

PDC Transactions

As Table 3.8 indicates, 3,009 of the 3,288 rights severed as of June 30, 2001 have been sold by “sending area” property owners. Developers have made initial purchases totaling 2,365 rights; a figure that is increased, after inclusion of re-sales, to the 2,616 purchased rights reported in Figure 3.5. Table 3.12 disaggregates developer purchases so that an assessment can be made as to the role public and private parties are playing. This table also shows the average purchase price for the 2,181 rights purchased through June 30, 2001 in the private market. Both the mean and the median (which is less sensitive to extremely high or low purchase prices) are included for comparative purposes.

The average purchase price as reported in the 1991 Progress Report was nearly \$3,500 per right in early 1991. This has increased to approximately \$7,000 in early 2001. The most recent sales have ranged from \$7,500 up to \$9,000.

Special PDC Purchase Program

The Special PDC Purchase Program was created by CMP rule and legislative funding in 1999 to increase the amount of agricultural and undeveloped forested lands permanently protected in the Preservation Area District, Agricultural Production and Special Agricultural Production

management areas, and, coincidentally, reducing growth pressure in the Regional Growth Areas. In fiscal year 2000, the Pinelands Commission, the PDC Bank, and the NJDEP established a joint program authorizing the PDC Bank to purchase rights at a fixed, formula-based price of \$5,562.50 per right. Once purchased by the PDC Bank, these rights would be retired and would not be resold or used for density bonuses in the growth areas, or, in fact, for any other development activities authorized in the CMP. After receiving an appropriation of \$3 million in FY 2000, \$7 million was made available in FY2001, and up to \$13 million more may be made available in FY 2002 for this program. An increase in price to \$6,000 per right in April 2001 has helped promote interest; however, as prices offered on the private market have risen to as much as \$9,000 per right, the direct Special PDC Purchase Program has struggled to remain competitive. A total of 499 rights (124.75 PDCs) had been purchased through the Special PDC Purchase Program as of June 30, 2001, permanently preserving some 3,130 acres.

Table 3.10
Pinelands Development Credit Program
Development Projects Using PDCs
1981 Through June 30, 2001

Municipality	Total Number of Projects ¹	Total Number of Rights to be Used ²	Municipality	Total Number of Projects ¹	Total Number of Rights to be Used ²
Barnegat Township	2	19	Medford Township	39	94
Berkeley Township	2	4	Monroe Township	68	565
Buena Vista Township	5	7	Mullica Township	5	7
Chesilhurst Borough	5	44	New Hanover Township	1	2
Dennis Township	3	3	Ocean Township	1	1
Egg Harbor City	1	10	Pemberton Township	19	83
Egg Harbor Township	84	569	Shamong Township	11	25
Estell Manor City	4	5	South Toms River Borough	1	1
Evesham Township	4	7	Southampton Township	6	11
Franklin Township	2	3	Stafford Township	12	12
Galloway Township	11	331	Tabernacle Township	15	283
Hamilton Township	28	727	Upper Township	6	10
Hammonton Town	9	10	Waterford Township	24	102
Jackson Township	3	4	Weymouth Township	3	4
Lacey Township	4	6	Winslow Township	23	126
Lakehurst Borough	1	1	Woodbine Borough	1	2
Manchester Township	2	4	Woodland Township	2	3
Maurice River Township	2	2	Linear Development	1	6
Medford Lakes Borough	4	6			
Total Projects³		414			
Total Rights to be Used		3,099			

¹Includes only those projects which are seeking local approvals, are in receipt of local approvals, or are built are reported here.

²One transferable development right equals one-quarter PDC.

³Total number of projects reflects an ongoing review and identification of abandoned and closed projects, projects no longer requiring PDCs and projects having no activity for the previous five years.

Table 3.11
Pinelands Development Credit Program
PDC Use In Relation To Development Approvals In Regional Growth Areas

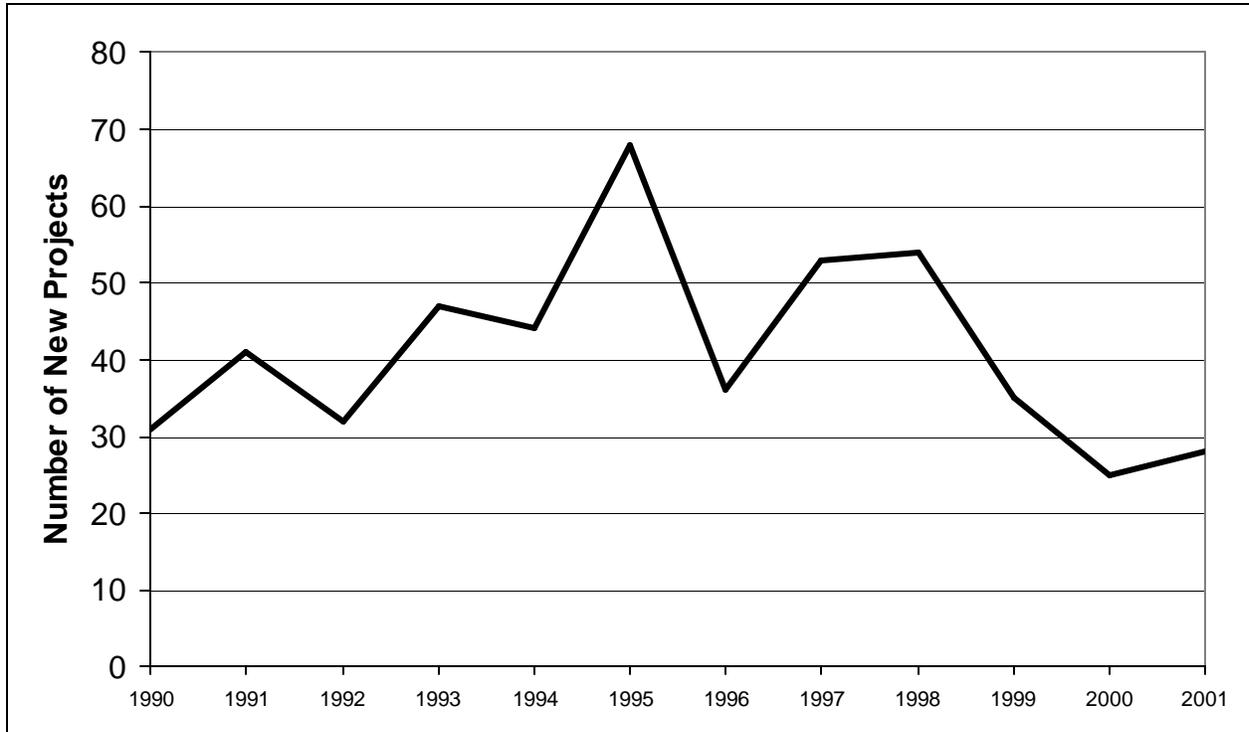
Period ¹	TOTALS DURING THE PERIOD			CUMULATIVE		
	Residential Units Approved ²	PDC Rights Approved for Use	Percentage of Residential Units Using PDC Rights	Residential Units Approved ²	PDC Rights Approved for Use	Percentage of Residential Units Using PDC Rights
09/23/80-06/30/91	12,049	562	4.7%	12,049	562	4.7%
07/01/91-06/30/01	11,695	1,683	14.4%	23,744	2,245	9.4%

¹Date of approval represents the first date on which an application received an approval.

²Represents the total number of approved residential units for applications that received their first approval during the time period indicated.

Source: LAN Summary report; equals the total number of rights included in built and approved projects.

Figure 3.4
Pinelands Development Credit Program
New Development Projects Using PDCs



Prior to 1/1/90, these statistics were not maintained on a calendar year basis
 Figures shown for 2001 are through the first six months.

Table 3.12
Pinelands Development Credit Program
Number of Rights Purchased By Developers

Year of Purchase	Total Rights Purchased by Developers ¹	Burlo Exchange Sales Rights ²	NJ PDC Bank Sales to Private Parties Rights	Private Sales		
				Private Rights ³	Mean Sales Price Rights ⁴	Median Sales Price Rights ⁴
1984	9	9	0	0	N/A	N/A
1985	8	5	0	3	\$2,250	\$2,250
1986	45	26	0	19	\$2,006	\$2,083
1987	38	38	0	0	N/A	N/A
1988	86	86	0	0	N/A	N/A
1989	83	79	0	4	\$3,375	\$2,875
1990	31	0	1	30	\$4,199	\$4,125
1991	110	0	0	110	\$3,567	\$3,437
1992	47	0	0	47	\$3,511	\$3,500
1993	38	0	0	38	\$3,544	\$3,125
1994	154	0	0	154	\$3,518	\$3,500
1995	156	0	0	156	\$3,220	\$3,206
1996	118	0	0	118	\$3,504	\$3,500
1997	133	0	0	133	\$3,470	\$3,500
1998	423	0	0	423	\$3,327	\$3,400
1999	320	0	2	318	\$3,960	\$3,750
2000	502	0	139	363	\$6,833	\$6,500
2001 ⁵	315	0	50	265	\$7,006	\$7,000
Total	2,616	243	192	2,181		

¹In order to reflect influence of the re-sale market, includes secondary as well as first-time sales, resulting in some multiple counting of rights.

²Burlington County Pinelands Development Credit Exchange is authorized to purchase PDCs, but has not purchased any since 1987. All of these have since been sold; the PDC Bank began operations in 1988.

³Does not include sales/transfers involving special circumstances such as gifts within families or sales including land.

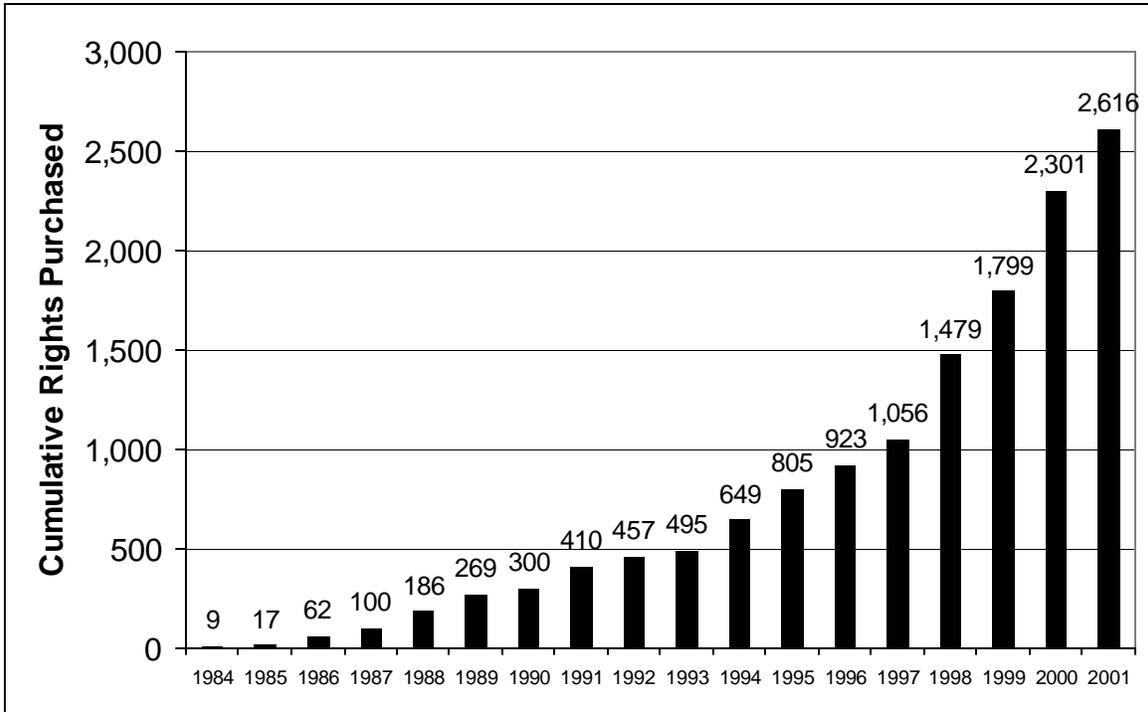
⁴N/A: there were no private transactions during these years.

⁵Figures shown for 2001 are through the first six months.

Source: 1991 Plan Review document (for data through mid-1991) and the PDC Bank

Over the past year, the Commission has worked collaboratively with other state agencies to permanently protect important resources. For example, the Commission has teamed up with the SADC to purchase easements, more restrictive than PDCs on dozens of farms in the Pinelands. (See Table 3.13 for a breakdown in allocations by partner.) The Pinelands Commission agrees to purchase the PDC rights associated with the properties while the SADC pays the rest of the price calculated by a recently adopted SADC formula. Not only does this make participation in the program a more attractive option for these landowners, but also it helps to ensure that the current agricultural land use is continued in perpetuity.

**Figure 3.5
Pinelands Development Credit Program
Rights Purchased by Developers**



Includes first-time and secondary sales.
 Figures shown for 2001 are through the first six months.

Source: Pinelands Development Credit Bank

In the Spring of 2001, \$8 million in farmland preservation funding was initially allocated to this program and an application round dedicated solely to Pinelands farmers was instituted. Landowners were required to obtain from the Commission a Letter of Interpretation (LOI) in order to identify the number of PDCs allocated to their farms. The publicity generated by the program, including three evening informational meetings, created a groundswell of interest leading to the allocation of additional funds and the extension of the first round later in 2001.

The initial and expanded first round of the Special PDC Purchase Program produced the potential for agricultural easements on many of the 84 Pinelands farms that applied to the program. The Special PDC Purchase Program could ultimately pay for that portion attributable to PDCs, though this is dependent on funding for FY2002 reaching anticipated levels. An additional round of SADC funding is expected in the near future and should allow additional farms to have their development rights acquired and retired through this program. The Pinelands Commission hopes to be able to continue complementing SADC's efforts if funding to do so is made available.

Excellent opportunities may exist to extend the purchase of PDCs through similar arrangements with the NJDEP's Green Acres Acquisition Program as well as various county programs. In

these cases, the entity can purchase the property for open space preservation and be subsidized for the price of the PDCs. No such arrangements have yet been reached.

**Table 3.13
Special PDC Purchase Program Funding**

	FY 2001	FY 2002 *
Farmland Preservation Easements	\$4,000,000	\$3,600,000
PDC Bank and the NJDEP Green Acres PDC Purchases	\$3,000,000	\$2,500,000
Total	\$7,000,000	\$6,100,000

* Amount Requested – Not Yet Received

PDC Auctions

The 1999 auction of PDCs by the PDC Bank mentioned above established a new high sales price of \$7,236 per right. That top selling price has since been exceeded and as of mid-year 2001 stands at \$9,000 per right.

Unified Database Program

The PDC Bank has contracted with the Commission to design a unified database system to track, analyze, and report on all facets of the PDC Program. It is anticipated that this system will improve the scope and accuracy of data records and will also help to improve data management, which now suffers from the use of multiple databases with many users.

The Commission has studied various ways to increase demand for the use of PDC rights. These suggestions, or *enhancements*, could result in thousands of more rights being purchased. Details are found in the Other Planning Activities chapter.

DENSITY TRANSFER PROGRAMS

Forest Area & Rural Development Area Density Transfer Program

One of the tenets of the CMP is directed development, a principle inherent in the conception of the PDC Program and the formulation of another important land protection tool – density transfer. The program was originally created to address the problem posed by multiple waiver requests involving undersized lots. As originally envisioned, the density transfer program would authorize development of certain undersized lots if the owner permanently protects enough land elsewhere in the zone to meet the municipal zoning requirements. What this technique has also provided is a means to control the location and extent of development by focusing density within certain predetermined receiving areas while at the same time preserving other larger, more pristine sending areas. Once stripped of its potential for development, the land to be preserved is ideally suited for stewardship by a governmental or non-governmental conservation agency or neighbor.

To date, 35 municipalities have incorporated density transfer provisions into their local ordinances for Forest Area and Rural Development Area (only a few have instituted a targeted

receiving area/sending area format for new subdivisions). Mullica and Hamilton Townships (Atlantic County) are the most active municipalities, with Mullica's program focusing on the Forest Area and Hamilton's on the Rural Development Area. Approximately 900 acres of land have been permanently protected through this program.

Some municipalities have taken additional steps to facilitate the use of density transfer as a permanent land protection tool. Hamilton Township provides a list of suitable lots to applicants who are seeking to purchase land for density transfer purposes. Hamilton also requires specific language for lots deed restricted pursuant to their ordinances' density transfer provisions. The lot(s) to be developed are "tied" to those being deed restricted such that the properties cannot be sold separately and the lands' tax obligations are combined, unless the deed restricted area is conveyed to an open space or non-governmental conservation organization.

A number of towns have designated specific sending and receiving areas within their Forest Area zones with development tied to this density transfer program concentrated in a small portion of the receiving area. This serves not only to preserve the sending areas but the receiving area needs not be as large. (See more detailed discussion in Land Use Planning chapter.)

Waiver Transfers

The waiver transfer program was created by a 1996 CMP amendment that allows the re-activation of certain expired waiver projects given the transfer of development rights from conservation areas in the Pinelands to the waiver project site. The arrangement, which expires in 2007, is another creative way in which the environmental attributes of Pinelands forests and waterways are being preserved.

This new provision of the CMP was utilized soon after its enactment when the development rights to 3,231 acres in Berkeley Township's Forest Area and Preservation Area District as well as 345 acres in Manchester Township's Preservation Area District were transferred to a previously approved waiver site in Southampton Township's Rural Development Area. This waiver site consisted of a retirement community of some 2,350 existing homes, which was able to round out the development by building an additional 196 homes.

Off-site Clustering Pilot Program

Renault Winery in Galloway Township, Atlantic County is participating in another experimental pilot program (begun in 1996) that, like many of the initiatives introduced by the Commission over the past 10 years, strives to further the land protection goals of the CMP while accommodating the prosperity of Pinelands communities and businesses.

As part of the Off-site Clustering Pilot Program, municipal rezonings and adoption of ordinances specific to the needs of this project will allow the landowner to carry out plans for expansion at a historic winery including lodging facilities and a new golf course. (See more detailed discussion in Land Use Planning chapter.)

In return, permanent protection of land within Galloway Township and neighboring Egg Harbor City will occur based on a formula that ties the acreage to be preserved to the square footage of new

construction and the acreage of new outdoor recreation uses. By using this innovative approach to preservation, up to 1,600 acres in the Forest Area, Agricultural Production Area, and Rural Development Area surrounding the project site may be protected. Already, some 427 acres in Galloway's Forest Area have been permanently protected through this program.

Additional protection was afforded through the rezoning of surrounding lands. 490 acres of forested land in Galloway Township were redesignated from Agricultural Production Area to Forest Area, and 65 acres of forested land in Egg Harbor City were rezoned from Pinelands Town to Forest Area.

Off-site Mitigation Easements

Other types of off-site transfers sometime arise on more of an ad hoc basis. Mitigation easement refers to circumstances where land is set aside for permanent protection in response to some other action on behalf of the applicant. One such example involved the Richard Stockton College of New Jersey, which voluntarily deed restricted 116 acres in Hamilton Township's Forest Area in conjunction with the expansion of their campus area in Galloway Township. The Commission will continue to encourage conservation-minded entities to practice land preservation along with their approved development activities within the Pinelands where applicable.

Figure 3.6 illustrates the extent of Pinelands land protection through severed PDCs and the various off-site density transfer measures discussed above.

CLUSTERING AND OTHER ON-SITE EASEMENTS

As opposed to off-site density transfers, clustering involves an on-site transfer of density. The idea is that by concentrating or clustering development on a small portion of an applicant's land, the remaining area, often possessing important ecological attributes, can be deed restricted and in some cases conveyed to a conservation agency or organization. This land can also be linked to other such projects, creating "green belts." From the developer's perspective there are design advantages to clustered development, creating a win-win scenario that has prompted the Commission to encourage incorporation of clustering provisions in the zoning ordinances of several Pinelands municipalities; this despite the fact that a few municipalities have expressed a concern for the type of community created by clustered homes. The examples below illustrate two cases in which clustering was used to promote permanent land protection.

The Presidential Estates tract in Jackson Township, Ocean County spans approximately 800 acres in the Township's Rural Development Area and Forest Area. All of the accruing density from this property – totaling 40+ units – was clustered on a roughly 50-acre tract in the Rural Development Area, with the remaining 750 acres deed restricted as a nature area. Much of this wooded upland is known to be excellent pine snake habitat. Presently, negotiations are underway to transfer ownership of the deed restricted land to a conservation agency or organization.

Clustering was also used effectively in Burlington County's Southampton Township in relation to the Tranquility Ridge development project. The original proposal called for 39 single-family dwellings in the Township's Forest Area. The clustering provision stipulated 3.2 acre lots, leaving nearly 350

acres, primarily wetlands and wetlands buffer, deed restricted and possibly ready for conveyance to the NJDEP or a non-governmental organization for permanent protection.

Other Clustering and Easement Initiatives

Oftentimes the overriding reason for wanting to protect a certain tract of land is the presence of threatened or endangered species. A number of on-site easements have been proposed in an effort to protect populations of threatened or endangered species such as the northern pine snake. The pine snake has been found to inhabit sandy uplands in a number of Ocean County municipalities.

There are several initiatives underway that could be examples of how specific zoning language and knowledge of an area's important ecological attributes can preserve land containing critical species habitat. The clustering provision in Jackson's zoning ordinance, discussed above, is being used to create an environmental easement on land thought to be excellent pine snake habitat. Also, development of a golf course in the Township's Rural Development Area was coupled with an easement on a large portion of the lot known to contain pine snakes. In Barnegat Township, recent discussions have focused on preserving a corridor or green belt for the protection of a pine snake population.

A second way in which the easement concept is used to preserve specific environmental attributes on-site is through the protection of wetlands and establishment of wetlands buffers. This is in fact the most common application of clustered development. The Commission reviews many applications each year where development is to be concentrated in an upland area so that associated wetlands and buffers can be protected.

Another way that deed restriction is used to permanently protect land in the Pinelands is through so-called septic easements. Examples involve landowners who may not satisfy the acreage requirements for installation of a standard septic system (3.2 acres). By purchasing adjoining land in an environmentally sensitive area and deed restricting it for preservation, the landowner is able to meet the acreage requirement to build on his/her property using a standard septic system.

Memoranda of Agreement

Land has been permanently protected in several cases through a Memorandum of Agreement (MOA). In Hamilton Township, Atlantic County Park at Lake Lenape was the site of such an arrangement. In 1998 the Pinelands Commission entered into an MOA with Atlantic County to allow sewerage and development of a 76-acre active recreation area within this large park in return for the deed restriction of the vast majority of the park's land. A total of 1,822 acres was deed restricted as a result, permanently preserving the land in its natural, undeveloped state.

Southern Ocean Landfill in Ocean Township, Ocean County entered into an MOA in 2000 with, among others, the Pinelands Commission and DEP concerning the procedures attendant to the closure of that landfill. One of the stipulations of the Agreement was that all land at the approximately 300-acre site that was not utilized for waste disposal or improvements associated with the management of the landfill would be permanently conserved through a deed restriction

on the property. The deed restriction would limit the uses of that land to open space and low intensity recreational use.

A third example of land protection through a Memorandum of Agreement occurred early in 2001 when the Pinelands Commission entered into an MOA with Evesham Township and the Evesham Municipal Utilities Authority. The MOA provided for the continued discharge of treated wastewater from the Kings Grant development into groundwater recharge basins and through spray irrigation in the Pinelands Rural Development Area. As a result of the MOA, a series of conservation easements and other protection measures will be carried out by Evesham Township. The Township will acquire from the Evesham MUA and place easements on 700 acres associated with the Kings Grant project. The 212-acre parcel targeted for recharge and spray irrigation will likewise be protected. Finally, the Township will acquire and permanently preserve as open space a 133-acre lot in its RD-2 zoning district. This land is contiguous with the land that has been permanently preserved as part of the Sanctuary settlement discussed above.

NON-GOVERNMENTAL ORGANIZATIONS

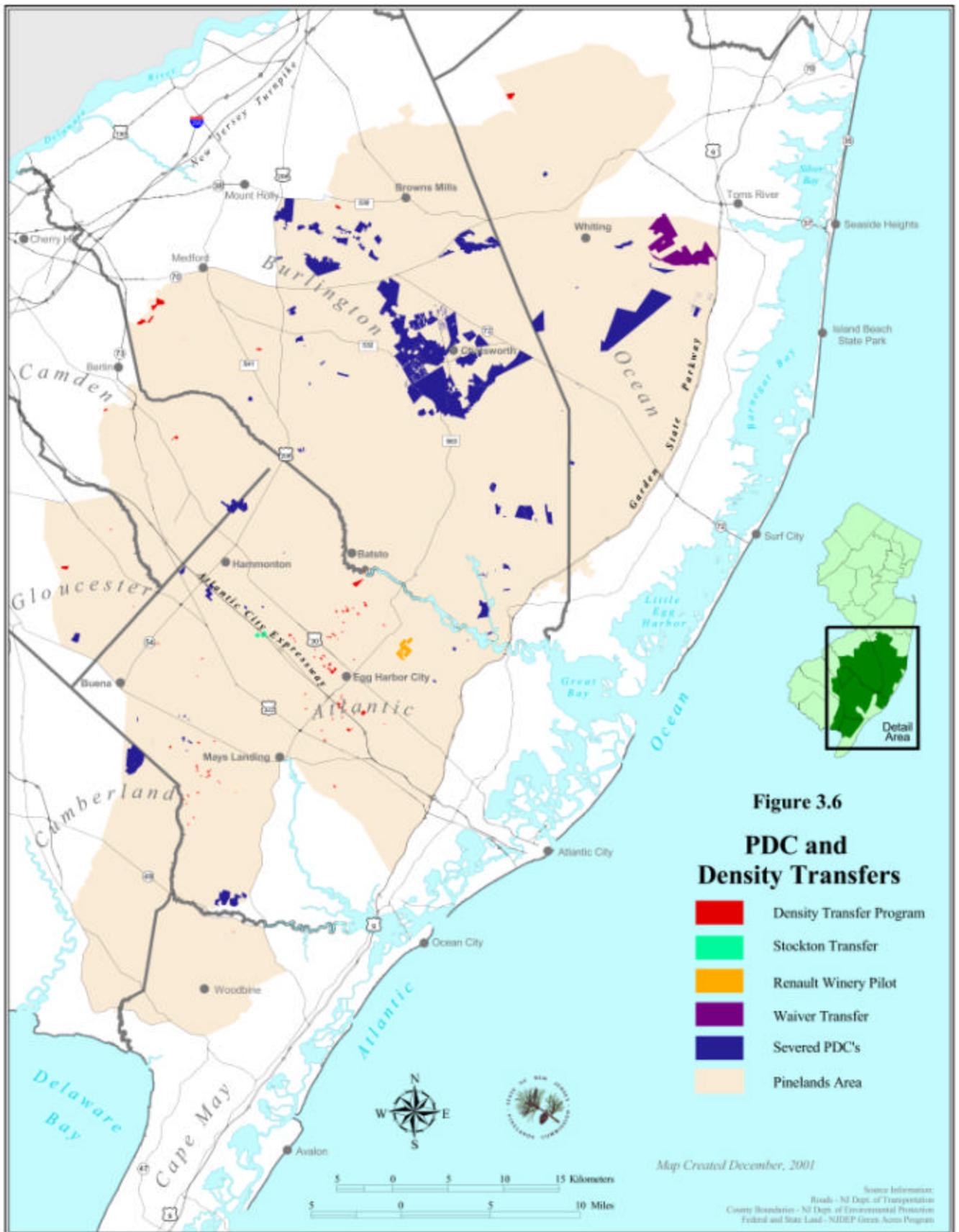
The non-profit sector plays an integral role in protecting land both inside and outside of the Pinelands. One particularly active area is the Forked River Mountains of Ocean County. These organizations also have a number of holdings in the Southern Forest Region. Of the land acquired by various groups, some is retained by the organizations, but much is transferred to State ownership.

Many of these private, non-profit conservation groups, including The Nature Conservancy, Trust for Public Land, The New Jersey Conservation Foundation, and the New Jersey Chapter of the Audubon Society are active participants in the preservation of the land and the unique ecological resources within the Pinelands. It is estimated that these organizations are managing more than 9,000 acres of land in the Pinelands.

OTHER PUBLIC LAND PROTECTION EFFORTS

Federal Programs

The Pinelands Commission's land acquisition activities continue to dovetail nicely with the efforts of the federal government to increase open space holdings. Federal land acquisition efforts have been centered in two areas located on the fringes of the Pinelands area. The creation of the Cedar Swamp Division of the Cape May National Wildlife Refuge and the extension of the Edwin B. Forsythe National Wildlife Refuge in Ocean County resulted in the preservation of nearly 15,000 acres as of June 1991, and acquisition efforts have continued in these areas, both located in the PNR, outside the state-designated Pinelands Area. The NJDEP's Division of Fish and Wildlife had, as of June 1991, independently acquired an additional 1,940 acres in the PNR through its Waterfowl Stamp Program.



County Programs

Pinelands county governments and officials have seized the opportunity to achieve permanent land protection within their jurisdictions. By working in concert with the NJDEP's Green Acres Program, county governments are important participants in the preservation process. This may be accomplished by direct ownership of open space lands, by administering the NJDEP Green Acres or SADC grants, or by purchasing easements. The counties' efforts are aided by innovative fundraising techniques such as the Open Space Tax Program.

Since 1989, all seven Pinelands counties have approved an open space tax that aids in the acquisition and protection of undeveloped land. Cape May County was the first to do so, followed next by Atlantic County and most recently by Camden County in 1998. Atlantic, Burlington, and Gloucester Counties have approved increases to the open space tax since its inception. The tax rate ranges from 1 cent to 4 cents per \$100, resulting in annual revenues from \$460,000 in Cumberland County to \$8,600,000 in Burlington County.

The Burlington County Planning Incentive Grant is an example of a county program taking advantage of State funding. Operating successfully in Southampton Township, the SADC Planning Incentive Grant allows farmers to sell the development rights on their property to the County while still retaining the traditional agricultural use of the land. At least half a dozen farms have already applied for the Planning Incentive Grant in Southampton, with participation expected to rise in the near future.

County parks also provide valuable tracts of open space within the Pinelands. Some of the larger parks include Wells Mills in Ocean County as well as Lake Lenape and River Bend in Atlantic County.

Municipal Programs

Like the counties, municipal governments have used Green Acres funding as well as their own open space tax revenues to promote permanent land protection within their jurisdictions. Grants and loans are available through the State to further conservation efforts at the local level.

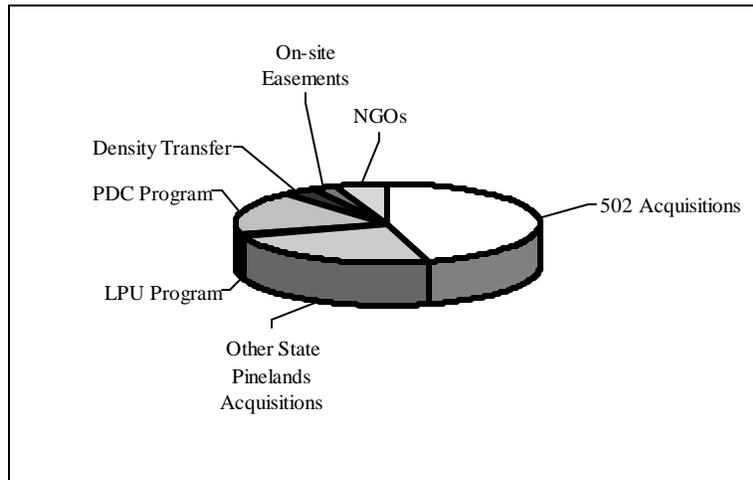
As for tax programs, all 7 municipalities within the Pinelands that voted on open space tax referendums in 2001 passed the open space tax, including 5 towns in Ocean County. The largest approved rates were 2 cents per \$100 in Egg Harbor Township (Atlantic County) and Southampton Township (Burlington County). These 2001 referendums brought the total number of Pinelands municipalities with open space funding programs to 15.

SUMMARY

The land protection efforts described in this chapter have resulted in the permanent protection of more than 150,000 acres of land since the inception of the Pinelands protection program two decades ago. (see Figure 3.7 for breakdown by type.) Furthermore, this total will grow as more complete information on federal, county, municipal, and non-governmental efforts become

available. Still, the need to permanently protect other critical areas within the Pinelands becomes more apparent as our knowledge of the region grows. Competing uses for a diminishing amount of land, a growing realization that zoning alone does not protect a natural system, and a better understanding of the region's ecology highlight the continuing need for permanent land protection initiatives. The challenge will be to maintain an aggressive program through wise use of state and federal funding, partnerships with other private and public organizations, and innovative preservation techniques.

Figure 3.7
Pinelands Permanent Land Protection
1980 - 2001



Underlying acreages are estimates.

Does not include federal, county, or municipal land preservation.

CHAPTER 4

REGULATORY PROGRAMS

Federal, state, county and municipal agencies all play an important, ongoing role in the management of the Pinelands. Other chapters in this Report describe, for example, the role of municipalities in land use planning (Chapter 1) and coordinated land acquisition initiatives with other government agencies (Chapter 3). The purpose of this chapter is to describe other intergovernmental coordination efforts undertaken by the Commission between July 1, 1991 and June 30, 2001 and how they further the goal of protecting the Pinelands.

Recognizing the importance of intergovernmental coordination with other agencies that play a role in protecting the Pinelands, the Commission undertook a reorganization to create the Regulatory Program office in the Fall of 1996. The Regulatory Programs office is currently staffed with three positions, a Manager of Regulatory Programs and two Regulatory Program Specialists. The primary purposes of creating the office were both to consolidate a number of federal, state, county, and municipal regulatory coordination functions and to develop permit streamlining initiatives.

The Regulatory Programs office is involved in a broad array of regulatory coordination efforts, including: participation in State legislative matters that affect the Pinelands; coordination of enforcement activities with municipalities when violations of Pinelands land development regulations occur; review of State agency rule proposals to ensure their consistency with the Commission's regulations; and development of Memoranda of Agreement (MOAs) to address a wide range of issues. Other responsibilities of the Regulatory Programs office include coordination of the Commission's issuance of NJDEP state freshwater wetlands general permits and coordination with the NJDEP in the review of Coastal Area Facility Review Act (CAFRA) applications located outside the Pinelands Area, but within the PNR. The Regulatory Programs office also supports the Commission's Public and Governmental Programs Committee. In addition, the Regulatory Programs office, with support from the Project Review office, administers the Commission's forestry program and the Commission's Pinelands Forestry Advisory Committee.

COORDINATION WITH MULTIPLE LEVELS OF GOVERNMENT

Since its inception in 1996, the Regulatory Programs office has been involved in many matters that reinforce the need for intergovernmental coordination between multiple levels of government. Over a 22-month period between 1997 and 1998, the Commission staff participated in a series of meetings involving the New Jersey Department of Transportation, the South Jersey Transportation Planning Organization, concerned counties and municipalities, and business and conservation groups to address potential alternatives to the long discussed extension of State Route 55 in Cumberland and Cape May Counties.

In the spring of 1998, the Commission co-sponsored with the Pinelands Municipal Council (PMC) a "Firewise in the Pines" hearing. The one-day hearing addressed the hazard of forest fires in the Pinelands. Participants in the forum included the US Department of Agriculture Forest Service, the NJDEP, the California Department of Forestry and Fire Protection, The Nature Conservancy, and many Pinelands municipalities. One of the foremost recommendations that emerged was the need to increase public awareness of the dangers that forest fires pose in the Pinelands. In response to that recommendation, the Commission formed a forest fire task force composed of representatives of Berkeley Township, the PMC, the New Jersey Department of Community Affairs, the New Jersey Fire Prevention and Protection Association, and the NJDEP Forest Fire Service. In January of 2000, the Task Force held a public meeting with representatives of nine Pinelands municipalities to discuss means of increasing public awareness of the hazard of forest fires in the Pinelands.

In 1998, the Commission entered into a joint MOA with Woodland Township, the Conservation Foundation, and the NJDEP to allow for the ten-year use of an abandoned sand mine in Woodland Township, Burlington County, as an off-road recreational vehicle park. In return for this use, the abandoned sand mine will be restored over a ten-year period. This MOA required extensive coordination between several governmental agencies and demonstrated that multiple levels of government can, in fact, cooperate to achieve the common goal of protecting the Pinelands. The issue of off-road recreational vehicles in unauthorized areas of the Pinelands is one of ever increasing concern. In 2001, it was brought to the Commission's attention by the PMC, attendees at the Pinelands Newly Elected Officials Seminar, individual municipalities within the Pinelands, and members of the public.

FEDERAL COORDINATION

During the period July 1, 1991 through June 30, 2001, coordination between the Commission and many federal agencies has taken place on a broad array of topics. This coordination is perhaps best exemplified by the following list of MOAs with federal agencies that the Commission entered into during the period:

The United States Army Corps of Engineers (USACOE): designating the Pinelands Commission as the lead agency with respect to verification of the delineation of wetlands within the Pinelands Area. Delineations verified by the Pinelands Commission are now accepted by the USACOE as accurate boundaries of federally regulated wetlands within the Pinelands Area. (Renewal of an existing 1989 MOA in 1990, 1993, and 2000.)

The United States Department of the Interior National Park Service (NPS), the State of New Jersey, the Great Egg Harbor Watershed Association, 12 municipalities, and 4 counties: establishing a cooperative framework for the completion of local river management plans aimed at protecting the resources identified in the Great Egg Harbor River Wild and Scenic River Study (1990).

NPS, NJDEP, and the New Jersey Department of Commerce and Economic Development: establishing a framework for the development and management of the New Jersey Coastal Heritage Trail (1998).

NPS and NJDEP: providing for the implementation of the Pinelands Interpretive Plan by the Commission, the NPS and the NJDEP for the interpretation and visitor use of the PNR (1995 and amended in July 2000)

NPS, National Guard Bureau, New Jersey Department of Defense, and NJDEP: providing for the coordination of the development, management and protection of the natural resources of the Warren Grove Weapons Range. (This MOA expired in 1989, was renewed in 1991 and since expired in 1994)

United States Fish and Wildlife Service, Richard Stockton College of New Jersey, Rutgers University Institute of Marine and Coastal Sciences, and NJDEP: establishing a framework for the coordination of the management of the Jacques Cousteau National Estuarine Research Reserve at Mullica River-Great Bay, a majority of which is located in the PNR in Ocean, Burlington, and Atlantic Counties (1998).

In addition to these MOAs, the Regulatory Programs office monitored permitting and regulatory actions of federal agencies. In particular, the Regulatory Programs office commented on applications before the USACOE to ensure that any activity permitted by this agency was consistent with the CMP. Also, the office monitored and commented on rulemaking of the Federal Communications Commission (FCC) that would pre-empt state and local zoning and land use restrictions on the siting, placement, and construction of broadcast transmission facilities associated with digital television. This rulemaking was not pursued by the FCC.

STATE COORDINATION

During the period from July 1, 1991 to June 30, 2001, the Regulatory Programs office was involved in ongoing coordination of the Commission's activities with many state agencies. Such coordination is necessary to ensure that both the Commission and other state agencies propose, adopt, and implement practices that are consistent with one another.

During this period, the Regulatory Programs office coordinated with the **New Jersey Office of State Planning (OSP)** concerning the relationship between the State Development and Redevelopment Plan (SDRP) and the CMP. In 1999, the Pinelands Commission entered into an MOA with the New Jersey State Planning Commission to clarify the respective roles of the two Commissions in the Pinelands. That MOA recognized the authorities of both Commissions under their respective enabling legislation and affirmed that in the Pinelands Area, the New Jersey State Planning Commission would rely on the adopted plans and regulations of the Pinelands Commission in developing the SDRP.

Many State agencies are now evaluating municipal financial aid decisions based on consistency with the SDRP. The Pinelands Commission has worked closely with municipalities, counties,

OSP, and those State agencies offering municipal financial aid to ensure that Pinelands Area municipalities are accorded the same recognition as municipalities located outside the Pinelands Area with State Planning Commission designated "centers", "villages", and "hamlets".

To facilitate the Commission's geographic information systems needs, the Commission also entered into an MOA (1996) with OSP to provide for the exchange of digital data.

The Regulatory Programs office worked closely with the **New Jersey Department of Agriculture** on a number of significant issues. In 2001, the Commission entered into an MOA with the SADC to facilitate purchase of PDCs allocated to lands in the Pinelands Area that will be subject to SADC farmland development easements. From late 1999 through 2001, the Commission also worked closely with the State Board of Agriculture in developing an amendment to the CMP addressing the Commission's concern with the off-site removal of soil accessory to an agricultural operation (see Chapter 1 for a description of the adopted CMP amendments). The office is also currently working with the Department of Agriculture on proposed agricultural management practices for aquaculture facilities.

During the past decade, the Commission worked with the **New Jersey Department of Transportation** (NJDOT) by serving on a number of committees including the Route 55 Task Force, the Route 72 Access Study in Stafford Township, Ocean County, and the NJDOT's Highpoint to Cape May Bike Route Study. Additional intergovernmental coordination activities with the NJDOT included entering into two MOAs (1992 and 1996) to streamline the Commission's application process for certain development activities undertaken by the NJDOT in the Pinelands and another MOA (2000) with the NJDOT to allow for the use of herbicides along State roads provided certain conditions were met.

Understandably, a significant amount of intergovernmental coordination also occurred between the Commission and the **NJDEP**. Each year the Regulatory Programs staff reviews and provides comments to NJDEP on land development applications that require a NJDEP CAFRA permit and are located outside of the state-designated Pinelands Area, but within the federally designated PNR.

The Regulatory Programs office coordinates with the NJDEP, Bureau of Air Quality Evaluation, in the review of land development applications within the Pinelands Area for consistency with applicable air quality standards. The office also coordinates the issuance of freshwater wetland general permits and minor stream encroachment permits in the Pinelands Area on behalf of the NJDEP, Bureau of Inland Regulation, for those land development applications in the Pinelands that require such permits.

The Commission also entered into an MOA in 1996 with the NJDEP, State Forestry Service, to establish the New Jersey Pinelands Forest Stewardship Technical Review Subcommittee. This subcommittee is composed of staff members of both the State Forestry Service and the Pinelands Commission. The subcommittee jointly reviews those private forestry applications in the Pinelands that elect to pursue enrollment by the State Forestry Service in the State Forest Stewardship Program.

Reflective of the Commission's intergovernmental coordination efforts with state agencies, the Commission has undertaken a number of MOAs since July 1991 to streamline the Commission's application process with the NJDEP. Such MOAs include: a joint MOA with the NJDEP and the PDC Bank (2000) to facilitate the Atlantic White Cedar Freshwater Wetlands General Permit 23; an MOA (1999) to streamline the Commission's review of Atlantic white cedar restoration proposals; an MOA with the NJDEP Division of Parks and Forestry (1995) to streamline permitting; an MOA with the Pesticide Control Element (1991) to streamline permitting for application of pesticides (herbicides) to lakes and ponds; an MOA with the Site Remediation Program (1994) to coordinate agency reviews; an MOA in 1993 regarding administration in the Pinelands Area of the State Freshwater Wetlands Protection Act; and an MOA in 1994 regarding the use of sludge-derived products in the Pinelands Area. Continuing those efforts, the Commission is currently working with both the US Fish and Wildlife and the NJDEP Division of Parks and Forestry in an effort to update existing permit streamlining MOAs.

The Commission entered into an MOA (2000) with the NJDEP to facilitate a closure plan for the lined portion of the Southern Ocean County Landfill in Ocean Township, Ocean County, and a joint MOA with both the NJDEP and the PDC Bank to purchase PDCs in the Pinelands Area (2000). The Commission also entered into an MOA (1994) with the NJDEP to facilitate the Commission's geographic information system needs by providing for the exchange of digital data between the two agencies.

Additional intergovernmental coordination activities with State agencies are reflected through the Commission's entering into MOAs with other State agencies such as the **New Jersey Department of Corrections** (1999) to streamline the Commission's application process for certain development activities undertaken by that agency.

In the past several years, the Commission entered into MOAs with the **New Jersey Highway Authority** (1998) and with the **New Jersey Rail Transit Operations** (2000). Both MOAs allowed the use of herbicides provided certain conditions are met. The Commission also entered into an MOA (1999) with the **South Jersey Transportation Authority** to allow for certain development at the Farley Service Plaza along the Atlantic City Expressway that was not in strict accordance with the provisions of the CMP, provided certain measures were undertaken to protect the resources of the Pinelands.

The Commission also entered into an MOA (1998) with the **NJDOT** and the **New Jersey Department of Treasury** to provide for a special Pinelands preservation motor vehicle license plate.

Another state level intergovernmental coordination activity was reflected through the Commission's entering into an MOA (1996) with **Stockton State College** (now the Richard Stockton College of New Jersey) to streamline the Commission's application process for certain development activities undertaken by the college.

COUNTY COORDINATION

The Regulatory Programs office is also involved in coordinating the Commission's activities with the seven counties located in the Pinelands Area.

Between 1991 and 2001, the Commission entered into MOAs with Gloucester (1994), Ocean (1999), and Burlington (1998) Counties to streamline the Commission's application process for certain development activities undertaken by these counties in the Pinelands.

Additionally, the Commission also entered into an MOA with Atlantic County to facilitate the development of the Atlantic County Park at Lake Lenape in Mays Landing and an MOA with the Ocean County Utilities Authority to allow for the limited use of a sludge-derived product manufactured by the County Utilities Authority in the Pinelands Area.

The Commission also entered into MOAs with Atlantic (1998) and Ocean (1998) Counties to facilitate the exchange of digital data to enhance the Commission's geographic information system capabilities.

MUNICIPAL COORDINATION

During the past ten years, the Commission attempted to increase intergovernmental coordination with the 53 municipalities that have land in the Pinelands Area. Foremost among these efforts was the reactivation in 1995 of the PMC. This effort was facilitated by an amendment to the Pinelands Protection Act to reduce from 27 to 15 the number of municipal representatives that must be present for a quorum of the Council. The Municipal Council, which meets approximately five times per year, provides a forum for the mayors of Pinelands municipalities to discuss a variety of Pinelands issues with each other and with the Commission.

One of the most significant accomplishments in the past ten years is the Commission's permit streamlining initiative known as the Local Review Officer Program (LRO). In a municipality participating in this program, an applicant proposing to build a single family dwelling on an existing lot files an application directly with a municipal official, who functions as the LRO, instead of the Commission. The LRO reviews the application with support from the Commission staff. Within 14 days of receipt of the application, the LRO issues either a letter requesting additional information or a letter indicating that the application is complete. If the letter indicates that the application is complete, the applicant may proceed to secure any necessary approvals and permits for development of the dwelling. The LRO Program results in a significant time savings for an applicant.

Since 1993, 18 Pinelands municipalities have begun participating in this program. It is the Commission's initial effort in both streamlining the overall application process for houses on existing lots that meet certain standards and establishing a more cooperative permitting partnership with municipalities. In two municipalities, Southampton and Stafford, the LRO Program has been expanded to provide for municipal review of minor site plans.

As indicated in Chapter 2 (Project Review), of the 6,541 private development applications completed with the Commission over the past 10 years, 20% were completed under the LRO Program. As depicted on Table 4.1, it is even more revealing that, of the 341 applications for single family dwellings (SFD) on existing lots completed with the Commission in 2000, 40% were processed through the LRO Program. The Commission hopes to increase both the number of municipalities participating in this program and the types of development that are covered by the program. For example, in the Commission's Rural Economic Development initiative, the Commission committed to working with the seven municipalities that participated to establish an application process that expedites review of commercial development (see Chapter 7).

Table 4.1
Proportion of Applications for SFDs Completed with LRO Assistance

Year	Total # of SFD Apps. Completed.	Of Total # of SFD Apps. Completed with LRO	% of SFD Apps. Completed With LRO
1993	828	90	11%
1994	616	366	59%
1995	571	294	51%
1996	388	126	32%
1997	446	161	36%
1998	446	240	54%
1999	368	184	50%
2000	341	135	40%
2001 ¹	180	80	44%

¹Figures shown for 2001 are through the first six months.

Other efforts at increased coordination with municipalities include the Commission's entering into MOAs with 22 of the 53 Pinelands Area municipalities to streamline the Commission's application process for certain minor development activities, generally involving disturbance of less than 5,000 square feet or certain limited road improvements undertaken by these municipalities.

Other MOAs that the Commission entered into with municipalities are an MOA with Evesham Township and the Evesham Municipal Utilities Authority in 2001 which allows for the discharge of treated wastewater from the Kings Grant Wastewater Treatment Facility to additional groundwater recharge basins and additional spray irrigation in the Pinelands. This MOA allowed for a deviation from the standards of the CMP. As required by the CMP, the MOA provides for an equivalent level of protection for the Pinelands by requiring the dedication of certain lands for open space. The Commission also entered into an MOA with Evesham Township in 2000 to allow for the use of a sludge-derived product in the capping of the Township's former landfill.

In 1998, the Commission began co-sponsoring with the PMC an annual seminar for Newly Elected Pinelands Officials and newly appointed municipal planning and zoning board members. In 1997, the Commission also cosponsored two seminars for municipal permitting officials.

ENFORCEMENT

The Regulatory Programs office coordinates the Commission's enforcement activities. Violations of the CMP are brought to the attention of the Commission by concerned citizens, other agencies, and the Commission's staff. When such reports are received by Commission staff, an initial determination must be made regarding whether the reported violation actually relates to a standard of the CMP. The Commission staff pursues resolution of CMP violations generally in cooperation with the appropriate municipal official. Occasionally, the Commission requires the intervention of the Attorney General's office to resolve particularly serious violations or situations when the responsible party is not responding to either the municipality or the Commission.

The average number of CMP violations per year reported to the Commission between January 1991 and December 2001 was 81 compared to the average between January 1986 and December 1990 of 78. (Computer tracking of violation information began in 1986.) Between January 1991 and December 2001, an average of 52 violations per year were resolved compared to an average of 61 violations per year resolved between January 1986 and December 1990. It is important to recognize that both the number of verified CMP violations per year and the number of resolved violations per year are, for the most part, solely a function of the limited staff resources that are available to the Commission.

The three most frequently encountered types of CMP violations in the Pinelands are:

- ?? construction without receiving all necessary permits;
- ?? illegal establishment of a use; and,
- ?? wetlands clearing/filling.

These three categories of violations are the most frequently reported because they are generally the most evident to the public. Most violations of the CMP are generally resolved through a cooperative effort between the Commission and the concerned municipality. The municipality will typically issue a notice of violation indicating that a violation of the municipal land use ordinance has occurred on a parcel and requesting resolution of the matter. The Commission will also issue a letter indicating a violation of both the Commission's regulations and the municipal ordinance has occurred and requesting resolution of the matter. If the matter is not resolved, the next step is typically an appearance in municipal court. At that proceeding, the Commission staff is available to provide support, including expert testimony.

Occasionally, the Commission is faced with resolving violations of the CMP by governmental agencies in the Pinelands. Although the number of such violations is small, the significance of these violations is important in respect to the public's perception of these violations. Some of the governmental agency violations have their origin in a misunderstanding of those activities in the Pinelands that require an application to the Commission. Because the Commission has

entered into a number of MOAs to streamline the development application process for public agencies, in a few instances, violations are attributable to a misunderstanding of the provisions of those MOAs.

The Commission has undertaken a number of steps to improve the effectiveness of its enforcement efforts. These steps include entering into an MOA in 1993 with the NJDEP to coordinate administration of the requirements of the New Jersey Freshwater Wetlands Protection Act in the Pinelands. The MOA provides that the Commission is primarily responsible for initial site investigation of violations of the New Jersey Freshwaters Wetlands Protection Act in the Pinelands and also provides for the support of the NJDEP, if necessary, in resolving wetland violations. Beginning in June of 2000, the Commission increased its efforts to provide increased assistance to municipalities in pursuing and resolving violations of the CMP. Reflective of those efforts, during 2001, the Commission staff provided support and expert testimony in municipal court proceedings in several municipalities and Superior Court in Camden County. The Commission has also attempted to improve compliance with the development standards of the CMP by conducting compliance site inspections to follow up on conditions of approval for developments previously approved by the Commission.

In spite of these efforts, the Commission's enforcement program is not fully effective. The Commission does not have the resources to monitor almost one-quarter of the State's land area. When violations are noted, the Commission's lack of direct enforcement authority is a hindrance to resolving violations. It is the Commission's intention to continue its effort to encourage participation and cooperation of enforcement responsibilities with the 53 municipalities that comprise the Pinelands Area.

LEGISLATION AND RULEMAKING

The Regulatory Programs office is actively involved in monitoring proposed State legislation and rule proposals of other state agencies to identify matters that may affect the implementation of the CMP.

From July 1, 1991 through June 30, 2001, the Pinelands Commission supported several significant state legislative proposals that were enacted into law. These include:

- ?? The Green Acres, Farmland and Historic Preservation and Bond Act of 1995 (P.L. 1995, c.204) that provided \$340 million for open space acquisition, farmland preservation, historic preservation and the acquisition of coastal lands. This bill also specifically provided up to \$5 million for the Pinelands Commission's Limited Practical Use Acquisition Program.

- ?? The Garden State Preservation Trust Act (P.L.1999, c.152) that provided substantial monies for a period of ten years for the purposes of open space acquisition, farmland preservation and historic preservation. With respect to the Pinelands Area, this bill directed the SADC to adopt a new methodology for determining the value of development easements for farmland in the Pinelands Area. It also specifies the manner in which the NJDEP Green Acres

Program would determine the value of any PDC purchased by the NJDEP Green Acres Program.

- ?? An Act establishing the Pinelands Rural Economic Development Pilot Program (P.L. 1997, c. 233) and providing \$250,000 for its implementation.
- ?? An Act providing \$5.5 million for an assessment of the Kirkwood-Cohansey Aquifer. (P.L. 2001, c.165)
- ?? P.L. 1996, c.147 establishing the Pinelands license plate program and providing additional funding for the Pinelands Limited Practical Use Acquisition Program through the sale of the license plates.

The Pinelands Commission also supported legislative initiatives to extend the period of the authority of the PDC Bank to purchase PDCs and to extend PDC guarantees, and a bill revising the manner in which a quorum of the PMC would be determined and the manner in which officers of the Council would be elected. These bills were enacted into law in 1997 and 1995, respectively.

In addition to the laws described above, the Pinelands Commission has supported passage of the proposed “Pinelands Water Resources Protection Trust Bond Act,” which has been introduced in several sessions of the Legislature since 1991, but has not been enacted into law. As proposed in the 2000/2001 session of the Legislature, this Act would provide \$70 million for infrastructure capital projects aimed at protecting the water resources of the Pinelands while accommodating development in designated growth areas of the Pinelands, infrastructure capital projects that would eliminate direct surface water discharges of treated wastewater, and small-scale infrastructure capital projects to service existing public schools or expansions thereof (see Chapter 7).

The Commission has also been seeking funding for the closure of landfills in the Pinelands through various legislative proposals. The State 2001 budget included \$15,000,000 for closure of the unlined portion of the Southern Ocean Landfill in Ocean Township. Legislation to facilitate the closure of at least the Woodbine Municipal Landfill has recently been signed into law. Legislation to provide the Commission with enforcement authority and the ability to levy fines was considered, but not passed.

With regard to State agency rulemaking, the Pinelands Commission continues to monitor proposed changes to regulatory proposals and, when necessary, request changes to such proposals to ensure their consistency with the federal and State Pinelands Legislation and the CMP. Of particular note are those rule proposals of the NJDEP regarding water quality management and freshwater wetlands protection. The Pinelands Commission provided extensive comments on each of these proposals and secured several revisions to the latter to ensure that the Freshwater Wetlands Protection Act rules provided sufficient notice to the regulated community of the relationship of these rules to the CMP and of the manner in which wetlands are regulated in the Pinelands Area. With regard to the former, the NJDEP adopted only a portion of the rules

as proposed. It is anticipated that efforts to further revise these rules are underway and that close monitoring of this endeavor will be required of the Pinelands Commission.

COMMISSION PUBLIC AND INTERGOVERNMENTAL PROGRAMS COMMITTEE

The Regulatory Programs office assumed responsibility for supporting the Commission's Public and Governmental Committee in 1999. The primary efforts of that Committee have been legislative, MOAs and selected topics such as phragmites control and State Route 55.

FORESTRY

Another example of intergovernmental coordination that occurs in the Pinelands is the Commission's forestry program.

During the period from 1981 to June 1991, an average of 9.6 private forestry applications per year were completed with the Commission. From July 1991 through 2001, an average of 18.6 private forestry applications per year were completed with the Commission. In addition to the average number of forestry applications per year almost doubling, the comprehensiveness of the Commission's review of forestry applications has markedly increased during that same time period.

In response to concerns expressed by the forestry community, in 1996 the Commission adopted amendments to the CMP forestry program and application requirements (see Chapter 1). Among other changes, those amendments extended the term of a municipal forestry permit from two to ten years and also encouraged private forestry applicants to participate in the New Jersey Forest Stewardship Program, which is administered by the NJDEP Forest Service. Participation in this program results in a proposed forestry applications being submitted directly to the NJDEP Forest Service. A joint review committee consisting of NJDEP Forest Service and Commission staffs then reviews the application. Since the 1996 New Jersey Forest Stewardship Program amendments to the CMP, the Commission has received 86 forestry applications under the Forest Stewardship Program. Of those 86 applications, 67 have been approved to date, 12 are awaiting receipt of additional information and seven are inactive.

The Regulatory Programs office, with support from the Project Review office, is also involved in the review of forestry applications proposed by public agencies in the Pinelands. In 1987, the Commission created the Pinelands Forestry Advisory Committee to advise the Commission's Executive Director of forestry matters involving public lands. The members of this committee represent a cross-section of forestry interests groups. In 1999, the Commission expanded the membership of the Forestry Advisory Committee from seven to nine members. The Committee is served by the Regulatory Programs office, again with support from the Project Review office. Between calendar year 1981 through calendar year 1990, the Commission received an average of four public forestry applications per year. Between calendar year 1991 through calendar year 2001, the Commission received an average of six public forestry applications per year (see Chapter 2).

CHAPTER 5

PUBLIC INFORMATION AND OUTREACH

Historically, the areas of Public Programs office responsibility have consisted of two discrete disciplines - one being Public Information and Outreach and the other Education and Interpretation. The Public Information and Outreach component seeks to frame the mission and activities of the Commission in a constructive manner for the many and varied constituencies of the region, including municipal and state officials, local residents and students, tourists, visitors, the environmental community, developers, public agencies, and scholars and researchers. The complexities of the CMP and the controversies that arise at times from its implementation demand a flexible public outreach effort both well-versed and up-to-date in a broad range of Commission issues.

The Commission is interested in increasing and expanding our use of technology to better inform and facilitate the exchange of information with all those interested in Pinelands matters. The Pinelands Commission website continues to be improved. Commission meetings and other information pertinent to Pinelands efforts have been posted on the web site. The Mullica Watershed effort and data from our science office is readily available on the web site. In the coming year we look to make more improvements and ensure that the website is updated on a timely basis.

The Commission has also launched a streamlining initiative. A major objective of this initiative is to provide a greater level of information to municipalities, applicants, environmental organizations, developers, residents, and the public at large. Using the geographic information system, information will become more available on a site-by-site basis. In the future, it is our hope that applicants will be able to file on-line.

The new Richard J. Sullivan Center, which opened in November 2001, has both a library and technology service that will provide greater public information opportunities. The Center will also be an important place to hold forums on topical issues.

Public interest in the Pinelands is greatly affected by media coverage. Over the past several years, the Commission has tried to develop a proactive relationship with the press through the issuance of press releases, publications, and letters to the editor. This will be a continued effort in the future. This will help to ensure that the complexity of our decisions and efforts can be synthesized in a manner that is understandable to the general public.

The Education and Interpretation program is built on the belief that education, either in a formal classroom setting or in more informal, interpretive efforts, is the key to understanding and appreciating the New Jersey Pinelands. A well-informed public can better comprehend the interdependence between humans and their environment and the actions taken by the Commission to protect that balance.

Staffing limitations often make these goals difficult to reach.

PUBLIC INFORMATION

In addition to explaining Commission decisions, particularly those involving disputed or complicated issues, information/outreach activities include:

- ?? preparing press releases and letters to the editor;
- ?? designing and editing the Commission's publications, such as the annual report, newsletters, and a variety of other pamphlets and brochures that explain Pinelands programs;
- ?? undertaking various outreach activities in schools and at Pinelands events and festivals; and
- ?? supporting special events and occasions sponsored by the Pinelands Commission.

Commission Publications

Three publications - the Annual Report, *The Pinelander*, and *Pinelines* - are produced on a recurring basis. The Annual Report meets a state mandated requirement to summarize Commission accomplishments, fiscal status, and legislative decisions on a yearly basis. *The Pinelander*, first issued on January 15, 1980, has historically been one of the Commission's most popular publications. Issues are mailed to 2500 organizations and individuals two to three times a year. It contains articles that highlight issues of importance to the region, describes current activities and ongoing efforts, and has a calendar of upcoming Pinelands events. *Pinelines*, a publication that first appeared in May 1995, was initially distributed three times annually to the region's elected officials, including Pinelands mayors and planning and zoning board chairs, but is now done on a more limited basis. It concentrates on assessing pending and adopted legislation of interest to its audience.

The Commission's publications would benefit from upgrading or updating. Expanding *The Pinelander* from a four-panel to a six-panel format and issuing it three to four times a year instead of twice would allow for more information to be included on a more current basis. Additionally, existing popular publications such as the *Pinelands Speakers Directory*, *Pinelands Guide - Recreational Opportunities, Historic Sites, Nature Centers, and Field Trips*, and *Landscaping with Pinelands Plants - A Guide to Nurseries That Sell Pinelands Vegetation* need to be updated.

Media Contacts

Most contact with the general media, is of course, handled through Public Programs. The staff issues press releases, responds to reporter inquiries and "info@" queries (the Commission e-mail address that can be used by the public needing answers to a variety of Pinelands-related questions), and submits OpEd articles and letters to the editor about matters of regional concern. Annually, the staff composes about six such articles/letters, which often are intended to correct misconceptions or factual errors that appeared earlier. In an average year, the staff also prepares approximately 20 press releases relating to Commission meeting actions and other matters, like communications towers.

Responding to various queries from news organizations as well as from the general public is also a significant component of the staff's work. Usually, about 20 media requests and 40-60 public

calls come in to the Commission every month, dealing with many different issues, including project review processes, planning, CMP violations, Pinelands recreational sites, regional history, natural resources, and administration of the CMP.

Pinelands Commission Website

In the Summer of 1996, the Commission developed and launched its own website (now located at www.nj.gov/pinelands). This site, named the State Internet Site of the Year in 1999 by the Documents Association of New Jersey, currently contains basic information about the Commission, the CMP and the Pinelands, as well as schedules for upcoming Commission and Committee meetings, public hearings and other Pinelands-related events. More detailed information is provided on a number of Commission programs and initiatives, including the Mullica River Watershed planning effort, pending and adopted amendments to the CMP, and the work of the Commission's Science Office and Ad Hoc Committee on Alternate Septic Systems. Other well-received features of the website include a "Kids Korner" and information on Pinelands wildlife and vegetation, as interpreted through the photographs of Michael A. Hogan and the botanical illustrations of Robin Jess. In addition, a variety of documents may be downloaded. These include the Commission's Annual Reports and newsletters, as well as application forms and the Commission's application handbook. In the coming year, the Commission will be looking to further expand on the information provided by the website and ensure that it is updated on a timely basis.

The Commission launched a streamlining initiative in 2001, a major objective of which is to provide a greater level of information to municipalities, applicants, environmental organizations, developers, residents, and the public at large. As part of this initiative, the Commission's automated development review system that both tracks permits and maintains key historical data will be redesigned, with the hope of creating a platform upon which direct access by municipalities and the public can be provided. Information from the Commission's geographic information and zoning information systems will be integrated, thereby making site-specific data more readily available to all users of the new system. Ultimately, it is the Commission's hope that applications for development will be able to be filed on-line and that information on the status of applications and other important permitting information will likewise be accessible to applicants and local officials on the website.

EDUCATION AND INTERPRETATION

Pinelands Educational Advisory Council

Since 1984, the Commission has benefited from the recommendations and guidance of its Educational Advisory Council. Each of the nine Council members is an experienced educator with expertise in a specific field such as primary education, social studies, environmental science, curriculum development, administration, etc. The Council meets quarterly, working with the Commission's Public Programs staff, and recommends ways to improve, expand, and better coordinate Pinelands educational programs. In the last ten years, members have been involved with the creation of the double-sided Pinelands environmental education poster

introduced at the tenth anniversary celebration of Pinelands protection, February 1, 1991; the development of the well-received *Pinelands Guide to Recreational Opportunities, Historic Sites, Nature Centers & Field Trips* introduced to the public in 1991; the creation of the Pinelands Speakers Organization with its accompanying directory; the selection of topics and presenters for each annual Pinelands short course; in 2000, assistance in the planning and presentation of four focus groups that resulted in public recommendations for the Richard J. Sullivan Center's outreach efforts; and guidance in preparing a business plan for the Center, which is discussed later in this chapter.

Curriculum Guides

Central to the Commission's initial public education and outreach effort was its creation of the comprehensive audio-visual program, *The New Jersey Pinelands - Our Country's First National Reserve*. This 17-minute audio-visual program was originally distributed to area libraries and environmental centers throughout New Jersey in 1984. In early 1985, Pinelands Educational Advisory Council members recommended that accompanying curriculum guides for grades four through six and seven and eight be prepared. Each curriculum guide contains six Pinelands topic units: Animals, Fire, People, Plants, Soil, and Water. The topic units include activities which expand upon ideas introduced in the audio-visual program. They provide students and teachers with a broader scope of study about the Pinelands and a more detailed and thorough understanding of the region. At each grade level the intent of the audio-visual program and guides is to develop an appreciation of the uniqueness, complexity, and ecological sensitivity of the Pinelands; to encourage further investigation of the region; to nurture an environmental ethic as it relates to the Pinelands; and to promote recognition of the need for careful land use management that will preserve, conserve, and maintain this internationally recognized habitat.

The first topic units for grades four through six were developed in 1986. By 1989, units for both grade categories were complete. To date, approximately 2,000 copies of these guides have been distributed to teachers in Pinelands municipalities and elsewhere. Guide packages continue to be purchased by colleges and by environmental organizations and engineers.

During 1999 and 2000, both curriculum packages were updated and adapted for inclusion on the Pinelands Commission's website. A March 4, 2000 Pinelands Short Course workshop demonstrated for teachers how this online curriculum can be incorporated into a variety of classroom subject areas including science, social studies and language arts.

The Pinelands curriculum component of the Commission's website received the New Jersey Planning Officials' "Achievement in Planning Award" for "a regional organization furthering understanding of planning" on June 23, 2000. The award recognized the work of Commission staff, including site designer William Jacoby, members of the Commission's Educational Advisory Council, and Pinelands educators in creating an "on-line curriculum guide for the Pinelands."

Pinelands Speakers Organization

The long established Pinelands Speakers Organization owes its beginning to the guidance of the Pinelands Educational Advisory Council and continues to be managed by the Public Programs staff. A total of 47 speakers are listed in the 2000-01 Speakers Directory, a valuable resource for educational and civic organizations that wish to learn more about a range of Pinelands-related topics. Its membership helps greatly when responding to the many public requests for Pinelands speakers.

Initially, the Public Programs staff tracked information such as the kinds of organizations using this service, the number of presentations given, and the most frequently requested topics. In recent years, staffing limitations have necessitated the curtailing of this tracking effort. However, the most recent effort to obtain this information, September-November 1996, showed that, out of 63 presentations that reached an estimated 3,193 people, schools, senior citizens groups, garden clubs and libraries most often requested Pinelands speakers. Also, the most frequently requested topic was a Pinelands overview.

Annual Pinelands Short Course

The Commission has undertaken several initiatives over the years to enhance the public's understanding of, and appreciation for, the cultural and environmental treasure that is the Pinelands. Among the most prominent of these is the Pinelands Short Course, a day-long, adult educational opportunity that has been held on the first Saturday in March each year since 1989. Cosponsored by the Commission and the Cook College Office of Continuing Professional Education at Rutgers University for its first twelve years, the Short Course has annually attracted more than 300 participants. In 2001, the venue for the Short Course was moved to The Richard Stockton College of New Jersey, where it was co-hosted by the College's Division of Natural Sciences and Mathematics. It has enjoyed the support of the New Jersey Education Association's Professional Development Institute since its inception and is now in the planning stages for the 2002 session, again to be held at Stockton.

“Professional Development Provider”

The Commission became registered as a New Jersey Department of Education Professional Development Provider in 2001. In 2000, this Department mandated that teachers complete 100 hours of continuing professional development every five years from a registered provider. The Pinelands Short Course and the Pinelands Curriculum Guides, which contain lessons keyed to the state Core Curriculum Content Standards, are ideally suited to professional development. Attendance at the Short Course and dissemination of the curriculum guides will likely increase now that they are officially registered as contributing to the Department's continuing education requirement.

Public Outreach through Cultural Festivals, Conventions, and In-Service Days

The Commission remains actively engaged in a number of other educational and interpretive efforts. Staff members annually participate in statewide events and a minimum of six teachers'

conferences and conventions. In the past these have included the New Jersey Science Convention, the Alliance for New Jersey Environmental Education Conference, the Council for Elementary Science International-New Jersey Conference, the New Jersey Association for Supervision and Curriculum Development, the New Jersey Council for Social Studies, Super Science Weekend at the State Museum, The Hun School Earth Day, and the New Jersey Education Association's Environmental Education Conference. The Commission has also been represented at teacher in-service days for school districts in Cherry Hill, Stafford and Pemberton Townships, and the Gateway Group.

When appropriate and as scheduling allows, staff members also participate in issue-oriented public seminars and general outreach activities. The Commission is sometimes represented in classroom settings where Pinelands topics such as environmental stewardship are discussed and at area fairs and festivals with a Pinelands theme.

Pinelands Commission literature, including monthly Commission packets and press packets, are provided to four Pinelands repositories: the State Library in Trenton, the Alexander Library on the Rutgers College Campus in New Brunswick, the Richard Stockton College Library in Pomona, and the Burlington County College Library in Pemberton.

Pinelands Interpretation Grants

Two Intermodal Surface Transportation Efficiency Act grants were awarded to the Commission in the past six years to advance Pinelands interpretive efforts. In concert with the National Park Service and the NJDEP's Division of Parks and Forestry, the Commission received grant funds totaling \$1,168,000 (\$194,000 in 1995 and \$974,000 in 1996). These monies will be used at a number of different locations in the Pinelands for promotional activities, including highway signage at the boundaries of the Pinelands, uniform signage within the Pinelands to alert travelers to special areas of interest, placement of information/orientation kiosks at major access points, establishment of wayside exhibits at key locations, and development of exhibits and facilities at the eastern visitor contact station at Double Trouble State Park. Pursuant to agreements among the three partners, the National Park Service plays a lead role in organizing and implementing these interpretive projects.

Currently, six wayside exhibits are being fabricated and, once complete, will be installed at state parks and forests throughout New Jersey's Pinelands. They will introduce visitors to the region's highly acidic soil and water conditions, traditional industries, fire ecology, plant and animal life, and people. Three kiosk panels that geographically orient visitors and introduce them to the people and places that make the Pinelands special are also being made. By the end of calendar year 2001, five architectural firms had submitted proposals for the gateway/visitor center that will be built at historic Double Trouble. Unfortunately, state fiscal concerns have prompted a spending freeze. Work cannot begin on the center until the freeze is lifted.

New Jersey Coastal Heritage Trail

The Commission, in conjunction with the National Park Service-Southern New Jersey Office, the NJDEP, the New Jersey Department of Commerce, and the Division of Travel and Tourism,

participated in the initial phases of this trail's development. The Trail consists of five themes: (1) Coastal Communities, (2) Relaxation and Inspiration, (3) Maritime History, (4) Wildlife Migration, and (5) Coastal Habitats. When complete, this trail is intended to "promote public appreciation, education, understanding and enjoyment, through a coordinated interpretive program of certain nationally significant natural and cultural sites associated with the coastal area." In 1993, the "Maritime History" Trail was officially dedicated in a ceremony at Fort Mott State Park and opened to the traveling public.

Educational Outreach at the Sullivan Center

The newly opened Richard J. Sullivan Center for Environmental Policy and Education presents the Commission with a host of policy, educational, interpretive, and outreach opportunities. The Center's library can serve as a repository for irreplaceable Pinelands documents that can be scanned and catalogued on the premises. A touch screen kiosk can be installed, perhaps in the lobby, which can provide visitors with easy access to information about the natural and cultural history of the region, highlight CMP resource information, list environmental organizations, and suggest recreational opportunities. Access to the Commission's website will, of course, be made available to the public at the technology center and the website itself will be revised for inclusion of Pinelands Curriculum Guide lessons. These are but a few of the major programs that can advance the Commission's ongoing efforts for public education and outreach.

A business policy is being developed to guide these and other policy-related activities at the Center. Funding will be, of course, a key to the Center's success.

Historic Photo Collection

Efforts are also under way to organize a collection of labeled historic Pinelands photos on CD-ROM as a way of permanently storing priceless images of the region. The pictures will be used in a variety of future Commission publications and on the Pinelands website. The website will also eventually house a "virtual tour" of the Pinelands for classroom use and for the general public. The Internet tour will allow "e-travelers" to view sites reflecting a wealth of Pinelands experiences.

CHAPTER 6

CULTURAL RESOURCES

The Mission Statement of the Pinelands Commission, in part to “preserve, protect, and enhance the natural and cultural resources of the PNR,” is reflected in the regulations and programs of the CMP. N.J.A.C. 7:50-6.151, et seq., contains the provisions intended to ensure that this record of man’s tenancy of the Pinelands is preserved for future generations to study and appreciate.

The Commission continues to work with municipalities, agencies, and property owners to enhance their efforts to preserve and protect cultural resources in the Pinelands while allowing appropriate development to proceed in a manner that achieves those objectives. Staff has and will continue to work with these parties to facilitate the timely review of the re-use of, and improvements to, historic structures. The costs associated with renovations and the uncertainty of the regulatory process can deter interested parties from proceeding with the re-use of historic structures. In an unprotected state, many resources will continue to deteriorate until a property owner successfully develops a suitable approach.

CULTURAL RESOURCE MANAGEMENT PLAN

Human beings have occupied the Pinelands for at least ten millennia. In doing so, they have both adapted, and adapted to, the environment they encountered in order to meet their needs. Cultural resources are the physical evidence of that occupation that occur on and below the landscape. They are the projectile points, ceramics, and hearths of prehistoric Native Americans as well as the houses (in all their myriad styles), roads, and mill dams of generations of European settlers. They are the separate communities of historically oppressed peoples, like Rosedale and Chesilhurst, the homesteads of African Americans seeking equality, and Woodbine and Mizpah, havens for Jews fleeing pogroms. They are the final testament of our predecessors, some of whom have vanished utterly from our consciousness, and the sole unbiased record of all those who went before us.

Historic Period Plan

In early 1991, the Commission issued a revised *Cultural Resource Management Plan for Historic Period Sites* (CRMP), which was intended to supplement the CMP by providing specificity about the nature and extent of surviving vestiges of historic period culture. In any culture, “history” only begins when people develop a written record and can therefore pass on their accounts by means other than oral tradition. In the Pinelands this occurs with the arrival of Europeans in the first half of the seventeenth century. The long period of Native American habitation, being a non-literate culture, is considered to be prehistoric.

The 1991 CRMP improved upon an earlier version from 1986 by deleting redundancies in the recommended treatment measures and by including guidelines for municipal historic inventories. It organized the great wealth of historic resources in the Pines into functionally related “resource

groups” so that their impact upon the history and evolution of the local culture could be more easily analyzed. These groupings included such categories as iron and glass manufacturing sites, transportation facilities, agriculture, and maritime pursuits. The physical components normally associated with each of these “resource groups” were identified and a research agenda was outlined for each group, so that the study of individual sites would contribute to resolving the key questions relating to that group.

Prehistoric Period Plan

Not addressed in the CRMP of 1991, and in fact far more difficult to address in a management plan, was the material culture of the prehistoric Native Americans. The trouble in accounting for these resources lies in their great antiquity and nearly complete invisibility. The large majority of such sites are virtually undetectable, usually being buried upwards of a foot or more below ground. Compounding this problem is the fact that they are often oriented toward ancient topographic features (stream courses and post-glacial ponds) that no longer exist. Moreover, only a tiny fraction of the original artifacts at any given site tends to survive - in the form of small, obscure stone implements and waste pieces from stone tool production. Yet, meager as the evidence is, it is all we shall ever know of the people who made the Pinelands their home for thousands of years.

The Pinelands Commission realized the importance of preserving the scant surviving record of the earliest Americans, if we are ever to comprehend their culture, and began planning for its detection and analysis in the latter 1980s. At that time the Commission received a federal Historic Preservation Fund (HPF) grant intended to underwrite the cost of drafting a comprehensive, detailed work plan, including estimates of time, effort, and expense, for development of a predictive model of prehistoric site occurrence. The work plan envisioned a combination of field testing to detect previously unknown prehistoric sites and careful recording of the environmental characteristics in the immediate vicinity. The field testing was actually designed to catalogue both site and non-site locations and then, by means of a regression analysis, determine what types of locales (i.e., which of the environmental variables, either alone or in combination) were attractive to Native Americans for occupation or use. Subsequent testing over a period of years was to hone the model's accuracy. In 1988, grant funds were again used to initiate the first year's field work on the model. Unfortunately, the HPF grant allocation for New Jersey was greatly reduced in 1989 and field work had to be abandoned before any truly meaningful results became available.

More recently, the Commission has found itself able once again to pursue development of the prehistoric predictive model, due mostly to the advances in geographic information systems (GIS) that have occurred over the past decade. With the ability afforded by GIS to identify a series of environmental attributes at any given point in the Pinelands, it is now possible to characterize specific conditions that tend to recur at places frequented by prehistoric peoples. Conversely, and of equal value for a reliable model, the setting at non-site locations can also be determined. This information has value since the only way to truly know where prehistoric people settled is to also know where they didn't settle.

In 2000, a member of the Commission's GIS staff began work on a Master's thesis intended to create a predictive model of prehistoric site occurrence in the Atlantic and Burlington County portions of the Pinelands. His thesis, which is now nearing conclusion, examines 370 site and non-site locations, derived from cultural resource surveys submitted to the Commission over the past twenty years. Five environmental variables (slope, elevation, soils, distance to water, and depth to seasonal high water table) are considered in the analysis, which will identify the specific characteristics and value of each variable, individually or in tandem with others, in determining the likelihood that prehistoric sites will or will not occur elsewhere, given a similar setting.

This critical information will be used in future years to generate a management plan applicable in the review of development applications and for research into Pinelands prehistory. Eventually, the model and the management plan can be fine-tuned so that the association of environmental conditions with site occurrence in specific prehistoric periods can be discerned. In this way, the environmental settings which attracted Native Americans in Paleoindian times (ca. 10,000-8,000BC) can be differentiated from those favored by the Amerindians of the Woodland Period (ca. 1,000BC-1600AD).

DESIGNATION OF HISTORIC RESOURCES

Designation of the significant cultural resources of the Pinelands, be they representative of the prehistoric or the historic period, is the method whereby they are acknowledged and permanently protected. Designation can be accomplished by entry on to the New Jersey or the National Register of Historic Places or through a formal action by the Commission or by a Pinelands municipality.

Municipalities may designate their significant resources by means of a local ordinance, which identifies and regulates either individual sites or, as in most cases, historic districts. In the past, historic districts were established in Medford, Hamilton, and Evesham Townships, Medford Lakes and Berlin Boroughs and the City of Estell Manor. More recently, the Borough of Lakehurst solicited the Commission's assistance in defining and designating a historic district in its downtown area. Lakehurst's fascinating history as first an iron furnace milltown and subsequently a railroad hub and finally a resort destination was researched by the Commission staff, which submitted a National Register of Historic Places nomination to the New Jersey Historic Preservation Office (NJDEP) in March 2001; the nomination is still pending. The Commission has also drafted a historic district ordinance for consideration by the Borough and its citizenry.

The National Register of Historic Places is a nationwide program that operates under the auspices of the US Department of the Interior. Outside of the Pinelands it is mainly an honorific title which celebrates the buildings, structures, sites, and objects reflective of the development and evolution of local, regional, and national culture. The Register affords a measure of protection against public projects that will adversely impact significant resources, but its main function is to raise awareness of our shared history. Its counterpart within the State, the New Jersey Register of Historic Places, is a similar program employing the same selection criteria and imparting equivalent protection.

Within the Pinelands, New Jersey and National Register sites enjoy a considerably enhanced level of protection, however, due to the CMP provisions at N.J.A.C. 7:50-6.154 and 6.156. The regulations grant Pinelands Designation to all Register sites and require that a Certificate of Appropriateness be issued before any alterations to such sites may take place. This is the same requirement that applies to sites designated by vote of the Pinelands Commission or by a municipality in a local ordinance. At the request of a municipality or property owner, the Commission staff has on several occasions undertaken the considerable research and documentation necessary to prepare an acceptable Register nomination. In addition to the pending Lakehurst Historic District nomination, the Commission staff drafted successful nominations for the William Townsend House (Dennis Township), the Jacobus Evangelical Lutheran Church (Folsom Borough), the Free Library and Reading Room (Monroe Township), Fenwick Manor (the Pinelands Commission offices), and Pleasant Mills (Mullica Township).

Inventory of Pinelands Designated Cultural Resources

The sites listed in Table 6.1 are Pinelands Designated by virtue of their entry on to the New Jersey or the National Register of Historic Places or by designation by the Commission. They are in addition to the resources which have been locally designated by municipal action.

Table 6.1
Inventory of Pinelands Designated Cultural Resources

<u><i>Designated Resource</i></u>	<u><i>CRMP Resource Group Attribution</i></u>
<u>Atlantic County</u> Egg Harbor City: Dr. Smith’s Sanatorium Egg Harbor Township: Captain John Jeffries Burial Marker Estell Manor: Estellville Glass Works Industrial Historic District Estell Manor: Head of River Church Folsom: Jacobus Evangelical Lutheran Church** Galloway: L. N. Renault and Sons Winery Hamilton: Abbott’s Modern Cabins Hamilton: Mays Landing Historic District Hamilton: Weymouth Road Bridge Hamilton: “Weymouth” Schooner Hammonton: Methodist Cemetery* Hammonton: William L. Black House Mullica: Pleasant Mills** Port Republic: Port Republic Historic District	Settlements Unattributed Glasshouse Settlements Settlements Minor Industries Transportation Settlements Transportation Maritime Settlements; Glasshouses Residential Architecture Minor Industries Settlements
<u>Burlington County</u> Bass River: Bead Wreck Site Medford: Singer House* New Hanover: Hanover Furnace Pemberton: Benjamin Jones House Pemberton: Fenwick Manor** Pemberton: Greenberg Prehistoric Locus* Shamong: Atsion Village Southampton: Bishop-Irick House Southampton: Retreat Factory Village* Washington: Batsto Village Woodland: Shamong Hotel	Maritime Residential Architecture Iron Forges and Furnaces Residential Architecture Agriculture; Residential Architecture N/A Iron Forges and Furnaces Residential Architecture Minor Industries Iron Forges and Furnaces Settlements

<u>Designated Resource</u>	<u>CRMP Resource Group Attribution</u>
<u>Camden County</u> Berlin Borough: Berlin Historic District	Settlements
<u>Gloucester County</u> Monroe: Free Library and Reading Room**	Glasshouses
<u>Cape May County</u> Dennis: Dennisville Historic District Dennis: Henry Ludlam House** Dennis: William Townsend House** Upper: South Tuckahoe Historic District Woodbine: Woodbine Brotherhood Synagogue	Settlements Residential Architecture Residential Architecture Settlements Settlements
<u>Ocean County</u> Berkeley: Double Trouble Historic District Jackson: Cassville Crossroads Historic District Lakehurst: Torrey-Larrabee Store Manchester: Hangar #1, Lakehurst Naval Air Engineering Center	Agriculture Settlements Settlements Transportation
<u>Multiple Counties</u> Pemberton (Burlington)/Manchester (Ocean): Whitesbog Village Egg Harbor City, Galloway, Port Republic (Atlantic)/Bass River, Washington (Burlington): Mullica River/Chestnut Neck Historic District	Agriculture Multiple

Except as indicated by a single asterisk (*), all sites are Pinelands Designated by virtue of being listed on the New Jersey and/or the National Registers of Historic Places; sites followed by an asterisk have been Designated by vote of the Pinelands Commission.

A double asterisk (**) indicates that the nomination to the National Register was either submitted by, or largely researched by, the Pinelands Commission staff.

PROJECT REVIEW

A cultural resource survey is required as part of the information necessary to complete a major development application or any application in a Pinelands Town or Village. The requirement is usually waived, but is invoked whenever a proposed project has the potential to affect a significant historic or prehistoric resource (N.J.A.C. 7:50-6.155(a)). Guidelines for the conduct of such surveys are incorporated as an appendix to the CRMP. The guidelines are in the form of a report format, with categorical headings and sub-headings that must be addressed in the body of any survey submitted to the Commission. This “forced answer” format ensures that all the historic and prehistoric resources of the Pinelands subject to development related impacts are correctly and completely recorded. The uniformity in the presentation of data has also aided researchers using the reports to extract specific information critical to their analyses. For instance, development of the prehistoric predictive model discussed above required the accumulation of the same types of cultural and environmental data from a large number of survey reports. This effort was greatly aided by the constancy of the format.

Deciding when to require and when to waive a cultural resource survey as part of a development application is not always easy or straightforward. Choosing whether to require a survey for the

possible presence of a prehistoric site can be particularly difficult, given the fact that these sites rarely leave any trace at the surface. Nevertheless, the Commission staff endeavors to review applications carefully and to be judicious in invoking the survey requirement. As Table 6.2 indicates, 2310 development applications were reviewed by the staff between July 1991 and June 2001. Cultural resource surveys were required for 302 of them, 13.1% of the total. During the previous period for which comparable records were kept (December 1988 to June 1991), surveys were required for 31% of applications. This approximately 58% decline in the proportion of applications requiring surveys over the past ten years is probably due in large measure to several factors. The number of large-scale projects, such as residential subdivisions with many units, has declined in the areas of the Pinelands where there is a known concentration of potentially significant resources, e.g., Medford and Evesham Townships (where prehistoric site occurrence is especially well attested). Moreover, twenty years of experience and of accumulated surveys have allowed the Commission staff to waive surveys in most instances for certain types of applications and for certain areas of the Pinelands where prior survey results indicate a low likelihood of site occurrence.

Tables 6.2 and 6.3 further addresses the results of the cultural resource surveys that were submitted between 1991 and 2001. During that time, 268 survey reports were reviewed. This figure includes some double-counts because 58 reports were initially determined to be deficient in that they did not meet the reporting requirements contained in the Commission's "Guidelines for Cultural Resource Surveys." Almost all of these were corrected, resubmitted, and later deemed to be complete by the staff. Of 210 reports that either were determined complete or presented sufficient information to make a determination, 115 (54.8%) found evidence of a historic or prehistoric resource, although in most cases the resource was not judged to be significant (i.e., it was not found to meet the criteria for Pinelands Designation, which are identical to those used for the New Jersey and the National Registers of Historic Places). This is consistent with the percentage of surveys that reported finding a resource in the earlier period (58% - 12/88-6/91). Moreover, of the 95 survey reports that did not uncover a resource, 17 (17.9%) were unsolicited and probably would not have been required by the Commission to complete the development application.

Table 6.2
Review of Development Applications for Cultural Resources
(July 1991 through June 2001)

CULTURAL RESOURCE SURVEYS	Total	Percent
Surveys Required	302 ¹	13.1%
Surveys Not Required	2008	86.9%
Cumulative Total	2310	100%

¹The total of 268 reports actually received during this period does not reflect, or correspond to, the number of surveys required. There is often a considerable lag time between a survey being requested and a survey being submitted. A number of the reports received and reviewed by staff from 7/91 to 6/01 were actually required during the earlier reporting period ending 6/91. Moreover, many of the surveys requested over the past ten years have not been submitted, either because the development was abandoned or because the development application is still outstanding

Table 6.3
Cultural Resource Survey Results
(July 1991 through June 2001)

RESULTS OF COMPLETED SURVEYS	Total	Percent
Cultural Resources Identified	115	54.8%
No Cultural Resources Identified	95	45.2%
Cumulative Total	210¹	100%

¹This includes both solicited and unsolicited surveys. Of the surveys actually requested by the Commission pursuant to a development application, 59.6% found evidence of a cultural resource.

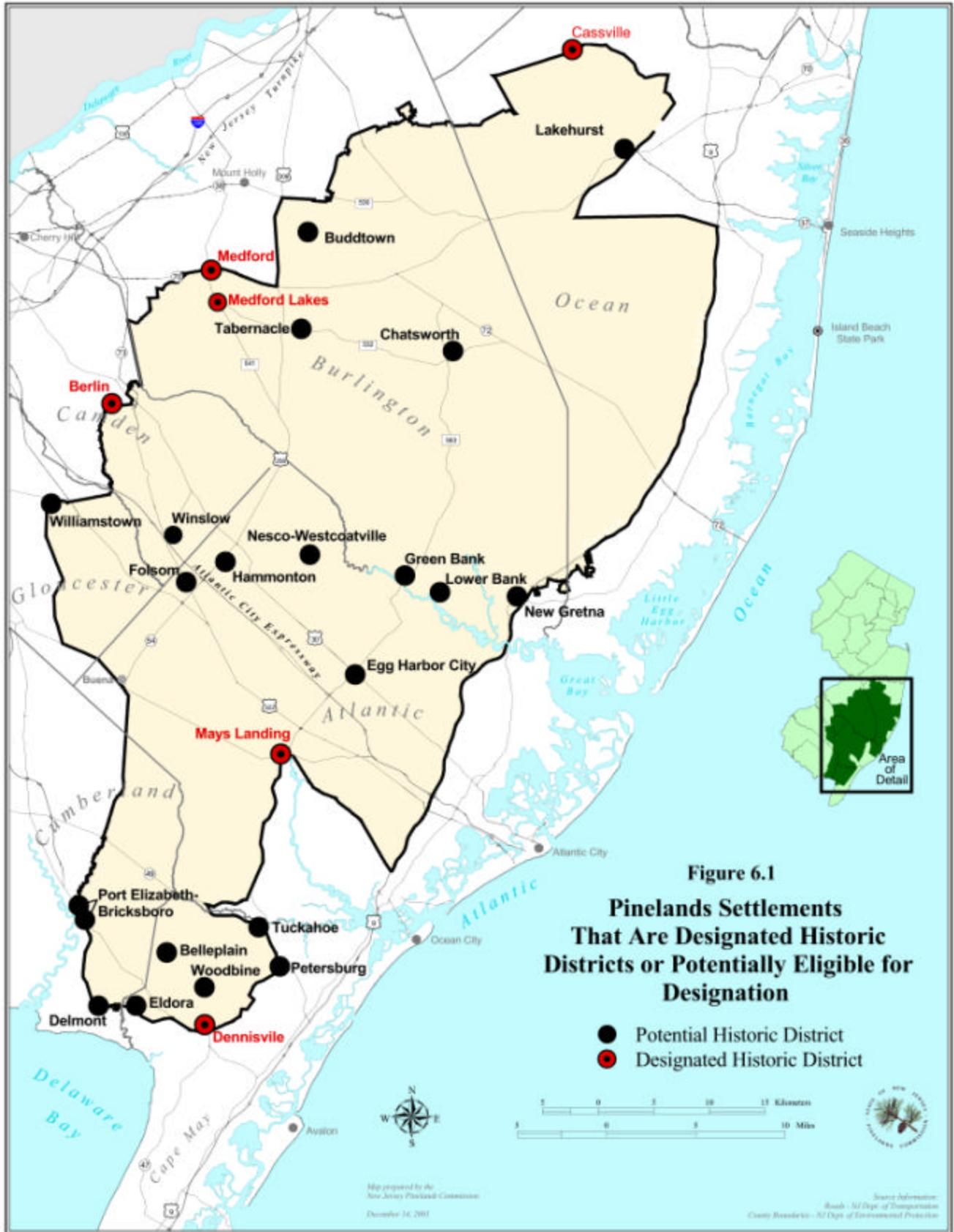
For every application the staff tries to accommodate project plans while also ensuring that any significant cultural resources on site are properly treated. In the great majority of cases a proposed development proceeds without redesigns or any undue delay because of a cultural resource concern. However, this is not always an easy task and occasionally difficulties arise. A recent application in Medford Township for conversion of a historic Quaker Meeting House to office space is an example of such a difficulty. In spite of multiple suggestions, a circulation and parking plan that satisfies project needs and protects the historic resource has yet to be agreed upon. More typical of the outcome in such cases was an application for alterations to a caretaker's cottage on the grounds of yet another Meeting House in Medford. The staff worked closely with the applicant in this instance to document the historic significance of the Meeting House and its grounds and the application received a timely approval.

The constant need for upkeep and upgrades to public infrastructure results in a relatively large number of development applications each year for road widenings, installation and/or improvements to buried utilities, and similar types of "linear development." Because such development projects can stretch for miles and cross environmental settings known to have been attractive to prehistoric Native Americans, the staff must often require a cultural resource survey as part of the application process. In order to keep survey costs to a minimum and limit the investigation to areas of high resource potential, the staff developed specific guidelines for the conduct of such surveys. These guidelines call for field work to be undertaken only where there are physical or documentary evidence of a possibly significant site or along corridors where the likelihood of a significant site is high (e.g., near stream courses, where ancient peoples are known to have settled).

OTHER MAJOR ACTIVITIES AND ANALYSES

Preliminary Cultural Resource Investigations

A cultural resource survey is often deemed necessary by the Commission in order to identify and protect the invaluable cultural heritage of the Pinelands. Archaeological sites in particular are essentially a kind of book, containing information about the lifestyles and social organization of long vanished peoples, and each site is the only copy of that book that exists. If the site is disturbed or destroyed without first being examined by trained professionals, unique information about our forebears is lost for all time. However, while surveys can provide critical data, they



also can impose a financial burden upon applicants, particularly those applicants for whom there is little or no expectation of future profit pursuant to their development and no possibility of writing off the survey expense as a cost of doing business.

The Pinelands Commission was concerned about applicants whose modest projects could be imperiled by the survey requirement, such as foresters and homeowners in historic areas of Pinelands Towns and Villages, and also about cash-strapped municipalities whose road and infrastructure improvements triggered the need for a survey. Consequently, in the mid 1990s the Commission staff began offering its services to qualifying applicants in performing preliminary investigations to determine whether in fact a full survey was warranted. These preliminary investigations are a kind of truncated survey with an emphasis on field testing. They are not an acceptable alternative to a full survey in most cases. However, they can be helpful in deciding when a full survey is justified for small projects occurring in areas with a high potential for significant cultural resources.

In recent years, the Commission staff has undertaken preliminary cultural resource investigations for at least 24 development applications, including sites slated for forestry activities, home replacements, church expansions, road improvements, state and county projects, and municipal parks. The Commission also completed more thorough surveys, compiling information sufficient for National Register nominations, for a historic meeting house in Medford Township and for a potential historic district in Egg Harbor City.

Survey of Potential Historic Districts

The Commission has actively sought in recent years to return as much decision making power as possible to local authorities. As part of this effort, the staff has developed various planning initiatives designed to encourage Pinelands municipalities to take responsibility for managing growth while protecting their own natural and cultural resources. One such initiative was begun in 1993 to help municipalities identify and preserve the historically significant buildings and structures within their jurisdiction. At that time the Commission undertook a region-wide survey of potential historic districts, reviewing local histories and contemporary and historic maps and eventually assembling a list of 199 place names within 42 Pinelands municipalities. These sites were then evaluated for possible historic district status. Each place was visited for an assessment of the nature and extent of its surviving historic architecture and the results were compiled in a report entitled, *A Survey of Potential Historic Districts in the Pinelands*.

The survey identified a total of 23 areas in 19 Pinelands municipalities which appeared to meet the criteria for the New Jersey and the National Registers of Historic Places and for Pinelands Designation. Twenty of these (Note: Port Elizabeth and Bricksboro, two neighboring settlements in Maurice River Township, are listed as a single, non-contiguous district in the survey) were conventional historic districts - clusters of residences, commercial buildings, outbuildings, and other structures in a clearly defined village/town setting. However, three less orthodox districts were intentionally included to demonstrate that not all areas of historic consequence are necessarily concentrations of old buildings. These areas were the "Pemberton-Southampton Agricultural Historic District" and the "Indian Mills Agricultural Historic District," open, broad landscapes predominantly comprising fields and well preserved farm buildings from the

nineteenth century, and the “Delsea Drive Historic District,” described in the report as “a ribbon of history, arcing through an area of some of the best preserved eighteenth and nineteenth century residences, farms, and villages in the State.” (Figure 6.1 shows the location of the twenty traditional settlements identified as having historic districts potential.)

The survey report was subsequently sent to all the municipalities and counties within the Pinelands, with a cover letter offering Commission assistance in developing a formal district. Several local governments expressed an interest, but only one, Lakehurst Borough, is currently pressing forward with a district nomination.

Memoranda of Agreement Involving Cultural Resources

Indicative of the Commission’s continuing efforts to streamline its overall development application and approval processes, including the cultural resource requirements of the CMP, the Commission has included provisions in several recent MOAs with public agencies addressing cultural resource requirements. In general, these provisions encourage early coordination on cultural resource matters, provide additional cultural resource guidance not specified in the CMP and, where appropriate, streamline the Commission’s cultural resource application requirements.

A 1998 MOA with Burlington County that simplifies the Commission’s application process for certain proposed road improvements and other types of minor development activities includes specific provisions to streamline the Commission’s cultural resource review process and requirements. In particular, the MOA provides for early consultation with Commission staff on cultural resource matters and joint site inspections to identify areas not requiring cultural resource field testing. It also specifies the instances in which a cultural resource survey will not be required.

The Commission is currently working with the NJDEP Division of Parks and Forestry and Division Fish and Wildlife on MOAs that include an expedited process for addressing cultural resources. These draft MOAs include provisions that address obtaining an advanced determination for the need for a cultural resource survey and provide for appropriately qualified the NJDEP staff to make cultural resource determinations.

In addition to these recent MOA efforts, when the Commission adopted amendments to the CMP in 1996 regarding forestry, those amendments included a recognition by the Commission that applying the CMP cultural resource survey requirement to forestry applications could have a chilling effect on forestry applications in the Pinelands, an historic industry in the Pinelands. To address that potential impact, the Commission included in the CMP forestry amendments a provision that allows an applicant to request that the Commission undertake any required cultural resource survey.

ISSUES FOR FUTURE CONSIDERATION

Now that the Commission has identified a series of potential historic districts within the Pinelands, only one of which is currently in the process of being designated, the long-term

status and treatment of the remainder is a matter of concern. These districts, most of which are settlements or portions of settlements, comprise examples of architectural styles reflecting the lifestyles and occupations of the people of the Pines over two hundred years; their preservation should be addressed through a coordinated planning effort among the State, the Commission, and county/municipal authorities.

The concern extends to development applications within the boundaries of the identified districts and how best to accommodate a proposed project in an area recognized by the Commission as having cultural significance to the region. A question arises as to what extent the development should be designed to maintain the historic appearance of its environs, even though those environs are not formally designated and there are no local controls in place to guide permitting agencies and the owner.

The Commission realizes that assigning design restrictions at a relatively late stage in project planning does not advance anyone's interests. A far more effective approach would be to involve municipalities early on in the development of both priorities for the district's preservation and clear, well defined measures to affect that end. The measures should be crafted in recognition of local needs and in a manner that imposes a minimal burden on a project consistent with maintenance of the local heritage. They should also be couched in terms that acknowledge the fact that historic preservation promotes good design and that good design promotes good economic development. This should be done as soon as possible so that approval boards and developers are fully aware of the preservation issue and the means to resolve it. Rather than prescribing requirements on a case-by-case basis for individual applications, the Commission might consider developing incentives which would make design and implementation of local ordinances or other local initiatives more attractive. These could include provisions for greater local oversight of project planning and compiling a package of economic inducements, such as current grant availability and some sort of tax abatement or other investment credit.

Another issue that deserves Commission consideration is the feasibility of preservation-in-place of certain historic structures. The preservation of historic structures at their original location and with their historic appearance intact is of course a clearly enunciated goal of the CMP (N.J.A.C. 7:50-6.156). Often, this can be accomplished fairly easily as part of a development approval. For instance, rehabilitation of a historically significant farmhouse can be a condition of approval of a residential subdivision for the rest of the farmstead. Yet, the maintenance of historic buildings can sometimes be more difficult to fold into a project's costs. It can cause a hardship to owners of modest means, particularly when major repairs are necessary for continued use or conversion and/or there is little prospect for a financial return. Buildings that were once hallmarks of a community's identity, but are now unused and deteriorating, can present the Commission with the unpleasant choice of deciding when to allow their removal and when to require an active effort to find a new life for them. Simply denying a demolition permit for the meanwhile is not a long-term solution, since there is no requirement for continued maintenance pursuant to a denial. Deterioration will likely proceed apace until there is no alternative to demolition.

Again it appears that more active involvement on the part of the Commission, as time and schedules permit, may be a better answer. Providing technical assistance to owners of historic properties in soliciting new uses for the site and in qualifying for available preservation tax incentives may revive its prospects for a continued useful life. Coordination between the Commission and the municipality in the effort would be mutually beneficial, since a viable site is better for both the township's appearance and its ratable coffers.

Finally, with development of the predictive model of prehistoric site occurrence in the Pinelands seemingly nearing completion, the Commission should begin to examine ways to integrate the results into the project review process and perhaps into the CMP. Certainly the model should be subject to a period of field testing to determine its accuracy before it is fully implemented. After the model has been fine-tuned and proven its worth, it should become the main vehicle whereby the need for a survey in the application process is assessed.

At this point, the Commission may wish to examine the possibility of extending the research beyond site locations in Burlington and Atlantic Counties (which are the focus of the staff member's thesis). By applying available GIS data to survey reports drawn from other counties, and perhaps by including other environmental variables in the equation, the model should become ever more reliable as a tool for the review of applications as well as for basic research into the culture of the earliest people of the Pines.

CHAPTER 7

OTHER PLANNING ACTIVITIES

Over the past ten years the Commission has been involved in a number of initiatives that have arisen either as an outgrowth of administration of the CMP or from a desire to assist Pinelands municipalities that have faithfully maintained the natural wonders of the region, but perhaps at the expense of their economic and fiscal well-being. These initiatives have addressed a wide range of issues and opportunities, including, among others: effective alternatives to standard residential septic systems; programs to provide economic stimuli to rural Pinelands communities; funding for infrastructure upgrades in Regional Growth Areas and Pinelands Towns and Villages; and management of the Mullica River watershed, in coordination with multiple Pinelands municipalities.

ANALYSIS OF ALTERNATIVE SEPTIC SYSTEMS

The high quality of surface and ground water resources in the Pinelands is one of the defining characteristics of the region and a major impetus behind the creation of the PNR. Both the federal and the State Pinelands statutes call for the preservation, protection, and enhancement of the significant values of the land and water resources of the region and its unique ecosystem. Water resources are protected by a combination of land use and water quality programs established in the CMP.

The water quality program is aimed at controlling the amount of nitrogen that enters the environment both because, when converted naturally to nitrate, it is a significant pollutant in its own right and because it serves as an indicator of change in overall water quality. Nitrogen reduction is accomplished primarily by limiting its presence in the wastewater from on-site septic systems to 2 milligrams per liter at the property's boundaries. With a standard septic system this level of nitrogen dilution can only be accomplished on a lot of at least 3.2 acres. However, if a treatment system specifically designed to reduce nitrogen in the effluent is used, then the 2mg/l goal can be met on a smaller lot.

Currently, the Pinelands Commission permits development with a septic system (in certain designated areas) on lots between one and 3.2 acres in size (generally, lots smaller than one acre can only be developed if they will be sewerred) if they will be served by one of two alternative wastewater disposal systems that are intended to reduce nitrogen: pressure dosing and RUCK. Field studies undertaken by the Commission over the past decade, however, found that the RUCK system was prone to installation and operational failures and required a minimum 1.5-acre lot to meet the 2mg/l standard. Pressure dosing systems, which are the most common and least expensive alternative system used in the Pinelands, were determined to be no better at reducing nitrogen than conventional systems. For this reason the Commission decided to explore the potential of other alternative systems for use on lots of less than 3.2 acres.

In March 2000, the Commission formed a special committee to investigate alternative septic system technologies that would better meet the water quality requirements of the CMP. The Ad Hoc Committee on Alternative Septic Systems, comprising members of the Commission and representatives of three organizations (the PMC, the Pinelands Preservation Alliance, and the New Jersey Builders Association), immediately began conducting extensive research into the issue. The Committee contacted companies that provide on-site technology demonstrations nation-wide, retained a consultant to assess the performance of selected technologies, met with vendors and other state and local agencies, and began coordinating with DEP on an ongoing basis. The Committee and its consultant eventually chose a total of five technologies for a more detailed analysis, including several that had been approved for use in other states. The five systems were AWT Environmental's Bioclere trickling filter, Bio-Microbics FAST System, the Cromaglass and the Amphidrome sequencing batch reactors, and the Ashco RFS III system. The Committee also met with representatives of four of the five systems (Amphidrome, Bioclere, Cromaglass, and FAST) and obtained information on their functioning, reliability, and cost.

Additionally, after completion of the alternatives analysis, a matrix of responses was prepared to a questionnaire completed by the competing vendors on technology characteristics, including complexity, cost, operation and maintenance requirements, and other features. Given the difficulty in developing reliable estimates of comparative costs, the Committee recommended that a cost-estimating consultant be hired. When completed, the results of the consultant's study will be shared with the Commission as it considers next steps.

Ad Hoc Committee Findings and Recommendations

The Committee's consultant on the performance of the five selected alternative systems concluded four of the systems performed sufficiently well to meet the Commission's standard for nitrogen concentrations at the boundary of a one-acre lot (14mg/l exiting the system, which translates to 2mg/l average at the property line). The systems that met this standard were the FAST, Cromaglass, Bioclere, and Amphidrome, although their performance depended to some degree on the quality of the influent wastewater. The Ashco system yielded acceptable results for lots of 1.5 acres or more. The initial assessment of costs for the systems tested varied widely, from approximately \$1,100 less than a standard septic system to \$10,000 more, but the Commission is awaiting the consultant analysis with more precise costs for installation at single family home and clustered residential sites.

The Committee further concluded that the Commission should no longer approve the use of pressure dosing systems for new development on lots of less than 3.2 acres and recommended establishment of an interim program to authorize the use of the alternative systems that had been examined. The Committee's specific recommendations for the interim program included the following:

- ?? Design the program to remain in place for at least a three-year period while a long-term approach is developed;
- ?? Seek funding for a wastewater management coordinator staff position (funding has been secured);

- ?? Authorize the five technologies examined for use on one-acre lots during the interim period; however, the Ashco system would only be approved for use on lots of at least 1.5 acres;
- ?? Amend the CMP to reflect approval of the five systems during the interim period; use of other alternative systems would be allowed on a case-by-case basis, provided they received DEP permits and met CMP standards;
- ?? Revise the CMP requirements so that newly installed RUCK systems are subject to the same stringent operational and maintenance safeguards as the five new systems;
- ?? Amend the CMP to eliminate the approval of pressure dosing systems on lots of less than 3.2 acres for nitrogen reduction purposes;
- ?? Authorize the suspension of systems being tested if they exhibit persistent problems;
- ?? Amend the CMP to facilitate municipal approval of community systems under certain circumstances; and
- ?? Pursue community systems with selected rural economic development program municipalities.

The Committee also developed a series of other recommendations for conditions on the use of the systems under review, for the owners of the systems and for local government and Commission responsibilities. A rule proposal to establish a Pilot Program for Alternative Design Wastewater Treatment Systems was approved by the Commission in December 2001 and will shortly be published in the New Jersey Register (see Chapter 1). Background on the issue, as well as the Ad Hoc Committee's findings and recommendations, can be found in the Committee's final report, which was published in August 2001 and is available from the Commission.

RURAL ECONOMIC DEVELOPMENT

Implementation of the CMP has achieved much success in preserving and protecting ecologically sensitive lands and in channeling growth to more suitable locations, mostly along the fringes of the Pinelands area. Many smaller rural communities, however, are located within the limited growth areas found generally in the central and southern portions of the region. They face some of the same challenges in maintaining and expanding their economic base as do other isolated towns nationwide, namely, a small population and employment pool, relatively minimal transportation networks, and limited local government services that frequently cannot provide the resources necessary for an aggressive effort to build infrastructure and attract new businesses. Moreover, certain traditional economic development opportunities are effectively limited in these municipalities by the environmental and land use policies of the CMP. Thus, it became apparent to the Commission over time that a plan for controlled and compatible economic growth was necessary to help address local needs. The Commission responded by working with state legislators to provide funding for a program intended to promote compatible development in the Pinelands municipalities most in need, and by launching an effort, in cooperation with as many as 16 municipalities, to identify and designate a Scenic Byway in the southern part of the region.

The Commission also worked specifically with several municipalities on various means to prevent business flight to other communities outside the Pinelands. For instance, in recent years

Buena Vista Township has lost businesses to a nearby community which has tax reduction and other financial incentives that Buena Vista cannot offer. Two of the Township's remaining industries are in a portion of the township where the absence of sewer service limits their expansion plans and could lead them to relocate elsewhere. The Commission staff has been exploring a variety of wastewater service and zoning options with the Township and neighboring Buena Borough.

Rural Economic Development Pilot Program

On August 30, 1997, the New Jersey legislature authorized a pilot program "to assist rural Pinelands municipalities in non-growth regions of the Pinelands in identifying economic development opportunities that complement regional requirements for resource protection and in attracting such development to the area" (S-1262 Pamphlet Law 1997 c.233 08-30-97). The Act appropriated \$250,000 for the pilot program and delegated responsibility for program development and administration to the Pinelands Commission. Key provisions of the legislation included specifying minimum criteria to select the participating municipalities; defining key activities of the pilot program (e.g., preparation of community assessments, creation of economic development strategies, design of promotional materials, signage, etc.); and requiring the Pinelands Commission to find ways to expedite development applications that result from the program.

The pilot program, as envisioned by the Commission, was based on the creation of municipal partnerships to explore development opportunities. In February 1998, the Commission invited 24 of the most rural Pinelands municipalities to submit requests to participate in the program and 11 of them responded with a formal submission. Their requests were evaluated according to criteria established in the Act and others determined by the Commission, including a demonstration of local commitment and intermunicipal cooperation. After a careful review of the submissions, the Commission selected four municipalities for entry into the program - Buena Vista, Mullica, and Dennis Townships and Woodbine Borough. Shortly thereafter, the program was expanded to incorporate the municipal partners of two of the entrants. Mullica Township formed a task force with Washington and Bass River Townships to address environmentally compatible development opportunities along the lower Mullica River corridor. Dennis Township partnered with Maurice River Township to examine mutually beneficial development possibilities. All the municipalities were required to designate primary contacts and to establish local economic development entities, if none already existed. To help cover their expenses, the Commission dispersed grants of \$3,000 for single communities and \$4,500 for joint partnerships.

After the participants had been selected, the Commission hired Whiteman & Taintor, a firm with national expertise in rural and small community economic development issues, to work directly with the communities throughout the duration of the program. Using a combination of community meetings, individual interviews, site visits, and analysis of social and economic data, Whiteman & Taintor identified each municipality's development objectives, outlined the opportunities that existed, and designed implementation strategies for their realization.

Eventually, the participating municipalities, the Commission, and the consultants produced a series of recommendations not only for realistic, community-based strategies to spur economic

growth, but also for complementary action at the regional and state level. The findings and recommendations for the municipalities were detailed in a series of three reports: the *Background Report*, which provided data on the overall economic conditions of the seven municipalities; the *Economic Development Strategies*, which contained recommendations specific to each community, based on such factors as developable land and the nature of the markets in the vicinity; and the *Implementation Strategies*, which described the steps, responsibilities, and resources necessary to effect the strategies, and suggested a schedule for action and a program for monitoring progress.

Table 7.1 reflects the key recommendations for community action that appeared in a final summary report on the pilot program produced by Whiteman & Taintor.

**Table 7.1
Summary of Community Recommendations**

Community	Focus Areas	Key Components of Economic Development Strategy	Key Components of Implementation Strategy
Buena Vista Township	<ul style="list-style-type: none"> ?? Town Center ?? Highway Corridor 	<ul style="list-style-type: none"> ?? Pursue light industrial and/or mixed use (retail, office, senior housing) development ?? Identify wastewater solutions for Route 54/40 intersection and Route 40 corridor ?? Establish village center at Routes 54/40 ?? Pursue complementary public investments (wetlands trail, farmers market, recreation center) ?? Target pharmaceutical-related businesses 	<ul style="list-style-type: none"> ?? Re-design Route 54/40 intersection in partnership with Buena Borough ?? Connect to Buena Borough treatment plant and construct small-scale treatment facility for eastern portion of corridor ?? Develop and implement marketing strategy (tourists, retirees, surrounding residents, technology businesses) ?? Construct public facilities
Dennis/Maurice River Townships	<ul style="list-style-type: none"> ?? Ecotourism ?? Dennisville Village 	<ul style="list-style-type: none"> ?? Develop and promote regional ecotourism theme based on less touristy/more rustic image ?? Pursue joint educational and marketing efforts with state/regional entities ?? Identify small-scale wastewater solution for Dennisville village; determine interest/need for other infrastructure improvements ?? Develop gateway/visitors center in Maurice River Township ?? Encourage appropriate small-scale businesses (B&Bs, outfitters) 	<ul style="list-style-type: none"> ?? Pursue scenic byway designation in conjunction with NJ Coastal Heritage Trail ?? Construct interpretive infrastructure for "BayLands" Region (signs, exhibits) ?? Renovate Dennisville train station ?? Construct visitor information kiosk in Maurice River Township ?? Implement BayLands marketing strategy (shore and Coastal Heritage Trail visitors, outdoor enthusiasts) ?? Develop small-scale lodging alternatives ?? Increase schedule of

Community	Focus Areas	Key Components of Economic Development Strategy	Key Components of Implementation Strategy
Mullica River Corridor	<ul style="list-style-type: none"> ?? Ecotourism ?? Village Development 	<ul style="list-style-type: none"> ?? Develop and promote regional ecotourism theme based on less touristy/more rustic image ?? Pursue joint educational and marketing efforts with state/regional entities ?? Improve New Gretna infrastructure ?? Determine wastewater treatment needs of other villages along the River ?? Work with local sites/businesses to provide visitor services (e.g., Lower Bank Boatyard) 	<p style="text-align: center;">festivals and events</p> <ul style="list-style-type: none"> ?? Pursue scenic byway designation in conjunction with NJ Coastal Heritage Trail ?? Design and install Corridor-wide signage in conjunction with Pinelands Commission ?? Construct interpretive infrastructure (wayside exhibits, kiosks) ?? Implement Corridor marketing strategy (boaters, families, Coastal Heritage Trail visitors) ?? Form task force on State recreational facilities ?? Improve New Gretna streetscape (facades, landscaping, lighting) and construct small-scale wastewater treatment facility
Mullica Township, Route 30	<ul style="list-style-type: none"> ?? Western Border ?? Eastern Border ?? Elwood Village 	<ul style="list-style-type: none"> ?? Provide wastewater treatment to western end of Route 30 ?? Improve streetscape in Elwood Village ?? Examine rezoning at eastern end of Route 30 ?? Resolve differences between opposing interests 	<ul style="list-style-type: none"> ?? Guide development of western end of Route 30 through provision of wastewater treatment and design guidelines ?? Establish Elwood village as a gateway; install limited lighting, sidewalks, and landscaping ?? Construct visitor information kiosk in Elwood; consider other low intensity uses (farmers market, crafts cooperative) ?? Consider extension of wastewater treatment to eastern end of Route 30 from Egg Harbor City ?? Increase interaction between economic and environmental committees; appoint economic development ombudsman

The Whiteman & Taintor *Background Report, Economic Development Strategies, and Implementation Strategies*, as well as the final summary report, are available from the Commission. Now that needs and strategies for economic revitalization have been identified, a goal of the Commission and the participating municipalities should be to seek funding to

complete the analysis, implement the recommendations, and monitor long-term progress. An initial request was made to the State legislature for several hundred thousand dollars to implement the recommendations, but this effort was unsuccessful. Only with such a continued commitment to attracting new business and new markets can the economic vitality of the region and its competitiveness be maintained.

Scenic Byway Initiative

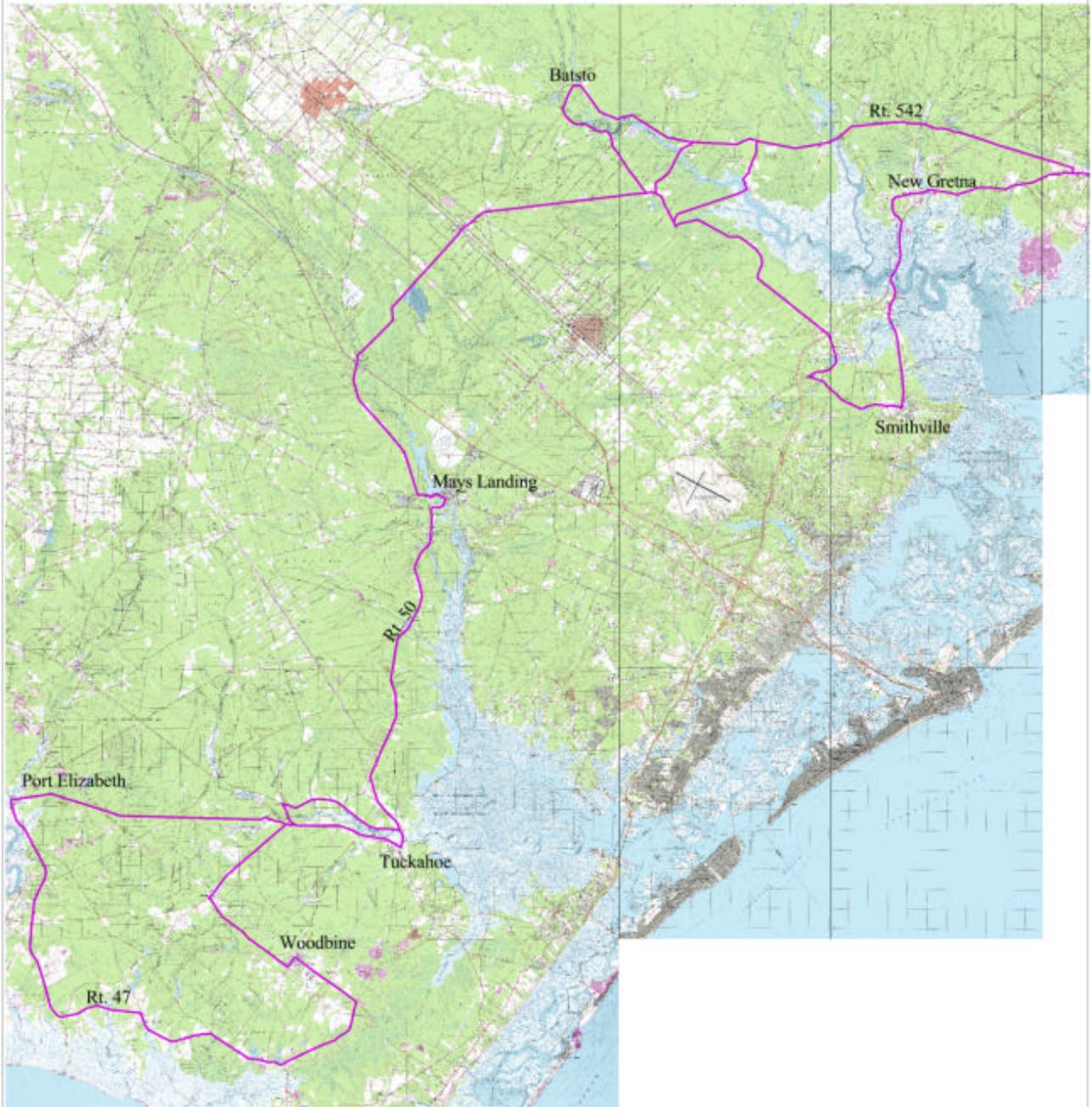
As a further means of providing opportunities for rural Pinelands communities, the Commission began planning in late 1999 for the formal designation by the state and federal governments of a Scenic Byway through the southern portion of the Pinelands. Designation of a byway had been one of the suggestions made by Whiteman & Taintor to prompt tourism and economic revitalization of the Pinelands interior.

Parallel and coordinated Scenic Byways programs are administered by the NJDOT (in cooperation with the Department of Community Affairs) and the US Department of Transportation, and offer incentives for designation in the form of seed money for signage, promotional materials, marketing, national exposure, and capital improvements. The process for designation of a route of historic, archaeological, or otherwise scenic value is fairly involved and requires establishment of a corridor committee and some kind of joint entity among the municipalities which the proposed route crosses. The Commission staff has actively supported the early organizational effort by helping to delineate a tentative alignment for the byway; participating in several meetings with the 16 municipalities that, at this point, are along the selected route; organizing a bus tour of the route for local officials; and coordinating with the state officials and agencies that run the New Jersey program. In addition, the Commission worked closely with the NJDOT to revise their requirements for designation in order to ease the up-front burden on small communities and facilitate access to federal funds.

During 2001, the staff identified a possible route that reaches from Washington Township in the north to Dennis Township in the south and from Tuckerton Borough and Smithville on the east to Port Elizabeth on the west (see Figure 7.1). In the near future, spur routes and loops can be added which will link all of the destination points along the way with other natural and cultural highlights. The “South Jersey Pineway” (one of several working titles for the byway suggested by the participating municipalities) meanders through natural and historic areas of rural and coastal New Jersey, stretching from the Mullica River to the Delaware Bay. It encompasses mostly undeveloped areas of striking natural beauty and rich historic heritage. In addition to absorbing panoramas of the unspoiled Mullica River and the broad salt marshes of the Bay, travelers along this proposed byway will enjoy birding and the tranquil beauty of three Wildlife Management Areas, as well as camping and hiking in Belleplain State Forest and several county parks. Visitors interested in the region’s fascinating and significant history will tour Revolutionary War sites at Batsto and Chestnut Neck, numerous well preserved villages with charming examples of 18th and 19th century architecture, and the ruins of the glasshouses, iron furnaces, and paper mills that reflect the Pinelands’ long-forgotten, rural industrial past.

Another working session will be held with the municipalities that are involved. The goal of the meeting will be to settle upon a final route for the byway, appoint a management committee from

Figure 7.1
Scenic Byway Route



 Scenic Byway Route
Topo Map



4 0 4 Miles



September 2001

among the municipalities represented, and form a sponsoring organization so that a nomination package can be prepared for submission to the State. Once the nomination has been accepted, a grant application can be submitted to the Federal Highway Administration. The grant funds will be used to begin work on development of a byway management plan, which is a prerequisite for designation as a National Scenic Byway.

MULLICA WATERSHED PLANNING PROJECT

Background

Since passage of the federal Clean Water Act in the 1970s, New Jersey has made great progress in addressing water pollution from point sources (e.g., industrial and municipal dischargers). Within the last decade, the NJDEP put a new emphasis on the reduction of non-point source pollution through a watershed management approach, dividing the state into 20 Watershed Management Areas (WMAs) and organizing the Division of Watershed Management. In each WMA, a lead agency has been contracted by the NJDEP to coordinate the development of a management plan to protect water quality, water supply and natural resources.

In September 2000, the Pinelands Commission entered into a contract with the NJDEP to work with other organizations and individuals to develop a management plan for the Mullica River Watershed (WMA #14), most of which lies within the state-designated Pinelands Area and is protected by the CMP. The primary purpose of this effort is to assess existing water and water-related issues in the watershed and develop strategies to maintain, restore or enhance water quality, water quantity and ecosystem health. A variety of tools are being used in this process, including input from the public and from technical and scientific experts, the CMP, the Coastal Zone Management rules, and extensive land use and scientific data. The lattermost addressed the vulnerability of Pinelands acid-water plant and animal communities to changes associated with water quality degradation from developed and agricultural landscapes. The Pinelands Commission recently completed a five-year ecological monitoring study in which data was compiled on land use, water quality, and fish, frog and plant communities in the Mullica Watershed (see Chapter 9). This study will be critical to assessing watershed issues and developing the management plan.

The Mullica Watershed encompasses part or all of 24 municipalities in four counties (Atlantic, Burlington, Camden, and Ocean), stretching from the headwaters of the Mullica and Wading Rivers in the northernmost part of the watershed southeast to the Great Bay where the Mullica River meets the Atlantic Ocean. Approximately 87,000 people make their home in the watershed, as well as a variety of plants, animals and other organisms, including many threatened and endangered species. Land uses include a mix of residential and commercial development, agriculture, forestry, recreational activities and a substantial portion of protected parks and forests (See Figure 7.2 Sub Basins of the Mullica River Watershed).

Project Activities

The public “kickoff” meeting for the project was held in April 2001, at which participants offered their ideas about priority issues and goals in the watershed. Their input laid the foundation for the first Steering Committee meeting in August 2001. The committee’s role is to provide input and guidance from key stakeholder groups in the watershed. The group has already addressed several issues, including the establishment of ground rules to guide the operation and administration of the committee; development of a statement describing the group’s collective future vision for the watershed; formation of several Technical Focus Groups to examine specific issues in detail; evaluation of Action Now project ideas; and the addition of new interest groups to the committee. Action Now projects are short-term projects aimed at improving water quality and advancing overall watershed goals. Examples include educational programs, stream cleanups, storm water management, land acquisition, development/implementation of best management practices, and technical studies concerning water quality, quantity and/or ecosystem health.

Other major project activities to date include the creation of a brochure, website (www.nj.gov/pinelands/mullica) and other materials describing the project and facilitating additional public input and communication. A second general public meeting was held in October 2001 to discuss project progress and solicit Action Now project ideas. Commission staff also participate regularly in activities with other WMAs and organizations in the region, and have received funding for an Action Now project to develop an on-site wastewater management program.

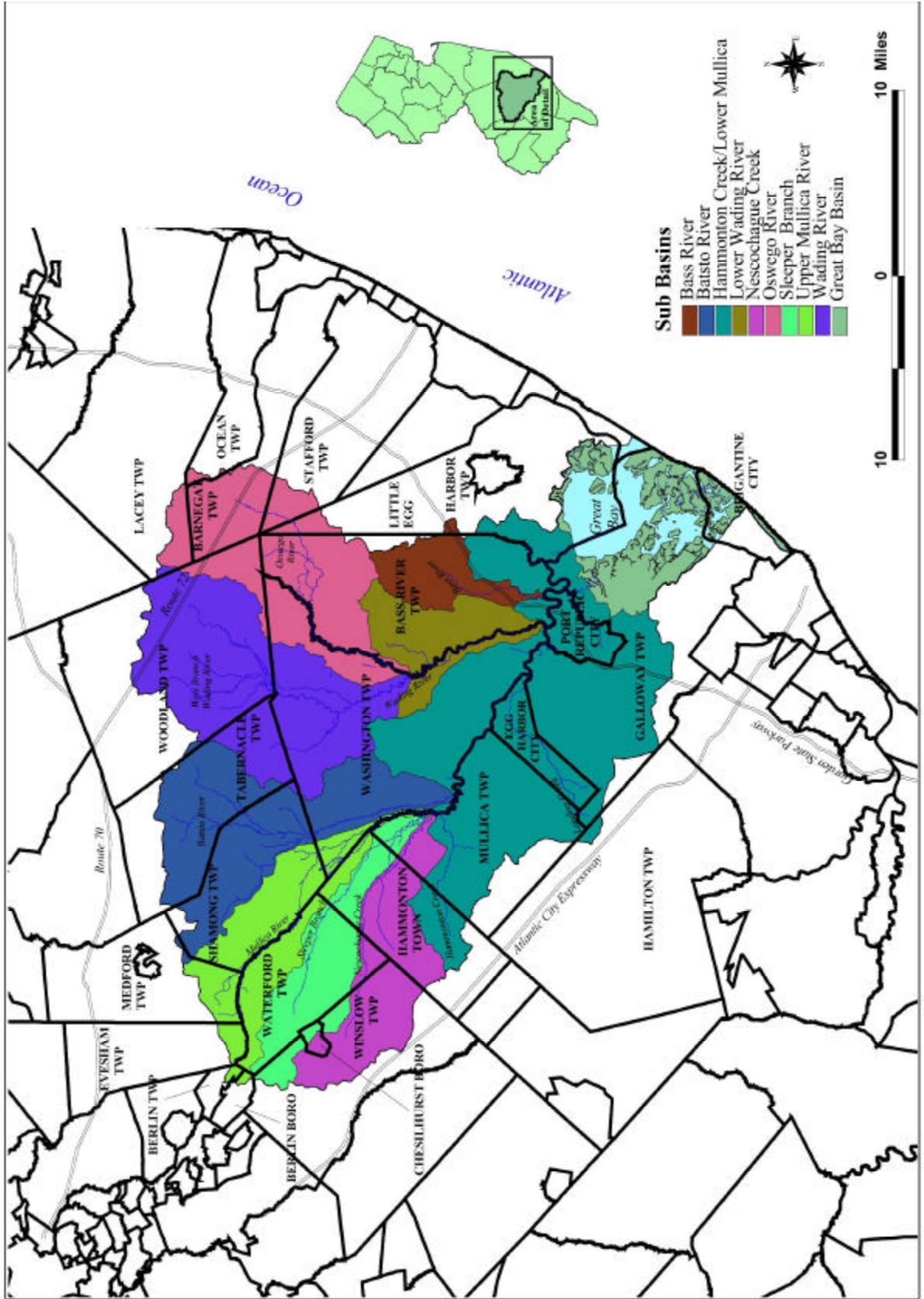
Future Plans

Stakeholders will continue to work with the NJDEP to develop Action Now project proposals to address immediate needs in the watershed. Steering Committee and general public meetings will be held on a quarterly basis, with the intention of exchanging information and ideas freely between the two groups. The first Technical Focus Groups will commence early in 2002 and work closely with the Steering Committee to provide technical expertise on a variety of issues.

Other activities outlined in the contract between the NJDEP and the Commission include the development of a water budget by February 2003, the establishment of target water quality by April 2004 and completion of the Watershed Management Plan by April 2005. For those stream segments in the Mullica that do not meet water quality targets, Total Maximum Daily Loads will also be developed at a future date. (A Total Maximum Daily Load is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to all contributing point and non-point sources.)

Public participation and education is critical to the success of the management plan, and opportunities for public involvement are incorporated throughout the process. These include educational workshops, public meetings, website updates and a newsletter that will help to disseminate information about the Mullica Watershed and the planning project. Commission staff will continue to work closely with all stakeholders to promote a clean and plentiful water supply in the Mullica Watershed.

Figure 7.2
Sub Basins of The Mullica River Watershed



PINELANDS INFRASTRUCTURE TRUST FUND

In November 1985, the citizens of New Jersey passed the Pinelands Infrastructure Bond Act. The Act authorized issuance of \$30,000,000 in bonds for the purpose of providing grants and loans to Pinelands municipalities. The monies were to be used to build the infrastructure necessary to accommodate development in Regional Growth Areas. 40% of the eligible costs of a project were to be funded by grants from the Infrastructure Trust Fund and 20% by loans. The Commission was charged in the Act with adopting an infrastructure master plan for use in evaluating proposed projects, a task which was accomplished in 1987. The Commission was also responsible for overall administration of the grant and loan program, determining eligible recipients, and directing the NJDEP to disburse the funds from what became the Pinelands Infrastructure Trust Fund (PITF). Sewage collection systems were given the highest priority in the plan, with public water and transportation projects also eligible for any remaining funds (though, in fact, all the funds were eventually expended on sewer projects). The Act was subsequently amended in 1987 to appropriate specific amounts for specific construction projects, although the Commission retained some latitude in transferring funds among the designated projects. In 1990, the Commission revised the master plan and began to reallocate some money according to the needs identified to that point. The master plan was amended again several times in the ensuing years as project plans evolved (legislative action was required after each amendment); some projects were abandoned entirely while others were reduced in scope or expanded. The final amendment to the plan was adopted by the Commission in June 1996, when \$75,875 were conditionally allocated for a Great Egg Harbor River basin water supply and wastewater study. By that time, all of the rest of the \$30 million had already been awarded to various projects throughout the Pinelands.

The PITF Program has resulted in the sewerage of many thousands of residences in the Pinelands and the consequent protection of water quality throughout the region. Since the inception of the PITF, almost 70% of the residential units approved in the Pinelands Regional Growth Area have sewerage available to them because of the program. Over 40,000 new units and 3,600 existing ones are, or will be, served by regional interceptors financed through the PITF. Moreover, over 23,000 new and 3,100 existing homes are now, or will be, served by local interceptors, and over 5,500 new and 1,100 existing units connected to PITF-funded collection systems.

Table 7.2 shows the total amount of monies allocated through October 1993 to the various projects initially selected for the Infrastructure Trust funding. Two of the projects, the Chesilhurst Interceptor and one portion of the Ridgeway Cabin Branch Interceptor, were removed from funding for reasons explained in the Table, while others were reduced because actual costs were lower than estimated. As a result, four other projects were added to the list.

While the entire PITF allocation was awarded for the projects described in the summary following Table 7.2, approximately \$5.8 million has become available due to loan paybacks and monies returned to the Fund for unrealized contingencies and bids that were lower than expected. This money has been held in reserve in anticipation of significant additional funding from the State legislature. An additional \$70 million bond proposal (the Pinelands Water Resources Trust Bond Act) has not yet been enacted into law.

Summary of PITF Projects and Status

The following is a brief description of the status of projects which were funded and/or under construction since December 1991.

Monroe Interceptor and Collection System

This project, sponsored by the Monroe Township Municipal Utilities Authority, involved the extension of the township interceptor system to serve its entire Regional Growth Area and a collection system for the Victory Lakes/Friendly Village area. Because of concern over the long-term effects of water withdrawals and interbasin transfers, the Commission made approval of the funding contingent upon development of a monitoring program for a portion of the Great Egg Harbor River watershed. To date, the program has detected no significant environmental impacts as a result of the withdrawals. The Commission also required that the system direct its effluent to the Gloucester County Utilities Authority sewage treatment plant.

Table 7.2
Pinelands Infrastructure Master Plan Recommendations
February 25, 1990, February 21, 1991, May 7, 1993 and October 1, 1993

Item	P.L. 1968 Chapter 306 Appropriation	Feb. 25, 1990 Recommendation	Feb. 21, 1991 Recommendation	May 7, 1993 Recommendation	Oct . 1, 1993 Recommendation	
State Administration	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	
Local Planning & Design Grant	100,000	100,000	100,000	100,000	100,000	
Monroe Interceptor	3,124,500	3,124,500	3,124,500	3,124,500	3,124,500	1
ACUA Coastal Interceptor	13,800,000	13,800,000	13,800,000	10,407,153	10,407,153	2
Waterford Sewage Treatment Plant	2,520,000	-0-	-0-	-0-	-0-	3
Ridgeway Cabin Branch Interceptor OCUA ⁴	3,648,000	-0-	-0-	-0-	-0-	3
OCUA/Manchester ⁵	N/A	N/A	4,337,848	4,337,848	-0-	3
Chesilhurst Interceptor	307,906	-0-	-0-	-0-	-0-	6
Chesilhurst Collection	317,894	2,897,122	2,897,122	1,761,008	1,761,008	7

Item	P.L. 1968 Chapter 306 Appropriation	Feb. 25, 1990 Recommendation	Feb. 21, 1991 Recommendation	May 7, 1993 Recommendation	Oct . 1, 1993 Recommendation	
Hamilton-Harding Highway Interceptor	855,000	855,000	855,000	855,000	855,000	⁸
Galloway-Pinehurst Interceptor	395,736	395,736	395,736	395,736	395,736	⁹
Stafford-Ocean Acres Skeleton System	2,880,003	2,438,833	2,438,833	2,438,833	2,438,833	²
Winslow Route 73 Interceptor & Collection	N/A	N/A	N/A	4,687,754	5,985,273	
Barnegat Phase 1 Interceptor	N/A	N/A	N/A	N/A	1,737,600	
Hamilton ACUA Collection	N/A	N/A	N/A	N/A	744,467	
Egg Harbor Collection	N/A	N/A	N/A	N/A	605,612	
Contingency Grants & Loans	1,550,961	1,550,961	1,550,961	1,392,168	1,344,818	¹⁰
Reserve for Future Use	-0-	4,337,848	-0-	-0-	-0-	
TOTAL	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	

¹Project qualifies for an additional \$312,450 from the Contingency.

²Actual costs were less than estimated.

³Project has been abandoned.

⁴Manchester and Jackson Townships service area (Interceptor only).

⁵Manchester Township service area, only (Interceptor & collection).

⁶Project to be constructed without Pinelands Trust Assistance.

⁷Finances 60% of revised eligible cost; balance to be funded with FmHA grants and loan.

⁸Project also qualifies for an additional \$85,500 from the Contingency.

⁹Project also qualifies for an additional \$39,573 from the Contingency.

¹⁰After allocations of \$437,523 for projects as referenced in 1, 8, and 9 above, effective balance is \$907,295

Atlantic County Utilities Authority Coastal Interceptor

This is a regional interceptor project, which was constructed to serve the Regional Growth Areas of both Hamilton and Egg Harbor Townships and to correct a stream discharge problem from the Hamilton Sewage Treatment Plant. The interceptor has the capacity to serve over 33,000 homes, including some existing homes with septic system problems.

Chesilhurst Collection

This project was sponsored by the Borough of Chesilhurst to alleviate a problem with residential septic systems in areas of unsuitable soils. The collection system connects to the Atlantic Basin Interceptor, which conveys wastewater to the Camden County treatment facility in Camden.

Hamilton-Harding Highway Interceptor

This interceptor was completed by the early 1990s and serves a portion of the Hamilton Township Regional Growth Area. The project eventually qualified for additional PITF funding when the Hamilton Township Sewage Treatment Plant was converted to a pumping station and the wastewater was directed to the Atlantic County Utilities Authority Coastal Interceptor.

Winslow Route 73 Interceptor and Collection

This proposal was added to the Commission's list of projects recommended for PITF funding in May 1993. It comprises all three phases of a regional interceptor network to serve the entirety of Winslow Township's Regional Growth Area. The interceptor system ties into the Camden County Municipal Utilities Authority Cedarbrook pumping station, which conveys the wastewater to the county treatment facility in Camden.

Barnegat Phase I Interceptor

Barnegat Township proposed a two-phase project to serve areas both east and west of the Garden State Parkway. Phase I was intended to serve both existing and new development in a significant portion of the Township's Regional Growth Area, both in the Pinelands Area and the PNR. Phase II is intended to provide sewer service in the remainder of the Pinelands Area and the PNR Regional Growth Area.

Hamilton ACUA Collection

The Hamilton Township Municipal Utilities Authority proposed construction of this collection system, which serves the eastern portion of Hamilton's Regional Growth Area. The system is in close proximity to the Coastal Interceptor, a previously approved PITF project. It will serve an area of 1431 acres in the vicinity of the Hamilton Mall and the Atlantic City Expressway.

Egg Harbor Collection

This proposal was submitted by the Egg Harbor Township Municipal Utilities Authority and was designed to extend sewer service to the western portion of the Township's Regional Growth Area. The collection area serves 405 acres and ties into the existing Atlantic County Utilities Authority pumping station at English Creek Avenue.

While a number of very worthwhile infrastructure projects have been undertaken with the \$30 million made available through PITF, these funds are largely depleted and much more remains to be done. The Regional Growth Areas of the Pinelands are intended to accommodate

development pressures and provide for the economic well-being of the region. Without the foundation for growth afforded by sewerage, public water, and other necessary public improvements, Pinelands communities cannot adequately plan for orderly development and foster more viable community designs. Moreover, there is a need for assistance to isolated communities (e.g., Pinelands Villages) and schools that are remote from centralized sewer services.

Lower Camden County Sewer and Water Planning

In the late 1980's, interest in wastewater facility development in lower Camden County (Winslow, Waterford, and Chesilhurst) prompted an in-depth Commission review of the impacts of transferring wastewater from the Atlantic Basin to the Delaware Basin for treatment and disposal. Given the fact that these three communities are home to the headwaters of the Mullica River and overlay the Kirkwood-Cohansey aquifer, the analysis attempted to balance levels of development, water supply demand, interbasin transfers of wastewater, and wastewater recharge. The solution was threefold: reduce permissible development levels by 25% so that overall water demand and wastewater generation are limited; integrate the water supply system of the three communities and target well locations to environmentally appropriate areas; and limit wastewater recharge to the Mullica Basin (1.4 mgd) and allow wastewater transfer of 1.2 mgd to the Delaware Basin to maintain appropriate hydrological regimes. The wastewater planning agency and treatment provider, the Camden County Municipal Utilities Authority (CCMUA), agreed to prepare the relevant plans and funded a stream flow monitoring program to evaluate the actual effects of the interbasin transfer. Although wastewater flows being transferred out of the Mullica River Basin are still well below the 1.2 mgd exportation cap, the three municipalities are working with the CCMUA and the Commission to develop a protocol for pursuing the development of an in-basin treatment facility, should it be needed. This is a complicated issue because hydrologic impacts may not become apparent until the 1.2 mgd exportation cap is reached, possibly resulting in a several year development moratorium while an in-basin treatment facility is constructed. In addition, there is a question as to whether the CCMUA will support an in-basin treatment facility.

OTHER COMMISSION INITIATIVES

Following is a brief description of several other initiatives that the Commission has begun to pursue in the past ten years. For the most part, these matters, while important to the Commission and many Pinelands municipalities, have not been examined to the point where a reliable, comprehensive solution acceptable to all parties can be proposed. Implementation of suggested solutions for some of the issues has been delayed because their long-term consequences are difficult to foresee and require a more formal and intensive review. Others are either of less immediate concern than when they were first posed or perhaps are more appropriately resolved as part of a larger initiative that addresses a range of interrelated issues.

Pinelands Development Credit Program Enhancements

In addition to the Commission's work on the Special PDC Purchase Program described in Chapter 3, the staff prepared a series of measures in 1998 which perhaps could be employed to enhance the market for PDCs. These include numerous techniques for each of the six basic approaches identified in Table 7.3. At this point, the Commission felt their introduction would be premature since it is not clear what enhancements, if any, will be necessary given the increased attractiveness and use of PDCs in the private market, the occasional shortages of PDCs available for purchase, attempts by the state to retire PDCs through direct purchase, and efforts by the SADC and the Commission to protect agricultural lands. Furthermore, the Commission has already implemented one of the measures under consideration by adopting amendments which provide those municipalities with the highest assigned Regional Growth Area densities an opportunity to reduce their densities to 2.5 units per developable acre. Although this density reduction was undertaken for other reasons, it is expected to have the effect of increasing the market for PDCs.

Pinelands Development Credit Allocations

In the Spring of 1997, the Commission's Policy and Implementation Committee examined the possibility of changing the criteria by which PDC allocations are calculated, primarily to increase allocations to agricultural lands. However, concerns about private market demand argued against any proposal which could conceivably increase the supply. Furthermore, the overall impacts of such a significant change in the PDC allocation formula were not at all clear. The proposal was held in abeyance. Since then, the SADC has established a formula for valuing farmland easements in the Pinelands.

Septic System/Water Table Separation Issue

The Commission undertook a review of the regulatory requirement to maintain a vertical separation of five feet between individual on-site septic systems and the seasonal high water table. The results of the review, conducted in 1995, were not conclusive. There was also a concern over the cumulative effects of septic systems, when coupled with other non-point source pollutants, upon water quality in high water table areas. No action was taken on this proposal, but the effect of non-point source discharges will be folded into the Mullica watershed project discussed earlier in this chapter.

Expansion of Non-Residential Uses

The situation has arisen in the past where commercial establishments which otherwise would be permitted to expand under the CMP cannot do so because the resulting increase in septic effluent will result in nitrogen levels exceeding a 2 ppm average at the property line. One possible solution, analyzed in 1997-98, would be to allow the use of non-contiguous, undeveloped parcels in calculating the acreage necessary to meet the 2 ppm standard. In other words, an applicant for a commercial expansion would be able to deed restrict other parcels, presumably within the same watershed, and use those retired parcels in the dilution equation. However, in order to ensure that the localized impact upon water quality would not be too great, a standard of 5 ppm might

still have to be maintained on the developed parcel. This poses a problem in that a 5 ppm standard could compromise local water quality, at least to some degree, and yet would not offer relief in that many instances.

Table 7.3
Possible Ways To Increase Demand For The Use Of PDC Rights

CONCEPT	Lower Impact Techniques (# of new rights possible)	Higher Impact Techniques (# of new rights possible)
1. Lower residential densities in Regional Growth Areas	3,100	30,000
2. Reduce the densities at which PDCs are used in residential projects	1,200	25,000
3. Use PDCs for business development	300	14,400
4. Use PDCs for residential development in "Town" management areas	700	3,200
5. Assign PDC use when management area changes are approved	800	2,500
6. Use PDCs in association with the expansion of non-conforming uses	200	600

Because "off-site dilution" would only be applicable in a limited number of cases, it does not appear to be a long-term solution to this recurring problem. Perhaps a better answer lies in the more effective water treatment technology that has been and is being introduced.

CAFRA/State Plan/CMP Consistency

For 20 years, the distinction between the state-designated Pinelands "Area" and the federal Pinelands "National Reserve" (PNR) has raised confusion. When the boundaries of the Pinelands Area were established in the Pinelands Protection Act (the Act), coastal Pinelands areas within the federal area were excluded as these areas were regulated by the state's coastal zone program known as CAFRA (NJDEP Coastal Area Facilities Review Act). However, it was stated in the Act that the Commission is the "planning entity" for that coastal area, and coastal policies should be consistent with Pinelands policies. To accomplish this, a memorandum of agreement was executed between the NJDEP and the Pinelands Commission whereby the Commission submits comments on CAFRA applications in terms of their consistency with the CMP (see Chapter 4).

When the State Plan was originally adopted, the coastal area was not specifically addressed. However, the State Planning Commission completed an analysis of the CAFRA area based upon the State Plan's land use scheme. Commission staff participated in this process and attempted to make the CMP and the state planning analysis of the CAFRA area as mutually consistent as possible. The NJDEP implemented the State Plan's planning area designations through new rules

in the late 1990s. However, full consistency between the State Plan and the Pinelands land use designations has yet to be achieved. Two types of issues remain:

Inconsistencies in the *current* State Planning Area designations with the CMP: While most were eliminated in the consultative process, there are several remaining map inconsistencies between the State Plan and the CMP. One example involves a substantial area of forested land in the PNR. To adjust the designation of such areas, municipalities with lands in the federally designated Pinelands (i.e., the PNR) which lie outside the state-designated area may request that the Commission approve their master plans and land use ordinances for these lands (three municipalities have done so to date). Manchester Township contains a large undeveloped area within the PNR which has some potential for commercial and residential use. The Township developed a zoning plan for the area that allows slightly more development than a strict application of Pinelands policies would normally permit. The Commission's Policy and Implementation Committee generally endorsed the plan, but the Township has elected not to seek formal Commission approval. The coastal area designations are generally consistent with the Township's zoning, which, until it can be considered for certification by the Commission, is inconsistent with the CMP. In the meantime, the owner of the largest portion of the area is litigating a number of issues with the NJDEP, the Pinelands Commission, the federal government, and the municipality.

Inconsistencies with *new* "Centers" as permitted by the State Plan: As the NJDEP moves further to implement the State Plan, municipalities are beginning to petition to have "centers" designated (centers are areas where more intensive development is to be focused; being designated as a center confers benefits in obtaining certain types of state funds). Examples include Middle, Ocean, and Little Egg Harbor Townships. While centers make excellent planning sense in certain cases, there is no current provision in the CMP that would permit the staff to find them consistent, except through a certification of the entire PNR portion of the township. This is not being done and therefore, involvement by planning staff on this issue has increased and will continue to do so, unless a CMP solution can be crafted that addresses both the boundary consistency issue and the creation of new centers that permit more intensive development than the surrounding areas.

Mid-Term Review of CMP Regulations

At the direction of the Commission in 1996, the staff began conducting a review of the standards and procedures of the CMP in order to suggest ways to clarify, simplify, and streamline the regulatory regime. It was soon realized that the review would benefit from consideration of better ways to accomplish CMP goals, even if this were not simple. The planning staff was assigned responsibility for assembling recommendations and responded by examining the provisions of each Subchapter and Part of the CMP, soliciting the views of management and other staff members with expertise on particular subjects, and reviewing various comments voiced by municipal, county, and state agencies, and by the general public. During this phase of the review, staff was quite consciously casting a very wide net in order to capture any potentially valid concerns. The process resulted in an initial list of 135 issues regarding CMP wording or procedures.

After much discussion and some culling, the staff presented its results, comprising two lists of issues, to the Commission's Policy and Implementation Committee early in 1998. One list included a total of 46 issues, considered to be of higher priority, with 13 of them identified as good candidates for immediate clarification and action. Each issue was categorized according to the level of effort that would be required for its resolution and according to the nature of the problem; i.e., whether it related more to a problem with the phrasing, wording, or language in the CMP, or with the process or substance of a CMP provision. The second list included an additional 65 issues which, while worthy of attention, were not, in the staff's estimation, as urgently in need of a solution.

Some of the topics have been addressed individually. For instance, the need to address septic regulations noted in the overall review was addressed by the in-depth work of the Ad Hoc Septic Committee noted above. Other topics will undoubtedly be considered during the upcoming review of the CMP.

Local Communications Facilities Regulations

The ever-increasing popularity of wireless mobile telephones has resulted in the need for multiple facilities to receive and transmit signals among them. These facilities can often be installed on existing structures, causing very little visual intrusion. Yet, very often there are no suitable structures to which the facilities can be attached, particularly in relatively undeveloped areas like the Pinelands. In these instances a tall, highly visible lattice tower or monopole must be constructed if phone users are not to experience interruptions in service. With the passage of the Telecommunications Act of 1996 (TCA), Congress mandated that all municipalities and local governmental authorities must allow wireless communications providers reasonable siting opportunities within their jurisdictions so that this service would eventually be available nationwide. However, the TCA did not grant carte blanche to the providers to construct towers anywhere, but instead gave local permitting agencies some discretion in siting, so long as the goal of seamless service could eventually be met.

Realizing that the public wanted wireless phones and that access to them could enhance public safety, the Commission responded, even before enactment of the federal legislation, by adopting an amendment to the CMP in 1995 (see Chapter 1). The new regulations established a framework that allowed provision of the service regionally, but in a way that kept the visual impact of communications towers to a minimum. Not surprisingly, this was accomplished by requiring that the number of new towers constructed in all areas of the Pinelands (except Regional Growth Areas and Pinelands Towns) be kept to the fewest possible that will still provide adequate service. The fewest number of towers was in turn determined by obliging the wireless providers to use existing structures and to co-locate at the same facility whenever technically feasible. The providers also had to submit "signal propagation" maps which demonstrated the broadcast/reception range of each existing and proposed facility and identified areas where gaps in service were anticipated. To minimize the physical impact of new towers on the landscape, the Commission further required that facilities be no taller than 200 feet and designed to accommodate multiple providers, and that those to be built in certain Management Areas be located at already disturbed or otherwise appropriate sites (e.g., firehouses, approved landfills). Finally, in order to ensure that all these criteria were met, the amended regulations

provided for submission of a comprehensive siting plan, agreed upon by all the providers of a like service, which identified and justified all new towers and addressed each aspect of compliance for each proposed tower.

To date, two such comprehensive siting plans have been approved by the Commission, one for cellular facilities (to which there are three signatories) and one for personal communications systems (PCS - two providers are participating). The cellular plan was approved in 1998 and the later PCS plan, approved in 2000, was required to incorporate and build upon the cellular, essentially acting as an amendment to it. The Commission has recently received a proposed amendment to the PCS plan, which if approved, will allow a third provider access to the Pinelands market

The approach developed by the Commission is not perfect, especially given the controversy that these towers engender. The rules tend to favor siting in currently developed areas, so as to protect more pristine Pinelands environments from encroachment, but this often provokes local opposition from residents who, quite naturally, do not want an imposing tower as a neighbor. Also, siting opportunities in some parts of the Pinelands are very limited because of the requirement to find existing disturbed or developed areas. In at least one instance, the need for a tower has been justified by a demonstrated service gap, but there is no authorized site within the search area. Other problems also exist, such as the difficulty in finding sites mutually agreeable to all providers; the technical requirements of cellular and PCS phones are not the same, which can lead to disagreements over a location satisfactory to all. Moreover, the advent of new wireless technologies (e.g., wireless internet access, satellite radio systems, etc.) has the potential to lead to a proliferation of towers to accommodate them, despite the best efforts of the Commission and municipalities to control their spread. A further predicament involves the analysis of visual impacts, which can be difficult to assess from various vantage points.

In 1999, possible amendments to the CMP that were intended to improve the review process for siting communications facilities were discussed with the Policy and Implementation Committee. The proposed revisions related to the following:

- ?? municipal consistency: a requirement that municipalities in which a cellular facility has been designated under an approved Plan adopt implementing ordinances within one year of the effective date of these amendments;
- ?? siting opportunities and flexibility: municipalities would be required to provide siting opportunities in more geographically confined “search areas” and within a 1½ mile radius of the approximate locations identified in the approved Plan; coupled with the elimination of certain siting restrictions (currently only at landfills, first aid stations, fire stations, etc.) in the most restrictive management areas to give municipalities more flexibility as to locations they feel are more suitable;
- ?? clarifications concerning the expansion of non-conforming uses, so as to allow for cellular facilities; and
- ?? a clear separation of the process for reviewing comprehensive siting plans versus the process for reviewing applications for individual facilities.

The draft regulations were distributed to industry representatives and to all Pinelands municipalities in September 1999 and discussed. While there was some support for the amendments, the Commission's Policy & Implementation Committee deferred action, believing that the proposals did not go far enough in simplifying and improving procedures, and that the current process seemed to be working adequately for the time being.

CHAPTER 8

ECONOMIC MONITORING

The Pinelands economic monitoring program was established as an outgrowth of the Commission's second review of the CMP. A panel of economic experts was convened in 1992 to review prior economic studies and develop recommendations for future Commission action. The Pinelands Commission endorsed the panel's recommendation to monitor the region's economy on a continuing basis. In 1994, the Commission entered into an agreement with the NPS to fund this and the environmental monitoring program. The NPS has continued to provide funding each year since then to sustain both programs.

Detailed planning for the economic program then began. Scoping meetings were conducted with interested parties, a technical committee of the NPS, Pinelands Commissioners and another panel of independent experts. The detailed design was completed in 1996 and the first economic report was issued in 1997. Subsequent reports have been issued annually; the most recent was issued in late 2001.

The goal of the Long-Term Economic Monitoring Program is **to continually evaluate the health of the economy of the Pinelands region in an objective and reliable way**. The economic monitoring program, in conjunction with the Commission's ongoing environmental monitoring program, will provide essential information to the Pinelands Commission as it seeks to meet the mandates set forth in federal and state legislation. The program is designed to accomplish several principal objectives:

1. Address key segments of the region's economy while being flexible enough to allow for the analysis of special topics that are identified periodically;
2. Establish a means for comparing Pinelands economic segments with similar areas in the state not located within Pinelands designated boundaries;
3. Establish a means for evaluating economic segments over time so that Pinelands-related trends can be distinguished from general trends;
4. Provide for analyses to be conducted in an impartial and objective manner; and
5. Be designed and implemented in a cost-effective manner so that the program's financial requirements can be sustained over time.

ECONOMIC INDICATORS

Monitoring of economic conditions is accomplished by compiling data for key indicators (also referred to as variables) in the areas of property values, economic growth, and municipal finance. To the extent possible, data for the variables are obtained from 1980 (the year the CMP came

into effect) to the present, and updated on an annual basis. Analysis relies on municipal level data for most economic indicators and county or state level data for some others. To understand the larger context of Pinelands economic trends, the program provides comparisons between several different areas, including Pinelands, Non-Pinelands areas in Southern New Jersey, Southern New Jersey, and New Jersey.

A total of 21 indicators are tracked and analyzed. Table 8.1 shows the indicators tracked, the years of data compiled and the method of analysis.

**Table 8.1
Core Indicators Being Monitored**

Indicator	Years Collected¹	Frequency Collected	Method of Analysis
Building Permits	'80-'00	Annual	Inside/Outside Pinelands I/OP) & Municipal Comparables (MC)
Mean Selling Prices of Homes	'88-'00	Annual	I/OP
Volume of Real Estate Transactions	'88-'00	Annual	I/OP
Per Capita Retail Sales	'90-'99	Annual	County
Income	'80, '90	Decennial	I/OP
Unemployment	'80-'00	Annual	I/OP
Employment	'93-'98	Annual	I/OP
Number of Establishments	'93-'98	Annual	I/OP
Payroll by Major Industry Sector	'93-'98	Annual	I/OP
Farmland Assessed Acreage	'86-'98	I/OP	
Net Cash Return Per Farm and Per Acre	'87, '92, & '97	Quintennial	County
Blueberry and Cranberry Production	'72-'99	Annual	State
Tax Collection Rate	'80-'94	Annual	I/OP & MC
Assessment Class Proportions in Municipal Tax Revenues	'80-'94	Annual	I/OP & MC
Municipal Expenditures by Class Per Capita	'80-'94	Annual	I/OP & MC
Municipal Expenditures Per Household and Household Income	'80, '90	Decennial	I/OP & MC
Average Residential Property Tax Bill	'83-'99	Annual	I/OP & MC
Equalized Property Value	'80-'00	Annual	I/OP & MC
Effective Tax Rate	'80-'99	Annual	I/OP & MC
Population	'80, '90 & '00	Decennial	I/OP, Census Block
Demographics	'80, '90 & '00	Decennial	I/OP

¹Data acquisition is based on the availability of data. An effort is made to acquire data for every year available from 1980 to the present. Some data, although typically available annually, were not made available to include in this latest analysis.

In addition to ongoing data compilation, the design of the Long-Term Economic Monitoring Program calls for the in-depth analysis of certain issues based on indications observed in the data. Two projects currently underway are discussed later in this chapter.

SUMMARY OF FINDINGS

A full discussion of the findings is contained in the 2001 report which is available from the Pinelands Commission. The following sections highlight some of the more significant findings.

Property Values and Residential Development

Three variables are tracked annually to monitor residential development activity and the vitality of property values: the average number of dwelling units authorized by building permits, median selling prices of homes, and volume of residential real estate transactions.

The overall trend in **permits for dwelling units** followed the broad cycle of economic activity, from a building boom in the mid-1980s to recession at the turn of the decade and subsequent recovery. The average number of building permits issued by municipalities inside of the Pinelands was consistently higher and experienced somewhat higher volatility than other areas. Over the past five monitoring years (1996-2000), building permit activity has gradually risen in all regions of the state.

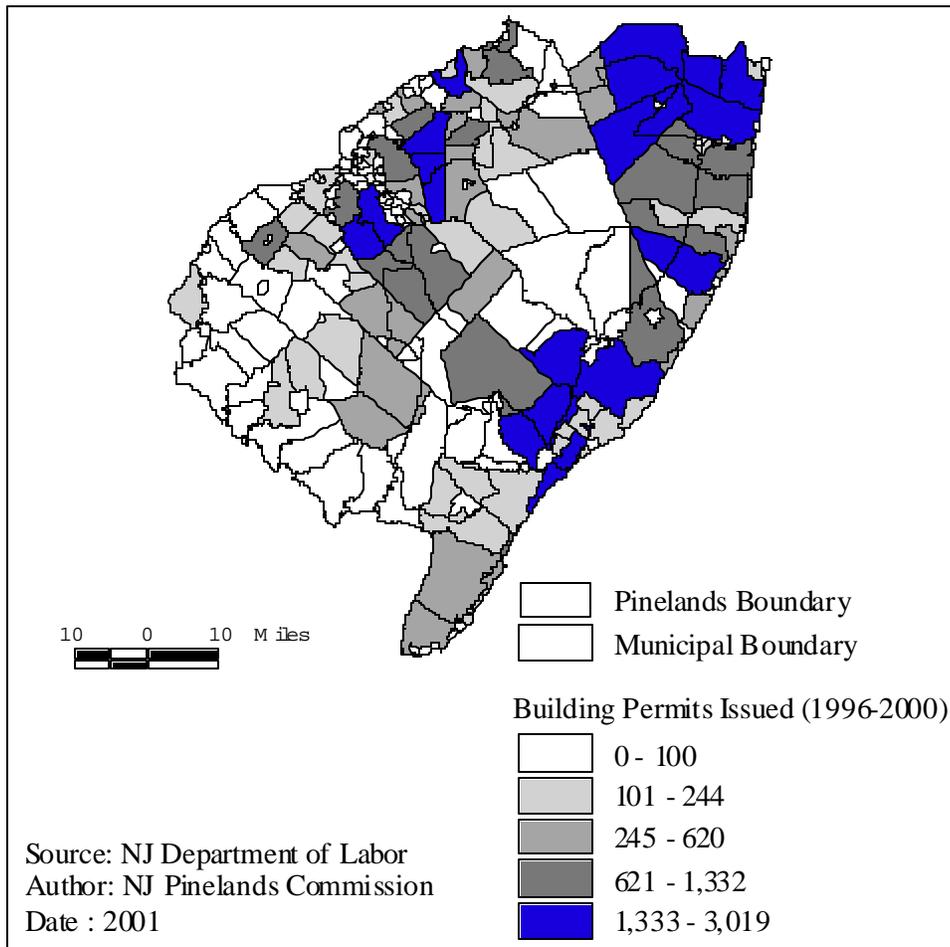
As Figure 8.1 indicates, the bulk of building permits is being issued along the northern, eastern, and western edges of the Pinelands region where development pressures are greatest. However, with the exception of a few regional growth municipalities, most of these permits were actually directed towards development outside of Pinelands boundaries.

Median selling prices of homes inside and outside of the Pinelands declined from the beginning of the monitoring period (1989) throughout the early 1990s, and have slightly increased in subsequent years through 1999. This period encompassed the end of a real estate boom, recession and recovery. From 1989-1996, median selling prices in the Non-Pinelands region declined the least (-12.6%) while prices in the Pinelands dropped by 20.9% and the State declined 23.7%. Overall, median selling prices were slightly higher outside the Pinelands than inside. This is consistent with data from the years prior to the implementation of the Pinelands Comprehensive Management Plan.

The proportion of **residential real estate transactions** remained relatively steady inside the Pinelands and the surrounding region over the initial monitoring period, 1988-1989. Although share was relatively constant, the actual number of transactions in all regions of the State substantially declined from 1988 through 1991. From 1991 to 1996, transactions increased slightly followed by a more dramatic increase after 1996.

As Figure 8.2 shows, home sales increased by approximately 9% in the Pinelands region in 2000 while the increase was more moderate in the Non-Pinelands region (4%) and the State (5%). Many more housing transactions have occurred along the northern, eastern and western edges of the Pinelands where development pressures are greatest.

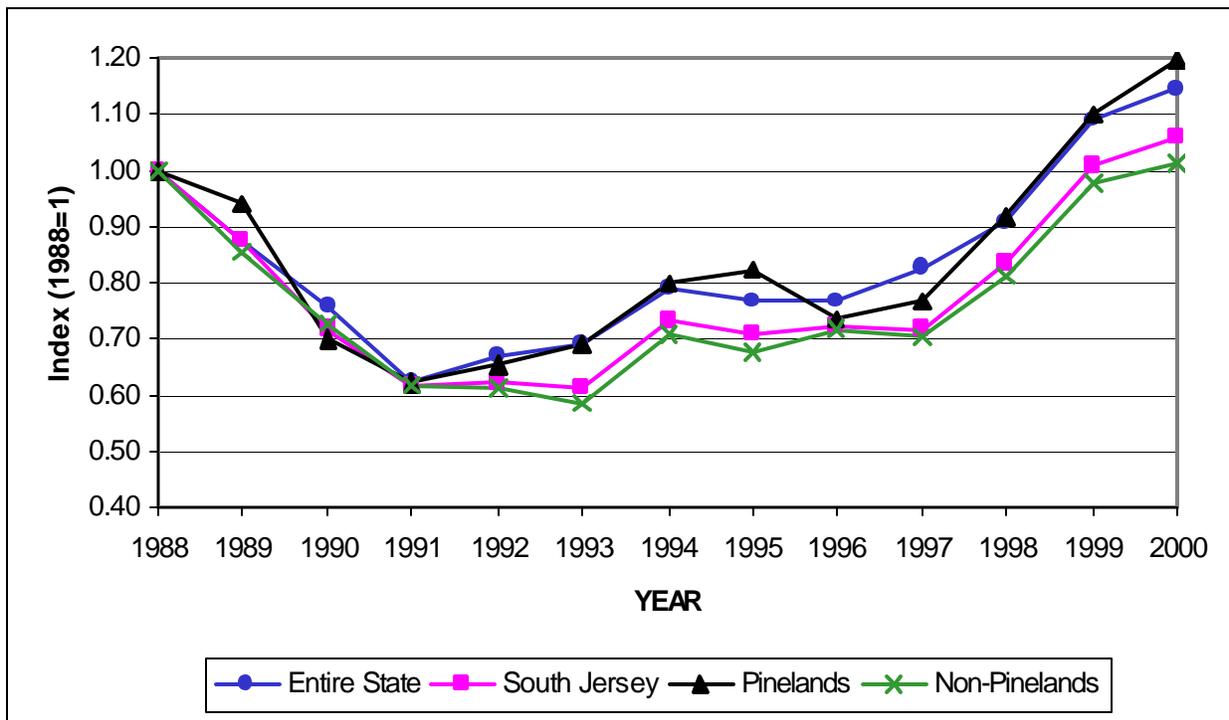
Figure 8.1
Residential Building Permits Issued (1996-2000)



In addition to monitoring the three variables mentioned above, the detailed design calls for more in-depth study of land and housing values. In September 1999, Pinelands Commission staff obtained data from the New Jersey Department of Treasury on all New Jersey land and housing transactions dating back to 1989. The residential housing data is being used to calculate the median selling prices reported above. The vacant land data will be supplemented with additional information to allow for more meaningful analyses.

Commission staff have been gathering supplemental data for each vacant land transaction (i.e., acreage, frontage, zoning, management area, and other attributes). The supplemental data is being gathered from tax maps as well as other available data sources. As of July 2001, supplemental data has been collected for 1990, and 1992-2000 vacant land transactions. The technical advisory committee and staff have begun to analyze the data more extensively using multivariate statistical modeling techniques (e.g., hedonic regression analysis). Results of this analysis are forthcoming.

Figure 8.2
Index of Residential Property Transactions



Economic Growth

Nine variables are monitored annually to provide insight into the regional business climate and key business sectors: retail sales, per capita income, unemployment, employment, establishments, wages, farmland assessed acreage, agricultural sales and net cash return per farm, and blueberry and cranberry production.

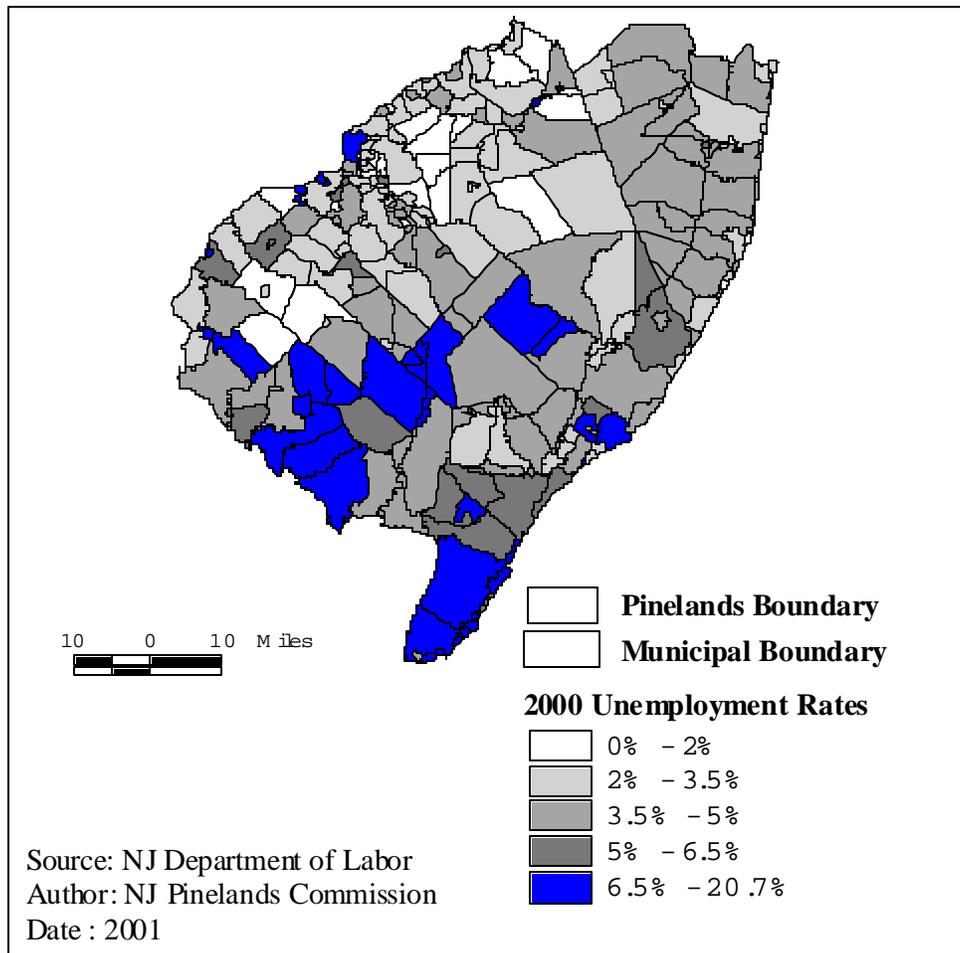
Per capita retail sales remained relatively constant throughout Southern New Jersey, consistent with statewide activity from the beginning of the monitoring period (1990) through 1998. However, per capita sales increased in southern New Jersey in 1999 while decreasing for the entire State. These counterintuitive findings raise questions about the validity of the underlying data, which was acquired from Market Statistics and *The Survey of Buying Power*. Monitoring of this data may be discontinued as another source is investigated.

Per capita income data are reported every decade as part of the census. Although data from 1980 and 1990 have been analyzed, 2000 per capita data are not expected to be released until Spring 2002. From 1980-1990, per capita income growth inside the Pinelands more than kept pace and finished slightly ahead of the surrounding region, although, in absolute terms, incomes have historically been higher outside the Pinelands.

Trends in **unemployment** inside and outside of the Pinelands since 1980 generally tracked closely together, with levels inside the Pinelands consistently lower than levels outside,

beginning in 1990. The 2000 unemployment rate in the Pinelands region was 3.93%, a 0.8% decrease from 1999 and the lowest it has been over the 21-year monitoring period. The Non-Pinelands rate of 4.4% and the statewide rate of 3.76% were also record lows. There are significant variations among municipalities. Figure 8.3 reveals that suburban municipalities close to Philadelphia tended to have lower unemployment levels while higher unemployment levels could be found in more rural municipalities.

Figure 8.3
2000 Unemployment Rates



Employment, business establishments and wage data became available at the municipal level beginning in 1993; however, identification of meaningful trends is limited by the brevity of the monitoring period and the effect of data suppression, especially inside the Pinelands. Data are suppressed when there are relatively few employers in a given sector, a much more likely event in rural municipalities.

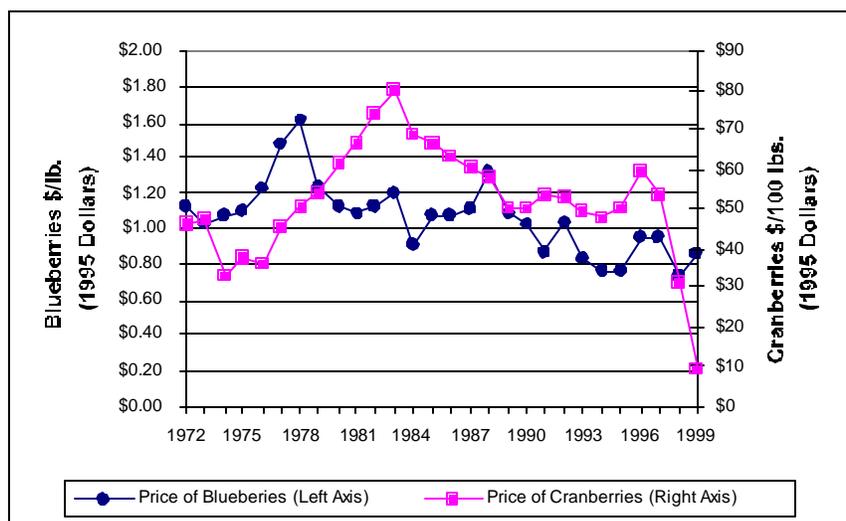
Nonetheless, some observations are possible. The area inside the Pinelands outperformed the area outside the Pinelands relative to gains in employment and establishments during the monitoring period (1993-1998). However, the Non-Pinelands area outperformed the Pinelands

with respect to relative gains in wages over the same period. Workers outside of the Pinelands received higher wages than workers inside the Pinelands, consistent with historical patterns and the types of jobs in each area.

Farmland assessed acreage increased in Pinelands municipalities by 13.5% between the periods 1986-1988 and 1996-1998. Pinelands counties contributed nearly 48% of total **agricultural sales** statewide in 1992 yet accounted for only 34% of land devoted to farming according to the Census of Agriculture. In terms of **net cash returns**, farms in Pinelands counties accounted for 57.4% of statewide returns in 1997, up 3% from 1992. Net cash return per farm in Pinelands counties also increased at a faster rate than the remainder of the State. However, the Census of Agriculture reports that more than half of New Jersey's farms lost money in the reporting years (1987, 1992 and 1997), and the proportion of farms losing money grew each year. Farmers in Pinelands counties continued to fare better than farmers in Non-Pinelands counties, but 45.6% were reported to have lost money in 1997.

Examination of two key Pinelands crops, **cranberries and blueberries**, revealed that cranberry production posted significant gains from 1972-1997 in terms of overall production and the value of utilized production. However, as Figure 8.4 shows, the prices for cranberries began falling sharply in 1998 and continued to decline in 1999. The reasons for the drop were twofold: 1) production increased as growers developed more efficient bogs to take advantage of good cranberry prices, and 2) demand for cranberries held steady. This surplus and increased foreign production of cranberries led to the price drops. Experts agree that it could be many years before the cranberry industry recovers from this economic slump.

**Figure 8.4
Cranberry and Blueberry Prices**



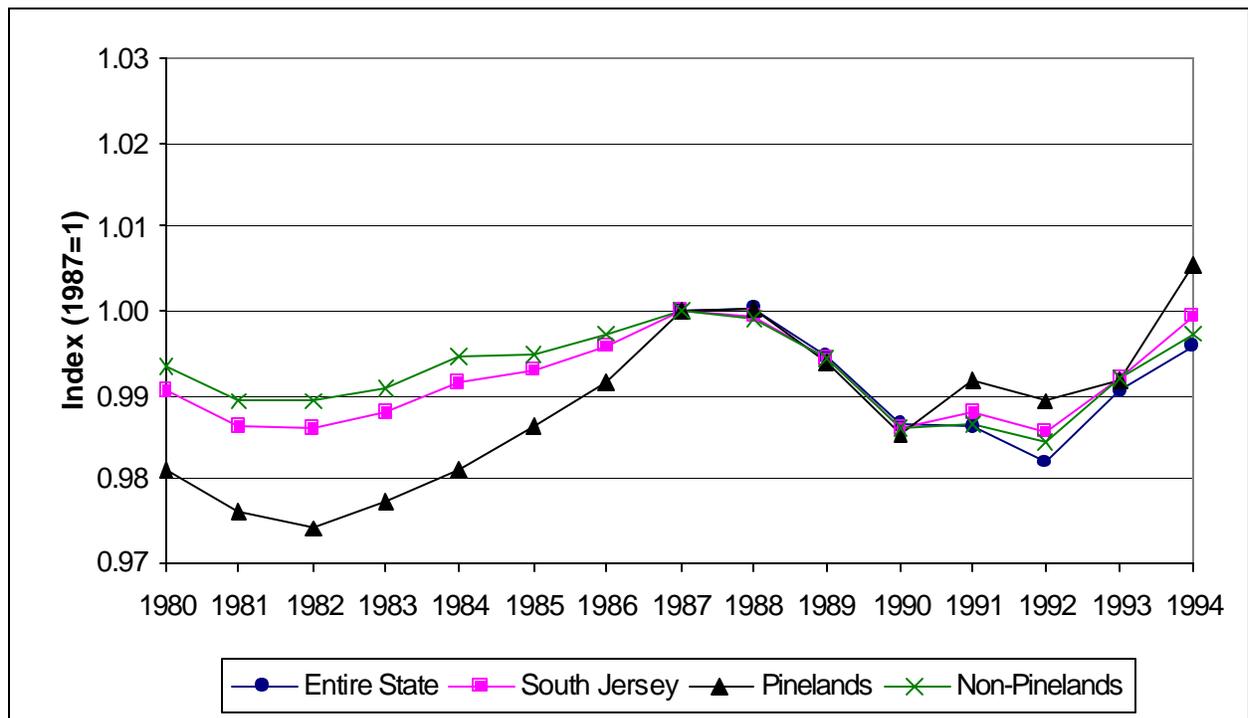
The value of utilized production for blueberries remained fairly steady with yearly fluctuations during the period 1972-1999. Production of blueberries increased 8% to 39 million pounds in 1999 and the value of production increased 26%. Most of the increased production value was due to a 16% rise in blueberry prices, as illustrated in Figure 8.4.

Municipal Finances

Nine variables are monitored annually to provide information on the fiscal health of municipalities: tax collection rates, assessment class proportions in municipal tax revenues, municipal expenditures by type per capita, municipal expenditures per household, average residential property tax bill, state equalized valuation, effective tax rates, population, and demographics.

Historically, Pinelands municipal **tax collection rates** have been lower than surrounding areas. This held true in 1980 and remained so through 1994, the last year for which data is available. However, Figure 8.5 shows that the rate at which collection rates are increasing in the Pinelands, particularly since 1990, is outpacing other areas.

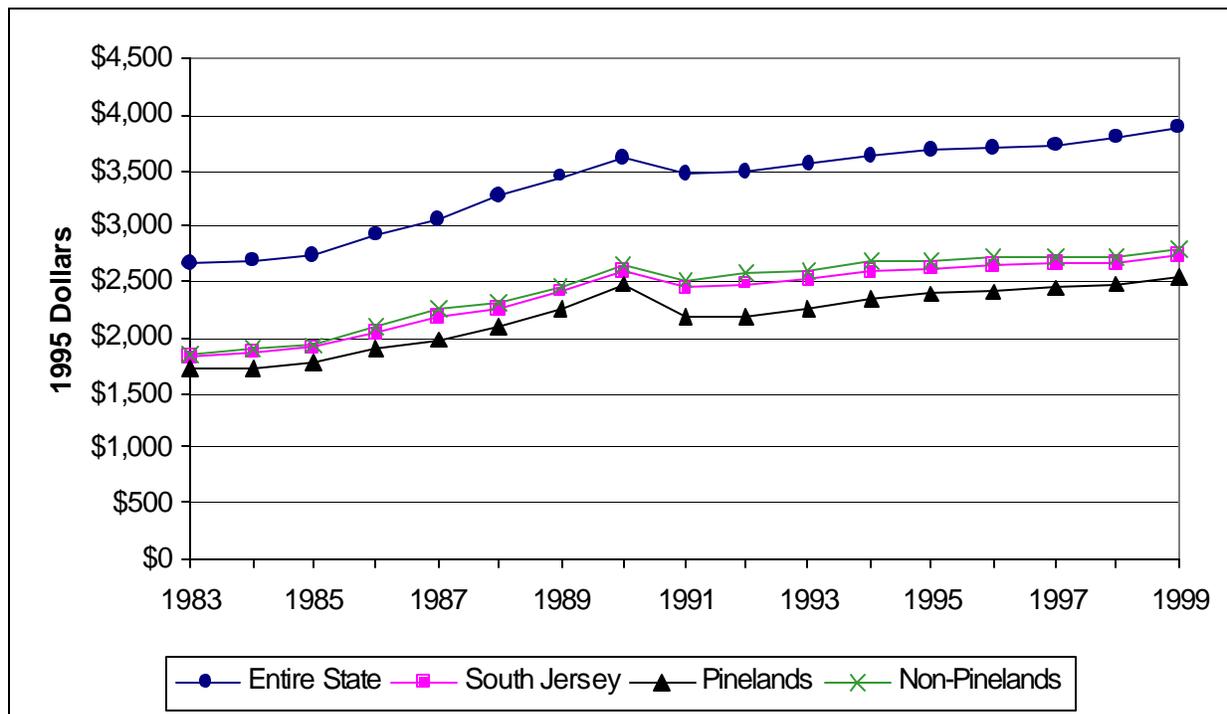
Figure 8.5
Index of Tax Collection Rate



In terms of **property assessments**, the Pinelands is characterized by the highest proportion of vacant land assessment and the lowest proportions of industrial and apartment assessments when compared against Non-Pinelands and State averages. **Per capita municipal expenditures** remained lower in the Pinelands as of 1994 (the most recent year for which data is available) and had increased since 1980 at roughly the same rate (40.1%) as the Non-Pinelands region (40.2%). **Municipal expenditures per household** were lower in the Pinelands than in the Non-Pinelands portion of Southern New Jersey in both 1980 and 1990 but increased slightly more in that decade (29.0% in the Pinelands) than in the Non-Pinelands (28.2%).

Average residential property tax bills throughout New Jersey demonstrated a gradual but steady pattern of increase through 1990, a decrease in 1991, followed again by a slow, continued increase. As Figure 8.6 illustrates, the annual rate of change for all geographic areas, including the Pinelands, was virtually the same. Residential taxes in the Pinelands are historically lower than in other areas and remained so throughout the monitoring period. The average 1999 Pinelands residential tax bill was \$230 less than the Non-Pinelands bill and \$1,300 less than the State's average.

Figure 8.6
Average Residential Property Tax Bill



Equalized valuations (the total value of taxable property) are historically lower in the Pinelands than in other areas and continued to be lower during the 1980-2000 period. However, the gap progressively narrowed. **Effective tax rates** in the Pinelands remained below rates outside the Pinelands throughout the 1980-1999 monitoring period, but the differential decreased somewhat from 1984 onward.

Pinelands **population** data were analyzed for the first time in 2000 at the census block level using ArcView GIS. In this way, a more geographically precise analysis can be performed. The results of this analysis reveal that approximately 277,000 people lived within the Pinelands boundary in 2000, a 5.5% increase over the 1990 population of approximately 263,000. By contrast, the Non-Pinelands portion of Southern New Jersey grew by 9.1% to 1,987,000 and the State grew by 8.9% to 8,414,000 over the same time period. In terms of Pinelands municipalities, population growth was highest in municipalities located along the edge of the

Pinelands, especially those located in the northern and eastern regions. Consistent with earlier estimates, Stafford, Jackson and Galloway grew the most in terms of percentages.

The 2000 Census also provided evidence of an aging working population (18-65 years old) both inside and outside of the Pinelands. The median age in the majority of Pinelands municipalities increased from a range of 30-34 in 1990 to a range of 35-39 in 2000. Similarly, the majority of Non-Pinelands municipalities moved up to the 35-39 median age group over the same period.

Municipal Comparables Analysis

In addition to the data compiled annually in each of the areas discussed above, the economic monitoring program includes an analysis of several variables in a different format to identify how activity may differ between groups of similar or “comparable” municipalities inside and outside of the Pinelands. Municipalities are grouped with other municipalities inside or outside of the Pinelands based on similarities as of 1980 in terms of access to major employment centers, population density, and per capita income. Average values for group members inside of the Pinelands are then compared with average values for group members outside of the Pinelands. Eight variables are analyzed in this format: building permits, tax collection rates, assessment class proportions, municipal expenditures by type per capita, municipal expenditures per household, average residential property tax bill, state equalized valuation, and effective tax rates. Results of the comparables analysis presented in the 2001 Report continue to show little of major concern. Refinement of the methodology to increase comparability, however, remains a key priority for future study.

SPECIAL STUDIES

Special studies represent the second major component of the monitoring program. One study may be initiated in each year of the program (individual studies may require more than one year to complete, depending on research requirements). Special studies will be released as separate reports upon their completion.

The blueberry industry is considered a vital resource to the Pinelands region. Data from the annual monitoring reports highlight its importance and needs. As a first special study, the Pinelands Commission, with the National Park Service's support, is assisting a Cook College research project titled “**A Cooperative Approach to the Development, Production, and Marketing of a Value-Added Blueberry Product**”. The project is a three-year effort that aims to boost the blueberry industry by developing commercially viable processed blueberry products that capitalize on the blueberry's nutraceutical value. The project is a university-industry-government partnership.

During the first year of the project (1999), prototypes were developed for four products: a blueberry sports beverage, blueberry juice, blueberry iced tea, and a blueberry solid extract or pomace. Sensory evaluations were then conducted involving 65 panelists. Of the four products tested, the blueberry iced tea was most preferred and the pomace was also well received. Reaction to the blueberry juice was mixed, and the sports drink was not well received.

In 2000, a company named Blueberry Health, Inc. was formed to continue research, development and marketing of value-added, nutraceutical blueberry products. Members of the New Jersey blueberry industry were given the opportunity to secure early investment options in the company, and a permanent nine-member Board of Directors was constituted.

Approximately 3,700 cases of “Jersey Blues” blueberry iced tea were produced in calendar year 2000 and another 4,500 cases were produced in 2001. Product marketing through agricultural outlets (i.e., farm stands) began in late July 2000. The iced tea has been marketed by more than 100 farm stands across the state, numerous smaller retailers (country stores, museums, etc.), and one large supermarket chain (Wegmans). Other large retailers are expected to carry the product in the near future. Feedback from retailers and consumers has been very positive. In addition, the blueberry pomace is widely sold to healthcare practitioners nationally and to health stores regionally by Herbalist & Alchemist (a New Jersey based botanical extract manufacturer).

Although the project was officially completed in November 2001, development and marketing of value-added blueberry products will continue indefinitely through Blueberry Health, Inc.

The second special study focuses on characterizing and identifying **municipalities' fiscal health**, particularly those that are in "poor" health. Although difficult to define, poor health can be described as being below a given standard with respect to social, economic, physical, and fiscal conditions. The project is being administered by Pinelands Commission staff and conducted in close consultation with the Pinelands Municipal Council. The final report for the project may provide a basis for proposed legislation by the Pinelands Municipal Council to provide special state aid to the most strained municipalities.

The goals of the project are to: 1) produce a database of indicators that are reflective of municipalities' social, economic, physical, and fiscal conditions; 2) produce an objective, systematic and repeatable model which can be used to identify municipalities that are experiencing poor health; 3) identify economically challenged communities using the results from the model; and 4) develop methods to calculate financial aid and/or other resources that may alleviate the degree of strain in the identified municipalities.

In January 2001, a short questionnaire was administered as part of the project. The questionnaire was given to municipal officials (i.e., mayors, financial officers, administrators, councilpersons, etc.) of 36 Pinelands municipalities. All municipalities with at least 50% of their land within the Pinelands were included (33 municipalities) plus three additional municipalities that requested to be included. The questionnaire was designed to reveal municipal officials' opinions on indicators of fiscal health and on ways to measure and compare fiscal health among municipalities. In general, the results of the questionnaire suggest that the most pressing municipal health concerns of the Pinelands municipalities relate to a healthy tax base (i.e., a mix of commercial, industrial, and residential land), tax rates, and school costs. These themes will be looked at more closely during the course of this project. In the coming months, a methodology will be developed to identify municipalities that are most stressed.

CHAPTER 9

SCIENCE PROGRAM

Scientific research and assessment efforts have been an integral component to the implementation of the CMP since its inception. The goal of the Commission's science program is to provide scientific information that may be used to develop and evaluate the Commission's environmental policies and programs. The Commission began designing a long-term environmental monitoring program in 1990, and Commission staff initiated components of the program in 1992. A formal agreement was executed with the NPS in 1994 to help fund the long-term environmental monitoring program and the Commission's economic monitoring program. Federal funding has been provided every year since then. Two main objectives of the program are to characterize the effect of existing land use patterns on aquatic and wetland resources and to monitor long-term changes in these resources.

In January 2000, the Pinelands Commission established a Science Advisory Committee to provide advice and technical assistance on the Commission's research and monitoring program. Committee members are Drs. John Dighton, Joan Ehrenfeld, Richard Lathrop, Anthony Navoy, and Peter Oudemans. Dr. Lathrop was named chairperson. At its first meeting in February 2000, the Committee endorsed the Commission's environmental monitoring program. In November 2001, the Science Advisory Committee members met with the full Commission regarding the Commission's research program. The primary objective of the meeting was to discuss future research priorities for the Science Office. The meeting generated in-depth discussions on a wide variety of topics. The Chairman has since announced the creation of a Committee of the Commission members to help prioritize research priorities, including those that may address important policy and permitting issues.

Since 1991, Commission scientists have completed a number of research and monitoring studies. Many of these studies have been published in peer-reviewed scientific journals. Published studies are summarized in this section along with a list of all reports and publications completed during the decade. A major accomplishment was the completion of the Mullica River Basin report which is also summarized in this section.

The Commission continues to seek a better understanding of the ecological resources of the Pinelands and how its day-to-day, as well as long-term, planning and decision-making efforts may affect these resources. Technology is providing an important new avenue for using the long-term monitoring data for a multitude of functions at the Commission, such as project review, permanent land protection, and local planning.

JOURNAL PUBLICATIONS

Water Resources

Water resources investigations are a major focus of the Commission's science program. Dow (1999) applied several established water quality trend-detection methods to the problem of detecting and quantifying streamflow impacts that could result from the interbasin transfer of water in the New Jersey Pinelands. A major objective of the study was to assess the sensitivity of the different methods in detecting base-flow changes. The results of the study have been applied directly to the Commission's ongoing stream-gaging programs in the Great Egg Harbor River and Mullica River basins.

Zampella (1994) related water quality measured by the US Geological Survey at fourteen Pinelands stream sites to urban and agricultural land uses in associated drainage basins. The analysis revealed a gradient of increasing pH, specific conductance, and concentrations of dissolved calcium, dissolved magnesium, total nitrite plus nitrate-nitrogen, total ammonia-nitrogen, and total phosphorus that paralleled a watershed-disturbance gradient of increasing land-use intensity and wastewater flow. It also established reference-site water quality characteristics of Pinelands streams. In a subsequent water quality study, Dow and Zampella (2000) assessed the use of pH and specific conductance as indicators of watershed disturbance in Pinelands streams. The results of the study provide a modeling tool for watershed managers to arrive at a relatively quick assessment of surface water quality at any Pinelands stream site relative to upstream land use disturbance. The model can also be used to predict ranges of pH and specific conductance for a given altered-land (upland agriculture and developed land) percentage or a change in existing altered-land conditions.

Due to the threat of nitrogen contamination by septic systems, the CMP requires 3.2-acre lots for homes served by standard septic systems. Until recently, the Commission permitted the use of subsurface pressure dosing septic systems for development on smaller lots. The Commission based this policy on the assumption that pressure dosing systems remove a substantial amount of wastewater nitrogen. Bunnell et al. (1999) tested this assumption by completing a field study that compared nitrogen removal in subsurface pressure dosing and standard gravity-flow septic systems serving single-family homes. The study found no significant difference in nitrogen removal between the two types of systems. This conclusion served as a basis for evaluating the Commission's alternative septic system program (see Chapter 7).

Aquatic and Wetland Communities

Commission scientists published several research papers that addressed the effect of land use on biological communities, including stream vegetation, Atlantic white cedar swamps, fish, and anurans (frogs and toads). The published studies, which served as the basis for several expanded surveys conducted as part of the Mullica River Basin study, provide a scientific basis for watershed assessments, acquisition criteria, and wetland protection programs.

In two stream studies (Zampella and Laidig 1997, Zampella and Bunnell 1998), major patterns in stream-channel and stream-bank plant species composition and stream fish assemblages were

related to complex watershed-disturbance gradients characterized by increasing upland agriculture and developed land cover and pH and specific conductance values. Surface waters in relatively undisturbed basins displayed lower pH and specific conductance values compared with waters in highly developed or farmed drainage basins. Sites within highly altered basins supported non-native fish species and a unique group of peripheral and exotic plant species.

A third watershed study (Laidig and Zampella 1999) examined the relationship of regional watershed conditions to plant species composition and richness in Atlantic white cedar swamps found in watersheds with high, moderate, and low percentages of altered land (upland agriculture and developed land cover). High watershed disturbance was associated with elevated pH, specific conductance, and nutrient concentrations in streams adjacent to our cedar swamp study sites. Unlike the stream vegetation study, the high-disturbance sites did not support a unique group of non-native plants. The study suggested that cedar swamps located a distance from upgradient watershed disturbances and not affected by overbank flooding from the adjacent stream seem to be buffered from the impacts of regional land use disturbances.

Two other Atlantic white cedar swamp studies were also completed by Commission scientists. Using aerial photography dating from 1930 through 1991 and recent satellite imagery, Zampella and Lathrop (1997) quantified trends in the extent and composition of Atlantic white cedar swamps within the Mullica River basin. Although the composition of individual cedar patches changed in response to varying disturbance regimes over the 61-year period, total cedar cover remained relatively constant. The dominant changes were conversion of cedar cover to shrub cover and succession from shrub to cedar. Contrary to prevailing thought, conversion of undisturbed cedar patches to hardwoods was not a major transition, suggesting that cedar harvesting is not necessary to sustain Atlantic white cedar wetlands in the Pinelands. To further test the premise that cedar-swamp succession is controlled through replacement by hardwood species, Zampella et al. (1999) analyzed the size-class structure of Atlantic white cedar swamps that were established prior to 1930. The study indicated that hardwood replacement of cedar in swamps is not a certain outcome of cedar swamp succession. If it does occur, it may take centuries and only result in conversion to mixed stands dominated by cedar.

In 1993, Commission scientists conducted a regional, anuran (frog and toad) vocalization survey of 87 sites in the Mullica River Basin (Zampella and Bunnell 2000). Compared to the eastern portion of the basin (referred to as the Wading River system), the western portion (referred to as the Mullica River system) was more intensely developed and farmed. Degraded waters, characterized by elevated pH, specific conductance, and nitrate-nitrogen values, were more frequently encountered in the western system. Differences in the distribution of both individual anuran species and species assemblages existed between the two systems. Six native Pinelands species were widely distributed in the basin. Border entrants, including bullfrogs were heard only in the Mullica River system. Pine Barrens treefrog and carpenter frog were generally absent and leopard frog occurred infrequently at sites where bullfrog occurred. A second study was conducted to determine if border entrants could successfully reproduce in acid-water ponds in the Mullica River Basin (Bunnell and Zampella 1999). Nighttime vocalization surveys and dip-net surveys were used to relate the distributions of adult and larval anurans to site-specific and regional environmental variables in 14 acid-water ponds. The ponds were located within drainage basins that displayed a range of developed and agricultural land cover. Although adult

border-entrants, which are species that are usually found in the Pinelands only at sites disturbed by human activities, were heard at ponds located along the transition between forested and disturbed landscapes, none were able to reproduce in the acid-water ponds. The results suggested that the distribution of adult anurans is influenced by landscape patterns whereas larval recruitment may be limited by pond chemistry.

Wetland Hydrologic Gradients

Pitch pine lowland forests are a dominant component of the Pinelands landscape. Pitch pine dominated lowland communities represent a complex of several vegetation types, ranging from transitional upland pine-oak forest to transitional pine-maple swamps. Commission scientists completed three studies relating the vegetation of these transitional wetlands to environmental factors and characterizing the features used to determine their wetland status. Zampella et al. (1992) related pitch pine lowland community gradients to several environmental factors, including water table level. The upland-to-wetland community gradient was associated with a complex environmental gradient characterized by increasing soil moisture and soil organic matter, and decreasing water table depth and bulk density. Because soil features are functionally related to water table depth, hydrology was identified as the primary factor responsible for the observed vegetation patterns. In a second study, Zampella (1994) related growing season water table levels to pitch pine lowland soil features, and concluded that morphologic and color pattern features are useful but not absolute indicators of water-table levels in the Lakewood catena soils associated with these lowlands. Most recently, Zampella et al. (2001) used simple linear regression and long-term (10 years) stream-gaging and pitch pine lowland water level data sets to estimate long-term water level fluctuations at lowland test sites with short-term (two years) records. The predictive ability of the regression models was excellent. Excellent agreement was also found between measured and estimated frequencies of near-surface saturation at test sites, and these relationships improved when cumulative-seasonal frequencies were considered. The reference-wetland approach used in this study can be used to accurately estimate long-term water levels in problem wetlands throughout the Pinelands.

THE MULLICA RIVER BASIN REPORT

The Mullica River Basin report (Zampella et al. 2001) presents the results of the Commission's long-term environmental monitoring program in this major Pinelands watershed. Major findings of studies that were published as part of the program are summarized in the report, and unpublished data are analyzed and discussed. All biological data collected during the study are included as appendices, along with water quality data that have not been previously published. The report describes the changing landscape of the Mullica River Basin, characterizes the status of the region's surface waters, relates water quality to land use patterns, and describes the composition of aquatic and wetland communities in relation to site-specific and regional drainage basin characteristics.

Most of the Mullica River Basin is forest land. Only 15% is developed or farmed. The basin comprises several major stream systems that display a diverse range of land use patterns. The land-cover composition of the Mullica River Basin was similar in 1979 and 1991. Most land-

cover transitions involved new development or the conversion of one agricultural land use to another and occurred in the appropriate Pinelands management areas. The largest increases in development-related land covers occurred in Regional Growth Areas and Rural Development Areas. Agricultural transitions occurred in Regional Growth Areas, Agricultural Production Areas, and Special Agricultural Production Areas. Resource extraction and timber harvest operations were concentrated in Special Agricultural Production Areas and the Preservation Area District.

The current status of the aquatic and wetland resources in each Mullica River Basin stream system is clearly related to existing land use patterns. Water quality attributes measured at 26 US Geological Survey stream monitoring sites increased along a watershed-disturbance gradient characterized by increasing developed land and upland agriculture cover. The strikingly different characteristics of Mullica River Basin reference stream sites and the degraded stream sites illustrate the effect of land use patterns on Pinelands water quality (See Table 9.1 Land Use and Water Quality). Multiple regression analyses revealed strong relationships between developed land and upland agriculture in a drainage basin, and pH, specific conductance, calcium, magnesium, and chloride. Most of the surface water impacts observed in the basin were associated with non-point sources. Figure 9.1 (Water Quality Map) illustrates the relationship between pH, specific conductance, nitrite plus nitrate nitrogen, and landscape patterns in the basin.

Table 9.1
Land Use And Water Quality Characteristics of Five Reference Stream Sites
And Five Degraded Stream Sites in the Mullica River Basin
(All values are medians)

Factor	Reference Sites	Degraded Sites
Upland agriculture (%)	<1.0	27.7
Wetland agriculture (%)	<1.0	<1.0
Developed land (%)	<1.0	23.9
Total altered land (%)	2.0	51.7
Calcium, dissolved (mg L ⁻¹)	0.47	4.9
Magnesium, dissolved (mg L ⁻¹)	0.30	2.4
Chloride, dissolved (mg L ⁻¹)	3.3	13
PH (standard units)	4.4	6.8
Specific conductance (µS cm ⁻¹)	39	104
Sulfate, dissolved (mg L ⁻¹)	3.6	9.6
Ammonia-N, dissolved (mg L ⁻¹)	<0.03	<0.03
Nitrite+nitrite-N, dis. (mg L ⁻¹)	<0.05	0.40
Total phosphorus (mg L ⁻¹)	<0.01	<0.01

As an ancillary component of the Commission's biological-monitoring program, Commission scientists completed field measurements of pH and specific conductance at 103 Mullica River Basin stream sites where stream vegetation, fish, and anurans (frogs and toads) were surveyed. Both water quality variables increased as the percentage of developed land and upland agriculture in a drainage basin increased, with higher values reported for the more heavily developed and farmed western side of the basin.

The results obtained using different ecological indicators were remarkably similar. Changes in the composition of stream vegetation, fish assemblages, and anuran communities paralleled gradients of increasing land use intensity and water quality degradation. Characteristic Pinelands plant species comprised stream vegetation communities at sites in watersheds with a low percentage of developed and upland agricultural land, low pH, and low concentrations of dissolved solids as indicated by specific conductance values. All sites surveyed in the forested eastern portion of the basin supported typical Pinelands stream vegetation communities and, with one exception, lacked plants that are indicative of land use disturbance. In contrast, sites in drainage basins with more extensive developed land and upland agriculture supported a higher percentage of disturbance-indicator species and other non-Pinelands plants (See Figures 9.2 and 9.3 Plant Pie-chart Maps). Most of the impacted stream basins are located in the western portion of the Mullica River basin.

A vegetation study of 13 off-stream Mullica River Basin ponds was also completed. Non-Pinelands and disturbance-indicator plant species were generally lacking in these acid-water ponds. This is especially noteworthy because several of the ponds are located in watersheds with moderate to high levels of developed land and upland agriculture. Streams in these disturbed basins display elevated pH and dissolved-solid concentrations and support vegetation characterized by the presence of non-Pinelands species. The acid-water ponds are not in direct contact with streams and appear to be buffered from upstream land use disturbances that influence in-stream conditions.

Fish were surveyed at 64 stream sites and 30 impoundment sites. Sites located in the eastern portion of the basin supported native Pinelands fish assemblages and, with one exception, lacked non-native fishes (See Figures 9.4 and 9.5 Fish Pie-chart Maps). Non-native fishes were frequently encountered in the west. Results based on an expanded anuran survey network that included 242 sites were similar to the Commission's initial study of 87 Mullica River Basin sites. Border-entrant anurans (non-Pinelands species) were found on the western portion of the basin (Figure 9.6: Frog Pie-chart Map). The bullfrog, a non-Pinelands species that appears to be a good indicator of water quality degradation, was completely absent from the eastern part of the basin. Conversely, a high percentage of sites on the western side of the basin contained non-Pinelands species. Bullfrogs were present at the vast majority of these western sites.

The relationships revealed through the Mullica River Basin studies offer insight about the eventual response of aquatic and wetland resources to various landscape pattern scenarios within the Mullica River Basin and other regions in the Pinelands. The results of the studies may provide general descriptive models with land use policy applications. The long-term environmental monitoring studies also helped to refine the concept of essential character introduced in the Pinelands legislation and the CMP. Pinelands reference site conditions were characterized and sets of reliable ecological indicators were established. These concepts can be applied directly to assessments of other Pinelands watersheds and associated aquatic and wetland communities. The concepts can also be used to identify critical areas for acquisition.

The water quality and biological information collected through the Mullica River Basin program represents a baseline data set that can be used for future assessments of the basin's aquatic and wetland resources. As the Commission embarks on its Mullica River Basin Watershed

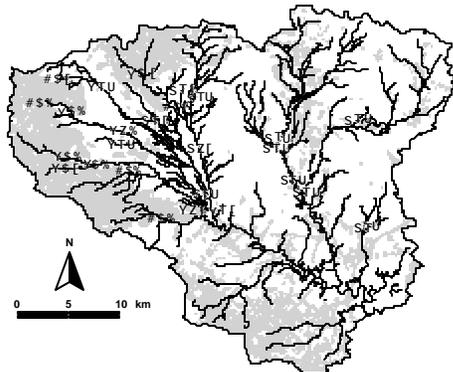
Management Program, the technical information included in this report also provides the information needed to accurately determine the status of surface waters in the watershed and serve as the basis for discussions on watershed management policy issues. Finally, the knowledge and experience gained through the Mullica River Basin monitoring program will be applied towards establishing an environmental database for other Pinelands watersheds. To this end, water quality and biological monitoring has been initiated in the Rancocas Creek Basin.

TIMBER RATTLESNAKE RESEARCH

In 2001, the Commission and the NJDEP Endangered and Non-Game Species Program initiated a three-year study to monitor the timber rattlesnake population in Evesham Township. This population is close to a partially completed residential development. Six snakes in this population were implanted with transmitters and radio-tracked throughout the field season. From May through November, rattlesnakes were checked every two to three days and their locations were recorded with a global positioning system. The snakes will continue to be tracked in the ensuing field seasons in order to examine the effects of the encroaching residential development and to evaluate the effectiveness of mitigation strategies (e.g., barrier fencing, under-road snake passages, etc.).

KIRKWOOD-COHANSEY PROJECT

Recent legislation (N.J.P.L. 2001 c. 165) directed the Pinelands Commission to assess and prepare a report on the key hydrologic and ecological information necessary to determine how the current and future water supply needs within the Pinelands Area may be met while protecting the Kirkwood-Cohansey aquifer system and avoiding any adverse ecological impact on the Pinelands Area. The Commission was also directed to conduct the study in cooperation with the NJDEP, Rutgers University, the US Fish and Wildlife Service, and the US Geological Survey. The legislation appropriated \$5.5 million from the Water Supply Fund created pursuant to the Water Supply Bond Act of 1981 (P. L. 1981, c.261, as amended by P. L. 1983, c. 355 and P. L. 1997, c. 223) to the NJDEP for the preparation of the aquifer assessment by the Pinelands Commission. Initial planning for this major initiative has begun.



Specific conductance ($\mu\text{S}/\text{cm}$) # 100 - 134 Y 60 - 99 S 37 - 59
 pH (pH units) \$ 6 - 6.80 Z 5 - 5.99 T 4.25 - 4.99
 $\text{NO}_2 + \text{NO}_3\text{-N}$ (mg/L) % 0.5 - 2.0 [0.1 - 0.49 U <0.05 - 0.099

Figure 9.1: Range of selected water-quality characteristics in the Mullica River Basin. Shaded areas represent developed and agricultural lands.

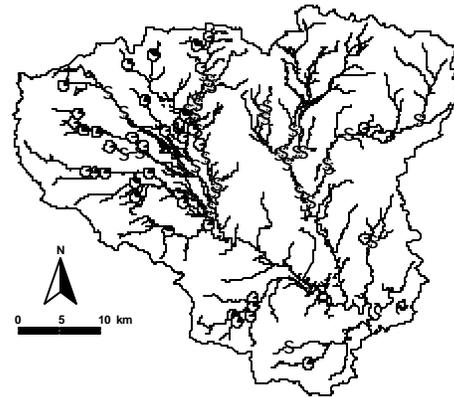


Figure 9.2: Pie charts showing as black the percentage of disturbance-indicator plant species found at 72 stream sites in the Mullica River Basin.

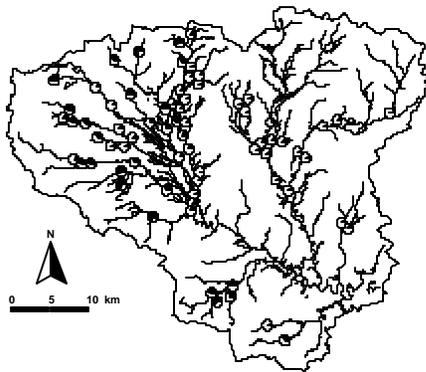


Figure 9.3: Pie charts showing as black the percentage of non-Pinelands plant species found at 72 stream sites in the Mullica River Basin.

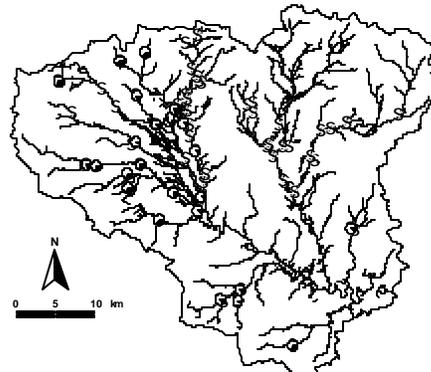


Figure 9.4: Pie charts showing the percentage of native (white) and non-native (black) fish species present at 64 stream sites in the Mullica River Basin.

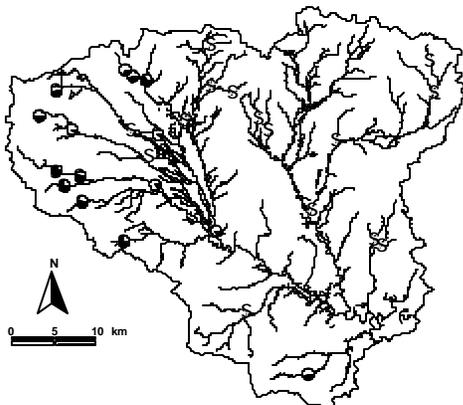


Figure 9.5: Pie charts showing the percentage of native (white) and non-native (black) fish species present at 30 impoundment sites in the Mullica River.

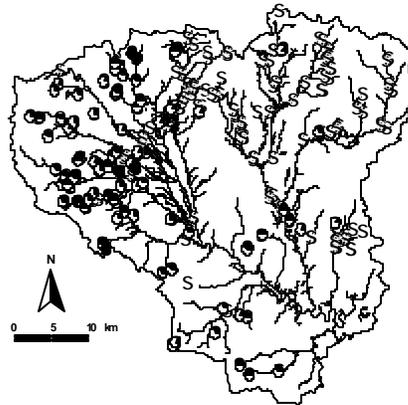


Figure 9.6: Pie charts showing the percentage of native (white) and non-native (black) anuran species present at 227 Mullica River Basin survey sites.

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CHAPTER 10

RECOMMENDATIONS

The preceding chapters of this report have described the major activities, initiatives and results of the Pinelands protection program over the last two decades. There are a number of lessons to be learned from those experiences, lessons that can help the Pinelands Commission further improve the protection program as it embarks upon this upcoming review of the CMP.

This report is intended to give all involved in the review process a common base of information to facilitate focused critiques and well-informed recommendations. As we proceed in this review over the course of this year, it is likely that supplemental information and assessments may be prepared to further address issues as they are deliberated.

As indicated by the Commission at the January and May retreats held in 2001, this plan review will largely focus on permanent land protection and development-related issues associated with regional growth area communities. There will also be opportunities for interested parties to convey other issues associated with the CMP most important to them. A key principle of the review is to actively seek ideas and input from interested organizations throughout this process. As comments are received and considered, the Commission, working with staff, will prioritize these issues and determine next steps and efforts.

An important step for the Commission will be to determine those topics that are the focus of panel discussions. For example, there are many related issues with respect to permanent land protection, such as identifying areas of ecological and agricultural value that are important to protect, reviewing existing programs to determine their effectiveness, and identifying new approaches to better accomplish this mission. The Commission, working with staff and interested parties, will need to assess and prioritize these issues in identifying future panel discussions.

As is the case with all regulatory programs, there are intended and unintended effects. The Commission views municipalities, residents, and businesses within the Pinelands as partners in this important mission. In addition to considering measures that will better achieve the objectives of the CMP, this review will also address some of the unintended effects of the regulations that may result in either operational or substantive issues for affected parties without the concomitant benefits of advancing the Pinelands mission.

Some initial recommendations along these lines were offered at a December 2001 meeting with a group of Pinelands “practitioners” to elicit ideas on operational aspects of the Pinelands program. Attorneys, engineers, consulting planners, developers, and municipal officials who work on zoning and permitting matters on a regular basis were asked to come together to share their ideas about improving business practices that govern the Commission’s review of master plans, ordinances and permits.

COMMUNITY DEVELOPMENT

Growth communities in the Pinelands are facing enormous development pressures, some of which we hope can be addressed through initiatives that are already underway. However, it is clear that these communities will need assistance and resources to address the wastewater, transportation, or other improvements needed to support this level of growth. Indeed, the Commission needs to consider these towns' ability to accommodate CMP prescribed densities as it continues to work with municipalities on these critical issues. In considering densities, the Commission can examine with affected townships the relationship of available land and resources to support future land use and development. The Commission could consider how best to use the remaining \$5.8 million from the existing **Pinelands Infrastructure Trust Fund** to help, albeit on a very limited basis, with needed infrastructure improvements. Much more meaningful, the proposed **Pinelands Water Resources Trust Bond Act** would, if enacted and passed by the voters, provide \$70 million for needed infrastructure improvements. Perhaps the Commission may wish to take another look at the scope and funding of this proposal to ensure that it is targeted to the greatest needs.

Transportation and stormwater management are two critical issues for growing communities that could benefit from creative multi-jurisdictional planning efforts and, of course, added capital funding. Other tools, such as **tax increment financing, improvement districts**, etc., could be investigated for use in Pinelands communities. Several Pinelands growth towns have expressed an interest in **timed growth** and **impact fee** legislation, either or both of which the Pinelands Commission could elect to investigate in detail and advocate. Pinelands regulations which currently authorize **Municipal Reserves** (areas that are zoned for lower densities now in anticipation of being rezoned for higher densities when utilities and services are available) could be re-examined to see how they may be better used as growth management tools.

In response to the growth area goal articulated at the Commission's workshops, two major initiatives have begun. A CMP amendment was just adopted to reduce **Regional Growth Area densities** in the most densely zoned municipalities. The staff will continue to work with the four primary beneficiaries (Hamilton and Egg Harbor Townships in Atlantic County and Manchester and Jackson Townships in Ocean County) to develop local plans and ordinances that implement lower zone densities in a reasonable and effective way. Staff will also be working with other growth communities which, although unaffected by this recent CMP amendment, have density- and growth-related issues. A major grant from the Geraldine R. Dodge Foundation will enable the Commission to assist two growth towns in creatively planning for **livable communities**. The grant will enable residents and community leaders to develop a vision for the future of their town. A nationally renowned planning and design firm will assist in the visioning process and work with the towns to develop specific plans and ordinance standards to achieve that vision. By working with the Pinelands Municipal Council and other growth communities, we expect that these ideas will be transferable to other developing municipalities in and beyond the Pinelands.

The needs may be different but no less compelling in more rural communities. The **Rural Economic Development Program** allowed seven rural municipalities to develop strategic development plans that are in keeping with Pinelands protection goals. But implementation has stalled without funding. Development of a realistic funding program, coupled with an aggressive

fundraising effort, might prove successful in launching some of these initiatives. One of the recurring needs in rural communities with small but vibrant villages is **community wastewater systems**. A pilot program could be launched in cooperation with one such municipality to seek grant funding to plan and design a small-scale community wastewater collection and treatment system that would not only help to support the town's economic development goals, but would also reduce the amount of non-point source pollution being generated by existing septic systems.

On behalf of all Pinelands municipalities, the Commission is working with the State Planning Commission and the Office of State Planning to ensure that Pinelands towns whose master plans and land use ordinances have been certified by the Commission are viewed in the same light as non-Pinelands towns whose plans have received state plan endorsement. This is an important benefit for municipalities seeking **state grants** where grant awards are based in part on state plan consistency. The staff also continues to work with the Office of State Planning and the NJDEP to harmonize Pinelands and **Coastal Area land use** recommendations in that portion of the PNR that lies outside the Pinelands Area but within the Coastal Area. Although there are no major land use inconsistencies, it is likely that some amendments to both the CMP and to coastal rules will be needed to fully reconcile land use policies.

PERMANENT LAND PROTECTION, RESOURCE PROTECTION, AND LAND MANAGEMENT

Public and private permanent land protection initiatives will be advanced in the coming year. The Commission's Permanent Land Protection Committee will continue to examine **priority acquisition** areas and, where appropriate, will be recommended to the Governor and the NJDEP for purchase. The Commission will be working with The Nature Conservancy to aggressively pursue land purchases being funded through the **Cape May County Municipal Utilities Authority Acquisition Fund**. The **Special PDC Purchase Program** will continue (subject to future appropriations) as we work with the PDC Bank on direct landowner purchases, with the NJDEP on the purchase of credits as part of the larger Pinelands Acquisition Program and with the SADC on the farmland easement purchase program. It is also noteworthy that the Commission is working with many municipalities who wish to expand **agricultural zones** to facilitate farmer participation in the farmland easement program. As landowner interest in the PDC Program increases (whether that interest lies in selling PDCs in the private market or to the PDC Bank, or in selling agricultural easements through the Farmland Preservation Program), the Commission's Project Review and Geographic Information offices must handle increasing numbers of LOIs, the vehicles through which property-specific **PDC allocations** are calculated. Collectively, these land acquisition and PDC initiatives represent the most cost effective means to protect important ecological and agricultural lands anywhere in New Jersey.

As knowledge of natural resources grows, there is a need to continually re-evaluate Pinelands land use policies to ensure that they remain in harmony. The **Toms River drainage** in Jackson and Manchester Townships in Ocean County is an example where new information suggests that Pinelands land use policies should be revised. Based on recent endangered species surveys, it appears that a significant part of a Pinelands Regional Growth Area may contain critical habitat for threatened animals and may not be appropriate to be developed at the scale and intensity

envisioned under current zoning ordinances. The Commission's planning staff, in cooperation with the municipalities, will be more thoroughly analyzing this situation so that a comprehensive land use recommendation can be presented to the Pinelands Commission. Such a proposal may involve a management area change that requires a formal amendment to the Pinelands land capability map.

There are a series of initiatives that could be considered to advance permanent land protection in the Pinelands. A **Pinelands Stewardship Committee** could be created to better coordinate government and non-governmental agencies' open space protection efforts. **Greenbelt planning** efforts could be explored as a means of preserving land and establishing permanent growth boundaries around developing areas. Concerted efforts could be made to have the U.S. Congress appropriate the remaining \$9 million in authorized "**502**" funding.

Land protection goals can also be advanced through the PDC Program and other transferable development rights initiatives. The Commission could re-visit the many options presented by the staff in 1999 to **enhance the PDC Program**. These include, among many other options, reducing the thresholds at which PDCs are used and authorizing PDC use to increase the intensity of business development. PDCs could also be allocated to **additional sending areas** to protect particularly critical portions of the Pinelands Forest Area. The use of other, **smaller scale development transfer programs** (similar to the pilot program established around the Renault Winery) could be investigated. The **Special PDC Purchase Program** might benefit from additional monies and a higher PDC Bank purchase price. In addition to this public purchase program, the Commission could also examine **private sector measures** that can increase PDC use.

The Commission has just proposed formal amendments to Pinelands regulations that, when adopted, will revitalize the effort to better protect water resources from septic system pollution. Five cutting-edge **alternative septic system technologies** will be authorized for trial use in the Pinelands, subject to strict monitoring protocols and operating safeguards. At the same time, pressure dosing septic systems will no longer be recognized as pollution-reducing systems. Through a generous grant from the NJDEP, the Commission has hired a wastewater coordinator to oversee the trial program and to develop a permanent and comprehensive **wastewater management program**, the goals of which are to ensure that the Pinelands continues to benefit from state-of-the-art septic system technology and that the institutional framework is in place to ensure that septic systems are properly installed, operated and maintained in the long run.

The **Mullica River watershed management** planning project was launched in 2000 and will continue to warrant close attention during the next few years. The Pinelands Commission has been designated by the NJDEP as the lead agency to guide the preparation of a management plan to protect water quality, water supply and natural resources in the Mullica Basin, one of 20 watershed management areas in New Jersey. This citizen-based planning effort will complement the Pinelands protection effort and represents a new emphasis on the reduction of non-point source pollution. Water resources planning and management are also the focus of the lower **Camden County water supply and wastewater management** project. Located in the upper reaches of the Mullica watershed, three municipal growth areas (Chesilhurst, Waterford and Winslow) are cooperating with the Camden County Municipal Utilities Authority and the

Pinelands Commission to limit the adverse effects of water withdrawals and wastewater discharges in the Pinelands. Development levels were lowered several years ago, environmentally based wastewater plans were developed, and a joint water supply plan was instituted to ensure that water supply wells are located in environmentally suitable areas. The parties continue to conduct stream flow monitoring to monitor impacts and are developing protocols to guide future zoning and wastewater decisions.

Pinelands management area delineations have not been comprehensively examined in twenty years. This is not to imply that these land use designations are no longer appropriate, but a thorough re-examination of current natural resource data might lead to a few refinements of **management area boundaries**. A somewhat related effort to quantify existing and future **levels of disturbance in every Pinelands sub-basin** would allow us to correlate these disturbance levels with Pinelands management area designations. The results could confirm the appropriateness of some management area designations and perhaps suggest a need for adjustments in other designations. **Regional Growth Areas** could also be re-evaluated to determine up-to-date development capacities and compare them against future housing demands.

Permitted uses may also warrant attention. As an alternative to an **overall re-assessment of the uses** that are permitted in each management area, the Commission could focus on the appropriateness of specific uses, in particular management areas. For example, at recent Pinelands Municipal Council meetings, it has been suggested by some that the issue of **off-road recreational vehicle use** should be re-examined to determine appropriate locations for such uses. The Commission might wish to revisit a proposal offered several years ago to develop more appropriate siting, design and management standards for **golf course** development in the Pinelands.

While much has been protected in the Pinelands, there are still areas with significant ecological values that remain unprotected. Critical habitats and endangered/threatened species can often be found in Forest and Rural Development Areas, many of which are discovered through site-specific application reviews. However, it is difficult to protect these types of resources on a site-by-site basis. In some cases, settlement agreements have been pursued when species were discovered after initial review of approvals. The Commission could launch a cooperative effort with public agencies, municipalities, non-governmental organizations, and the development community to identify **new ways to address these different resource protection issues**.

A number of the CMP's development standards could be examined. For example, is a **regional wetlands buffer** approach, as outlined in the Science Office's 1994 report, a better approach than the site-by-site application of the existing wetlands buffer model? Are there other ways to improve **wetlands buffer standards** to better protect natural resources? Are standards governing **water dependent and other uses** permitted in wetlands appropriate and workable? Are the standards controlling the use of **sludge-derived products** in the Pinelands too strict or too liberal? Should additional **non-point pollution** standards be added to Pinelands regulations or should we await recommendations from the Mullica watershed planning process? Are added **river corridor protection** standards warranted, particularly along the two nationally designated rivers in the Pinelands? Can best management practices be crafted to ensure that permitted development doesn't endanger **critical habitats** for threatened or endangered plants and

animals? How best can important **historic districts** be protected - through mandatory regional design standards, through localized visioning processes that tailor guidelines to the characteristics of individual districts or by some other means? Can the Commission become more pro-active in **cultural resource reviews**, particularly when public road improvement projects are involved? These are but a few of the many recommendations that have been offered over the years.

Although not directly related to Pinelands regulations, the Commission and the NJDEP joined together many years ago to adopt a cooperative **water supply policy** that was applied when new water supply wells were proposed in or near the Pinelands. This policy has since expired but the NJDEP representatives advise that the Department still follows the policy. Our staff has suggested several changes to strengthen the policy and the Commission may wish to look at those and others, including explicit **legislative authorization** for the NJDEP to deny new wells outside the Pinelands if they would negatively impact Pinelands resources. This could serve to better protect the Kirkwood-Cohansey aquifer until the regional aquifer assessment mentioned earlier is completed.

RESEARCH AND PLANNING

The Commission's economic and environmental monitoring programs will continue to provide important information to policy makers. Working with the Pinelands Municipal Council, the municipal **fiscal health project** will provide an objective means to compare Pinelands (and perhaps non-Pinelands) municipalities' fiscal situation. This may lead to a legislative proposal to financially help municipalities that are most stressed. A wealth of data on **land sales** inside and outside of the Pinelands will be analyzed to allow us to get a much better idea on the effect of Pinelands regulations on land values and economic issues related to Regional Growth Area communities and Pinelands Villages and Towns.

Environmental monitoring efforts will continue to expand beyond the Mullica River Basin as work in the **Rancocas and Great Egg Harbor drainage** areas continues. Work will also continue on two Environmental Protection Agency grant projects to compare biological communities in different types of water drainages and to assess the effect of watershed conditions on biological communities in Pinelands lakes. The **Sanctuary snake monitoring** program will continue to track and respond to timber rattlesnake issues over the coming years. Most significantly, the \$5.5 million **Kirkwood-Cohansey aquifer assessment** will begin. This massive undertaking, led by the Pinelands Commission and involving the NJDEP, Rutgers University, the United States Geological Survey, and the United States Fish and Wildlife Service, will determine how current and future water supply needs can be met while protecting this critical, surficial aquifer system. In addition to environmental monitoring, we will work with the Commission and its Science Advisory Committee to identify **other scientific research initiatives** that can benefit the Commission's implementation of the CMP. These efforts will also help us to address the Commission's permanent land protection efforts.

A major planning initiative is also underway to obtain **digital parcel data** for the entire Pinelands. Through a combination of sources, including a \$180,000 digitizing contract with a

private firm, the Pinelands Commission is in the process of securing digital tax maps and associated property data for all 53 Pinelands Area municipalities. This data has immense implications on virtually every facet of the Commission's planning and permitting functions. It will, for example, allow already digitized natural resource data, such as wetlands, to be geographically referenced to individual properties, greatly improving and speeding up permit reviews and land use analyses. This digital information will be made available to municipalities who should be able to greatly improve the reliability of a variety of local planning efforts.

The environmental and economic monitoring programs are largely funded by the Department of the Interior through a cooperative agreement with the National Park Service. However, funding levels have remained stagnant over the past eight years and will soon be insufficient to finance these programs' costs. The Commission could seek an **increase in federal appropriations** to sustain the monitoring programs and to support more applied research that will address critical management issues. The Commission could also identify other **applied scientific research initiatives** that can directly aid the Commission when faced with key regulatory and planning decisions. Of course, the Commission would also need to search for other ways to finance this type of research. The many areas outlined for possible study in the 2000 **economic monitoring** report could also be pursued.

Once the predictive model of prehistoric site occurrence in the Pinelands is completed, the Commission may wish to **field test** the model before it is fully implemented. **Expanding the research** beyond Atlantic and Burlington County locations would also increase the model's reliability as a predictive tool.

Lastly, **expanding geographically referenced databases** can be of immense help in all facets of the Commission's planning and regulatory responsibilities. More intensive **surveys of threatened and endangered plant and animals** throughout the region and geographically referencing these "hot spots" can enhance efforts to protect important natural resources and to streamline the permitting process.

OPERATIONS AND PERMIT STREAMLINING

Two related initiatives involve the Commission's information management systems. The 13-year-old automated **Development Review System**, that both tracks permits and maintains key historical data, will be redesigned to aid in our permit streamlining efforts and to create a platform upon which direct access by municipalities and the public can be provided. In cooperation with the PDC Bank, an integrated **Pinelands Development Credit Tracking System** is also being designed. This system will create a shared database that will enable instantaneous tracking of development rights and more complete analytical capabilities regarding their use.

Permit streamlining should get an added boost with the dedication of a new staff position to the effort. In addition to the many memoranda of agreement and permit streamlining ordinances that have already been put into place, the Commission expects to expand the Local Review Officer Program to cover additional categories of development. At the same time, we will provide these

local review officers with training and better information, much of which will be made possible through the parcel digitizing and information management initiatives discussed above.

Although the current initiative to redesign the automated Development Review System will create a platform upon which on-line permitting and local officials' access to important permitting information can be built, it is unlikely that existing financial resources will be adequate to implement a **seamless permitting system**. As is the case with several other initiatives, additional financing will be the key to this initiative.

Enforcement is an ongoing concern in the Pinelands. As is explained in Chapter 4, the Commission largely relies on local government to enforce Pinelands land use and development standards. Some have suggested that more staff resources need to be devoted to this responsibility. Others recommend a more comprehensive solution, including the possibility of State legislation to expand Commission enforcement authorities. Finally, some state agencies are inconsistent in their adherence to Pinelands protection requirements; the Commission could examine this issue and explore possible remedies.

Many issues and recommendations were raised at the December 11, 2001 meeting with attorneys, engineers, planners and other "practitioners" who deal with Pinelands regulations on a regular basis. The "**operational**" **recommendations summarized in Table 10.1** touch upon some of the items noted earlier in this chapter but also highlight others that were mentioned at the meeting.

EDUCATION AND INTERPRETATION

Two initiatives on which some progress has already been made may languish without additional resources and attention. As mentioned earlier in this chapter, the **Richard J. Sullivan Center for Environmental Policy and Education** will not reach its full potential as a dynamic venue for important policy discussion on land use and environmental issues, nor in its role as a catalyst for innovative educational programs without staff and financial resources. Implementation of a sound business plan for the Center will take an aggressive campaign to raise the necessary funds.

The **Pinelands interpretation program** is slated to receive almost \$1.2 million in federal grants for a host of interpretive media. This partnership arrangement with the NJDEP and the National Park Service has been progressing slowly, in large part because of two things. First, although the National Park Service is the lead partner, it has not been able to dedicate sufficient staff resources to research, plan, produce and fabricate much of proposed interpretive media. Second, a large amount of the funding is earmarked for interpretive exhibits in a new visitors center at Double Trouble State Park. Unfortunately, this new visitors center has yet to receive construction funding. The Commission could elect to re-examine this program in cooperation with its partners in the hope that new strategies or approaches can be developed to accelerate progress.

NEXT STEPS

The current initiatives and possible future initiatives discussed above merely skim the surface of issues, topics, ideas, and recommendations that can serve to further Pinelands protection goals in the years ahead. The hope, however, is that they will stimulate creative thought in the coming months as the Commission proceeds in its review of the CMP.

**Table 10.1
Summary of CMP Operational Issues and Recommendations
Identified at the December 11, 2001 “Practitioners” Meeting¹**

Topic	Issue/Recommendation Raised by One or More Participants
I. Land Use	
Municipal plans and ordinances	?? Commission should work closely with towns on outstanding issues when they re-examine their master plans and ordinances
Pinelands Development Credits	?? PDC Bank needs to become more of a broker to make sure that purchasers’ credit needs are met
II. Project Review	
Application requirements	?? Commission should provide help to applicants for individual homes so they don’ t have to retain attorneys and other consultants
Certificates of Filing (CFs)	?? Permit municipalities to begin application reviews before CFs are issued ?? Issue conditional or inconsistent CFs to allow minor outstanding items to be addressed during the local review process ?? CFs should be issued only to document application completeness and not its consistency with the CMP
Endangered Plants and Animals	?? Commission should finance surveys of plants and animals on a local basis
Landscaping	?? Many native plants do not provide adequate screening and are specified on plans when they aren’ t readily available
Letter of Interpretation	?? There should not be a fee when the Commission delineates freshwater wetlands on behalf of NJDEP
Commission review of development approvals	?? Commission should not review building permits for recently approved subdivisions ?? Commission’ s review of building permits should be quicker
Delegation of permit decisions to municipalities	?? Allow capable towns to handle building permit reviews ?? Expand the local review officer program to cover minor subdivisions and site plans
Forestry	?? Eliminate Forestry Committee reviews of state forestry applications that have already been reviewed within NJDEP ?? Forestry management plans for the state forests should be completed
Training	?? Provide more technical assistance to local review officers so towns are better positioned to assume permitting authorities ?? Conduct periodic professional training for attorneys, engineers, etc.
Public Access	?? Electronic filing of applications and plans should be allowed ?? Public should be able to access automated project status system which is tied into the NJDEP permit system ?? Staff accessibility by phone needs to be improved ?? Meeting notices should be sent out electronically
Septic Permits	?? Septic permitting should be better coordinated with the counties and the state to avoid duplication and delays
III. Enforcement	
Roles	?? Roles of the Pinelands Commission and local governments need to be made clear ?? Seminars with local enforcement officials need to be held
¹ In addition to the “operational” matters described in this table, some of the attendees raised policy issues related to farm-related housing, the amount and type of development in growth areas, providing a variety of housing opportunities, density transfers and business development, wetlands buffer determinations, encroachment of development into wetlands buffers, facilitating community wastewater treatment facilities, alternative septic systems for business use, and water table requirements for septic systems.	

APPENDIX I ABBREVIATIONS

ACUA	Atlantic County Utilities Authority
APA	Agricultural Production Area
CAFRA	Coastal Area Facility Review Act
CCMUA	Camden County Municipal Utilities Authority
CMCMUA	Cape May County Municipal Utilities Authority
CMP	Pinelands Comprehensive Management Plan
COAH	Council on Affordable Housing
CRMP	Cultural Resources Management Plan for Historic Period Sites
FA	Forest Area
FCC	Federal Communications Commission
GIS	Geographic Information Systems
HPF	Historic Preservation Fund
LOI	Letter of Interpretation
LPU	Limited Practical Use (land acquisition program)
LRO	Local Review Officer
MOA	Memorandum of Agreement
NJDEP	New Jersey Department of Environmental Protection
NJDOT	New Jersey Department of Transportation
NPS	National Park Service
OCUA	Ocean County Utilities Authority
OSP	New Jersey Office of State Planning
PAD	Preservation Area District
PCS	Personal Communications Service/System
PDC	Pinelands Development Credit
PDC Bank	New Jersey Pinelands Development Credit Bank
PITF	Pinelands Infrastructure Trust Fund
PNR	Pinelands National Reserve
PT	Pinelands Town
PV	Pinelands Village
RDA	Rural Development Area
RGA	Regional Growth Area
SADC	State Agriculture Development Committee
SAPA	Special Agricultural Production Area
SDRP	State Development and Redevelopment Plan
TCA	Telecommunications Act of 1996
USACOE	United States Army Core of Engineers
WMA	Wildlife (or Watershed) Management Area

