DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT

DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT FOR THE CENTRAL PINE BARRENS COMPREHENSIVE LAND MANAGEMENT PLAN

PROJECT LOCATION: CENTRAL PINE BARRENS AREA - within the Towns of Brookhaven, Southampton and Riverhead and Villages of Quoque and Westhampton Beach

LEAD AGENCY:
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DATE OF PREPARATION: July, 1994

AVAILABILITY OF DOCUMENT: This document represents a Draft Generic Environmental Impact Statement (DGEIS) pursuant to a positive declaration issued by the lead agency. Copies are available for public review and comment at the offices of the lead agency.

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TABLE OF CONTENTS

FIGURES, MAPS AND TABLES IN THE TEXT

LIST OF FIGURES

LIST OF FIGURES (Cont'd.)

LIST OF FIGURES (Cont'd.)

LIST OF FIGURES (Cont'd.)

Draft Generic Environmental Impact Statement

LIST OF APPENDICES

DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT

Summary

The purpose of this Draft Generic Environmental Impact Statement (DGEIS) is to evaluate the potential environmental impacts the Central Pine Barrens Comprehensive Land Use Plan (the Plan) may have on the Central Pine Barrens area located within the Towns of Brookhaven, Southampton and Riverhead and the Villages of Quogue and Westhampton Beach. The Plan and the DGEIS have been drafted in response to the requirements specified in the Long Island Pine Barrens Protection Act. This act that was signed into law in July, 1993 required the preparation of the Plan to provide a method for the comprehensive management and protection of the ecological and hydrological integrity of the statewide significant region known as the Long Island Central Pine Barrens, while providing a more predictable and efficient procedure for approving compatible real estate development in those portions of the pine barrens suitable for development.

The passage of Central Pine Barrens Protection Act ("The Act") (Chapter 262 as amended by 263 of the New York State Laws of 1993) lead to the creation of the third largest open space preserve in New York State, the Long Island Central Pine Barrens. The Long Island Pine Barrens is recognized as one of the natural treasures of the Northeast and represents a globally unique ecosystem that is formed on extensive glacial deposits along the coast. The Long Island Pine Barrens originally covered 250,000 acres on Long Island and has since been reduced to approximately 100,000 acres. The Pine Barrens is home to thousands of plant and animal species, many of them endangered or threatened with extinction or extirpation. The majority of the Central Pine Barrens overlies an area where deep aquifer recharge occurs. Groundwater in this area is considered of relatively pure quality, warranting special protection as an important drinking water resource. The passage of this Act represented a resolution of a five year standoff between developer and environmental interests in the Central Pine Barrens area.

The Law created a core preservation area of approximately 50,000 acres that is largely undeveloped and a comparable sized compatible growth area that generally surrounds the core preservation area. The largest portion of the Central Pine Barrens area lies within the Town of Brookhaven, with the rest extending into the Towns of Riverhead and Southampton. Small areas are also located within the northern portion of the Villages of Quoque and Westhampton Beach. The boundaries of the Plan and DGEIS study area are statutorily defined in ECL 57-0107(10) for the Central Pine Barrens and in ECL 57-0107(11) for the core preservation area, and ECL 57-0107(12) for the compatible growth area.

The Central Pine Barrens Act pursuant to Section 57-0121(7) designated the Central Pine Barrens Commission as lead agency for this generic environmental impact statement. The law further states that the DGEIS is part of the land use plan. Therefore, the DGEIS appears as Chapter VII. of the Plan and makes reference to information contained in the Plan to support its evaluation of impacts. This chapter containing the DGEIS and the chapters of the Plan constitute the DGEIS on the Plan. This DGEIS is designed to provide an evaluation of the positive and negative cumulative impacts that may occur on the overall pine barren ecosystems and ground water resources located within the Central Pine Barrens area through its evaluation of the Plan's components.

The Commission as lead agency determined that the proposed action is a Type I action that may have a significant effect on the environment and therefore a DGEIS must be prepared. A Positive Declaration on this action was issued by the Commission on April 13, 1994 and published in the Environmental Notice Bulletin, Issue No. 17 on April 27, 1994. An opportunity for public input on the content of the DGEIS was made possible during a public scoping meeting held on April 27, 1994 at the Longwood Junior High School in Middle Island. This DGEIS and draft Plan will be the subject of a public hearing and a public review process

under the State Environmental Quality Review Act, in conjunction with the statutorily required public hearings on the Plan.

The preparation of a generic EIS that is more general than a site-specific EIS is typically used to consider broad-based actions or related groups of actions that agencies are likely to approve, fund, or directly undertake. The broader focus of a generic EIS aids in the identification and analysis of the cumulative effects of a group of actions or a combination of effects from a single action. As in this DGEIS, it may be used to evaluate programs or plans that have wide application or restrict the range of future alternative policies such as agency regulations or permit programs, master plans or resource management plans. The same basic SEQR procedures, notices and filing requirements apply to generic EISs as apply to other types of EISs.

As required under ECL 57-0121(12) of the Central Pine Barrens Act, following consultation with the Advisory Committee and the Commission is required to publish the draft land use plan. This twelve month period ends on July 14, 1994. Within three months of publication, the Commission is required to hold public informational meetings in the Towns of Brookhaven, Riverhead and Southampton and to hold at least one public hearing within the Central Pine Barrens area. During this time period, the Commission is to receive and review comments on the draft land use plan and generic environmental impact statement from state and local governments and the public. Within the next three month period, the Commission is required to complete and recommend for ratification a revised comprehensive land use plan and final generic impact statement, to the respective town boards for their ratification and adoption of the statement of findings pursuant to Article eight of the ECL. Upon ratification and adoption by the three towns, the Commission itself will formally adopt the plan and generic environmental impact statement, and its provisions will then be in full force. The adoption of the Plan and DGEIS must be by unanimous approval of the Commission members.

The DGEIS contains the following sections:

A. Proposed Action: Central Pine Barrens Comprehensive Land Management Plan
B. Environmental Setting
C. Potential Environmental Impacts
D. General Mitigating Measures
E. Alternatives to the Plan
F. Adverse Environmental Impacts That Cannot Be Avoided
G. Irreversible and Irretrievable Commitment of Resources
H. Growth Inducing Aspects
I. Effects On The Use And Conservation Of Energy Resources

References

It should be noted that an economic impact analysis of the Plan is currently being prepared by the Harriman School at the State University at Stony Brook and will appear as a separate chapter (Chapter VI.) of the Plan. The economic analysis of the Plan is anticipated to be completed in August, 1994. The existing economic conditions in the Central Pine Barrens that has been compiled as background information for the economic impact analysis appears in Chapter VI of the Plan.

The environmental setting section provides an overview of the environmental conditions for the Central Pine Barrens area (ie: core preservation area, compatible growth area, and receiving areas). The information presented in this section highlights the detailed inventory of existing environmental conditions for the Central Pine Barrens area that is provided in Chapter IV of the Plan that is entitled: **THE CENTRAL PINE BARRENS TODAY - An Inventory and Analysis of Existing Conditions.** The description of existing conditions includes information on natural resources (ie: geology, soils, hydrology, and pine barrens

ecosystems), cultural resources, and physical data (ie: population, land use, zoning, public and administrative boundaries and infrastructure) for an area. The information on environmental conditions in Chapter IV of the Plan provided specific information for the core and compatible growth area, where warranted, to identify environmental conditions that are unique to these areas.

The description of existing conditions provided in Chapter IV of the Plan also pertains to the receiving areas that have been designated by the three towns (Brookhaven, Southampton and Riverhead). Information on the selection of these receiving areas and their relationship to the overall Pine Barrens Credit Program is contained in Chapter V.D. of the Plan. A discussion on *Air Resources* is included in the **Environmental Setting** section for the DGEIS that does not appear in the Plan.

The section on potential environmental impacts provides a description of impacts on the core preservation area, compatible growth area and receiving areas that could potentially occur from the implementation of the Plan. The overall impact of the Plan on the core preservation would be positive since the components of the Plan provide for the protection of the core area and designates this area as a critical resource area. Any action therefore, within the core area would be under the jurisdiction of the Commission and required to be reviewed by the Commission.

In addition, the core area will be protected by redirecting development away from this area through the transfer of development rights from parcels within the core area to areas outside of the core. This will be accomplished through a number of land protection mechanisms specified in the Plan and in particular, through the Pine Barrens Credit Program. This program will involve the transfer of development rights from parcels in the core to receiving areas (areas outside of the core area) that can accommodate these development rights. It should be noted that 32,580 acres are already preserved in the core as public land (includes: federal, state and town - parks and open space and county and town development right areas and surface waters).

The impacts on the Compatible Growth Area (CGA) that would be expected to result from the implementation of the Plan are discussed in terms of potential build-out under existing zoning that would occur for privately held vacant land.

According to the Plan, development within the CGA will be subject to the **Standards for Land Use** as contained in the **Plan Implementation** section. Those standards clearly delineate the environmental criteria and policies with respect to water resources, wetlands and surface waters, ecological resources, land resources, coordinated planning design, open space management, agricultural and horticultural, commercial and industrial development, and transportation, that development within the CGA must meet.

The impacts on receiving areas designated by the three towns is discussed in terms of how the allocation of pine barrens credits from the sending areas (ie: core preservation area)will impact the receiving areas. The receiving areas will be allowed to be developed more densely and the potential impact this will have on the developed sites in terms of clearance and infrastructure requirements is identified in the DGEIS. The transfer of Pine Barren Credits to receiving areas within the three towns (Brookhaven, Southampton and Riverhead) is anticipated to have less impact than development that is sprawled out throughout the towns since denser development will result in more efficient use of infrastructure and less clearance of land. This is provided the receiving areas do not contain any sensitive environmental features and the appropriate sewage treatment methods are used to minimize impacts to groundwater resources. The DGEIS states the potential increase in traffic that could result from the increased density will have to be analyzed in such areas and the necessary infrastructure improvements to roads would have to be made to minimize any potential traffic impacts.

The DGEIS discusses mitigation measures that have been incorporated into the Plan to reduce the potential environmental impacts of the Plan on the Core area, CGA, and receiving areas.

For the core area, the following mitigation measures are described in the DGEIS that are part of the Plan:

1. The Core is considered a critical resource area and within the plan its preservation is called for. As such, the vast majority of the privately-owned undeveloped vacant property within the Core, minus the permitted uses called for within the plan, is proposed for preservation.

2. Being a critical resource area, any proposed development within the Core is subject to the review and standards as set forth by the Central Pine Barrens Joint Planning and Policy Commission. Under the plan, any development allowed within the Core would be subject to strict environmental review by the Commission which would allow only development which is permitted under the plan and meets all environmental requirements, or subject to extreme hardship.

3. The Plan established a Pine Barrens Credit Program where development credits are transferred from undeveloped open space within the Core to designated receiving areas within the CGA and adjacent areas within the various towns. Each town absorbs its own development credits generated by the Core area under its jurisdiction.

For the compatible growth area, the following mitigation measures are described in the DGEIS that are part of the Plan:

The Plan establishes minimum standards, performance specifications and requirements which local municipalities are required to incorporate into local land use and development, review procedures, ordinances and laws, with respect to proposed development within the CGA. They also comprise the policies and standards which the Commission itself will apply to those projects which it directly reviews within the CGA. The various policies and minimum standards as set forth by the Commission that apply to the CGA are as follows:

For the receiving areas, the following mitigation measures are described in the DGEIS that are part of the Plan:

1. All development within receiving areas shall be in conformance with Articles 6, 7 and 12 of the Suffolk County Sanitary Code. Overall developmental build out will be at a density of no more than 600 gallons of sewage per acre. If the threshold of 600 gallons per acre is exceeded, then a sewage treatment plant is required.

2. Development within receiving areas will not take place in any sensitive environmental areas as set forth in the plan, such as areas with unique geologic features, i.e., kames and kettleholes, 100 ft. from wetlands and surface waters, steep-sloped areas greater than 15%, areas containing rare and endangered species, areas of unique cultural or historic value.

Alternatives to the Plan that are discussed in the DGEIS include:
Alternative 1: No Action - evaluates what the build-out in the core and compatible growth area under existing zoning (ie: no Plan),

Alternative 2: Long Island Comprehensive Special Groundwater Protection Areas (SGPA) Plan

Alternative 3: Total Acquisition of All Privately Owned Vacant Land in the Core Preservation Area Through Direct Purchase

The DGEIS includes a discussion of adverse environmental impacts that cannot be avoided if the proposed plan is implemented.

This section focuses on potential adverse impacts that may result from the implementation of the Plan that could affect the core, compatible growth area and receiving areas.

A potential irreversible, irretrievable commitment of resources that may occur from the implementation of the Plan was identified in the DGEIS in terms of the monetary resources that may be required to acquire certain vacant parcels within the core preservation area to ensure their protection and also the potential lose in tax revenue from these lands that are acquired outright.

The DGEIS identifies potential growth inducing impacts that may occur as a result of the implementation of this Plan. These impacts were identified as most likely to occur in the receiving areas where a controlled increase in density for development projects outside of the core area would be allowed through the use of pine barrens credits. It is noted in the DGEIS,however, that the overall total number of units generated within the towns would be the same with no net increase in the number of units occurring since the units are just being transferred from one area (core) to another area within the town (receiving area).
Potential growth inducing impacts may occur from the increase population density that could in turn have a growth inducing impact on schools districts, infrastructure and community services.

The DGEIS discusses the effect the implementation of the Plan may have on the use and conservation of energy resource. In general the DGEIS states that the implementation of the Plan will result in a decrease in the energy needs for the core preservation area since development will be directed away from this area. The overall effect of the Plan on the use and conservation of energy resources within the town is anticipated to remain the same since the number of units are just being transferred from one area (core) to another area (receiving area) within the town. The DGEIS mentions that for the receiving areas it is likely that energy resources would be more efficiently used in more compactly developed areas.

Overall, the implementation of the Plan will result in the protection of significant pine barren habitats that are recognized as globally unique and contain many rare and endangered species. In addition, the implementation of the Plan will add in the protection of ground water resources that are of relatively high quality that underlie the Central Pine Barrens area by redirecting development away from the core preservation area and by managing additional growth that would occur in the compatible growth area through minimum criteria standards for development.

Therefore, the implementation of the Plan is not expected to result in any unavoidable adverse impacts that cannot be mitigated.
A. Proposed Action: Central Pine Barrens Comprehensive Land Use Plan

Introduction
The proposed action for review in this draft generic environmental impact statement (DGEIS) is the Central Pine Barrens Comprehensive Land Use Plan, hereinafter referred to as "the Plan". The preparation of the Plan and this DGEIS fulfill specified mandates within the Central Pine Barrens Protection Act.

DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT

The passage of Central Pine Barrens Protection Act ("The Act") (Chapter 262 as amended by 263 of the New York State Laws of 1993) lead to the creation of the third largest open space preserve in New York State, the Long Island Central Pine Barrens. The Long Island Pine Barrens is recognized as one of the natural treasures of the Northeast and represents a globally unique ecosystem that is formed on extensive glacial deposits along the coast. The Long Island Pine Barrens originally covered 250,000 acres on Long Island and has since been reduced to approximately 100,000 acres. The Pine Barrens is home to thousands of plant and animal species, many of them endangered or threatened with extinction or extirpation. The majority of the Central Pine Barrens overlies an area where deep aquifer recharge occurs. Groundwater in this area is considered of relatively pure quality, warranting special protection as an important drinking water resource. The passage of this Act represented a resolution of a five year standoff between developer and environmental interests in the Central Pine Barrens area.

The Law created a core preservation area of approximately 50,000 acres that is largely undeveloped and a comparable sized compatible growth area that generally surrounds the core preservation area. The largest portion of the Central Pine Barrens area lies within the Town of Brookhaven, with the rest extending into the Towns of Riverhead and Southampton. Small areas are also located within the northern portion of the Villages of Quoque and Westhampton Beach.

The purpose of the Law, and ultimately the Plan, is to protect the ecological and hydrological integrity of the statewide significant region known as the Long Island Central Pine Barrens while providing a more predictable and efficient procedure for approving compatible real estate development in those portions of the Pine Barrens suitable for development. To achieve this, the Law created the Central Pine Barrens Joint Planning and Policy Commission ("The Commission") whose membership is comprised of the Supervisors of Brookhaven, Riverhead, and Southampton, Suffolk County Executive and the Governor or their respective designees.

The Law mandates that the Commission oversee, prepare, and adopt a well designed, scientifically based comprehensive management plan for the Central Pine Barrens area during a one year planning period that started with the signing of the Act into law on July 14, 1993. Section 57-0121(2),(3),(4) of the Law delineated specific goals and objectives for the Plan that are outlined in Section III of the Plan and presented below as they relate to the overall Central Pine Barrens area, core preservation area and compatible growth area:

> *The overall goal of the Plan as specified by the Central Pine Barrens Protection Act is to preserve the pine barrens ecology and to ensure the high quality of ground water within the Central Pine Barrens area. This goal includes maintaining the balance between public and private interests in development and the protection of the pine barrens ecology that is consistent with the objectives and policies of this Plan outlined below:*
>
> *Objectives:*
>
> - *to protect, preserve and enhance the functional integrity of the pine barrens ecosystem and the significant natural resources of the pine barrens that includes plant and animal populations and communities.*
> - *to protect the quality of surface water and groundwater*
>
> *Policies:*
>
> - *to discourage piecemeal and scattered development*

- *to promote active and passive recreational and environmental educational uses that are consistent with the land use plan*

- *to accommodate development in a manner that is consistent with the long term integrity of the pine barrens ecosystem and to ensure that the pattern of development is compact, efficient and orderly*

The goal of the Plan for the core preservation area is to protect and preserve the ecologic and hydrologic functions of the pine barrens within this area. The elements of the Plan address the following objectives and policies to achieve this goal for the core preservation area.

Objectives

- *to preserve the pine barrens area in their natural state to insure the continuation of the pine barrens environments which contain the unique and significant ecologic, hydrogeologic and other resources representative of such environments*

- *to protect and to preserve the quality of surface water and groundwater*

Policies

- *to promote compatible agricultural, horticultural and open space recreational uses within the framework of maintaining a pine barrens environment and minimizing the impact of such activities on this environment.*

- *to prohibit or redirect new construction or development*

- *to accommodate specific pine barrens management practices, such as prescribed burning, necessary to maintain the special ecology of the preservation area*

- *to coordinate and provide for the acquisition of private land interests as appropriate and consistent with available funds*

The goal of the Plan with regard to the compatible growth area is to preserve and maintain the essential character of the existing pine barrens environment including plant and animal species that are indigenous, including their respective habitats. The elements of the Plan address the following objectives and policies to achieve this goal for the compatible growth area.

Objectives

- *to protect the quality of surface and groundwater*

Policies

- *to discourage piecemeal development*
- *to encourage appropriate patterns of compatible residential, commercial, agricultural, and industrial development in order to accommodate regional growth influences in an orderly way while protecting the pine barrens environment from individual and cumulative adverse impacts*
- *to accommodate a portion of development redirected from the preservation area that may include development to be redirected across municipal boundaries*
- *to allow appropriate growth consistent with the natural resource goals pursuant to the Central Pine Barrens Protection Act.*

The Plan is divided into seven chapters, that includes this DGEIS appearing as the seventh chapter:

CHAPTER I: EXECUTIVE SUMMARY
CHAPTER II: INTRODUCTION
CHAPTER III: CENTRAL PINE BARRENS EVOLUTION AND PRESERVATION
CHAPTER IV: THE CENTRAL PINE BARRENS TODAY
CHAPTER V: THE PINE BARRENS PLAN
CHAPTER VI: ECONOMIC IMPACT ANALYSIS
CHAPTER VII: DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT

The Plan is required by law to address specific elements (ie: land use, natural resources, critical resource areas, land management) as stated in Section 57-0121(6) of the Central Pine Barrens Act. The law also indicated the types of previous studies and plans that should be considered when preparing the Plan (ECL 57-0121(5)). Presented below are the required Plan components specified in the law followed by the Chapter in the Plan that contains a discussion of that component.

Subpart 6 of section 57-0121 of the Environmental Conservation Law lists the required plan contents. The following list reiterates the law and briefly describes the status of that section as of the date of this preliminary draft.

(a) *Statements of objectives, policies and standards as they pertain to the purposes of this article and the land use plan. (Chapters III and V.A).*
(b) *A map depicting the core preservation area.(Chapter II.A)*
(c) *A map depicting compatible growth areas in the Central Pine Barrens area where orderly and environmentally compatible development can be encouraged and to which development potential within the preserve may be transferred. (Chapter II.A.)*
(d) *A phased public improvement element for providing the public facilities necessary for carrying out the goals for the core preservation and compatible growth areas. (Chapter V.F.)*
(e) *Identification and mapping of critical resource areas within the Central Pine Barrens area which are of regional or statewide significance. Such areas shall include fragile lands, significant shorelands of rivers, lakes, and streams; freshwater wetlands; significant wildlife habitats; unique scenic or*

historic features; and rare or valuable ecosystems and geological formations which are of regional or statewide significance. (Chapter IV.A.)

(f) Identification of sending districts in core preservation and compatible growth areas and receiving districts in compatible growth areas and outside the Central Pine Barrens area for the purpose of providing for the transfer of development rights and values to further the preservation and development goals of the land use plan and methodologies and standards for procedural equity and appropriate values in establishing rights and values consistent with the provisions of section two hundred sixty-one-a of the town law. (Chapters V.B. and V.D.)

(g) Identification of land suitable for agricultural use and necessary and appropriate strategies to protect land capable of agricultural production. (Chapter V.B.)

(h) Development criteria and performance standards. (Chapter V.B.)

(i) An intergovernmental coordination and consistency component establishing the ways in which state and local programs and policies may best be coordinated to promote the goals and implement the policies of the land use plan. (Chapter V.C.)

(j) A financial component analyzing the public and private cost of developing and implementing the land use plan which shall include (Chapter V.I.):

- *(i) detailed costs including those for infrastructure improvements, acquisition of fee simple or other interests in lands for preservation or recreation purposes, compensation guarantees, general administrative costs and any anticipated extraordinary or continuing costs: and*
- *(ii) the source of revenue for covering such costs, including but not limited to, grants, donations and loans from local, state and federal departments and agencies and from the private sector.*

(k) A program for state, county and local governmental implementation of the comprehensive land use plan and the various elements thereof in a manner that will insure the continued, uniform, and consistent protection of the Pine Barrens ecosystem and development objectives.

- *(i) minimum standards for the adoption, as required in this article, of municipal and county plans, codes and ordinances concerning the development and use of land including, but not limited to, standards for minimum lot sizes, site clearance and wetland setbacks, appropriate population and densities and regulated or prohibited uses for specific portions of the Pine Barrens area and procedures for determining hardship consistent with the purposes and provision of this article. (Chapter V.B.)*
- *(ii) guidelines and standards for review of projects of regional significance which because of scale of intensity of use or location are likely to impede implementation of the land use plan; (Chapter V.F.) and*
- *(iii) guideline for consistency with the land use plan by state, county and local agencies (Chapters V.C. and V.F.).*

(l) Professional staffing requirements necessary to carry out the land use plan. (Chapters V.C. and V.F.)

(m) Land protection mechanisms, including but not limited to, acquisition, conservation easements, rights and values transfers, purchase of development rights, donations and clustering, planned unit development, land trusts, exchanges between privately and publicly owned lands, or other zoning activities consistent with the provision of this article. (Chapters V.D. and V.E)

(n) Provision for use of best management practices, in all natural resource-dependent commercial and industrial activities, including agriculture, horticulture and related activities. (Chapter V.C.)

(o) Provisions for restoration of natural and cultural resources where such resources have been damaged, lost or otherwise impaired. Such work shall address restoration of Pine Barrens habitats, stream and shore revitalization, historic structures, traditional industries demonstration programs, and strengthening of community character which will be consistent with the provisions of the comprehensive management plan pursuant to sections 57-0115 of this article. (Chapter V.C.)

(p) *Provisions for cumulative impact analyses, both environmental and economic, for the effects of development, preservation, financial policies and related factors upon the Central Pine Barrens area, its private and public open space, its residents and constituents, school and other special districts, and other pertinent aspects or demographic sectors. (Chapters VI and VII)*

(q) *Recommendations for further legislation at the state, county and local levels as may be necessary to fully implement the provision of this article. (Chapter V.C.)*

(r) *Provisions for management and stewardship of natural and cultural resources which shall include coordination by owners of public lands which will be consistent with the provisions of the comprehensive management plan pursuant to section 57-0115 of this article. (Chapter V.C.)*

(s) *Provisions for appropriate and relevant scientific research relating to the species, ecological communities and processes, natural landscape feature, and surface and groundwater resources of the Central Pine Barrens necessary to ensure and enhance the long-term management of the preserve. Such research may be addressed in cooperative effort with the State University of New York at Stony Brook through its biological research station, established by the Department of Ecology and Evolution.*
(Chapter V.C.)

(t) *Provisions for fire management for controlled, prescribed burning, and responses to unanticipated firs. This shall include coordination among the department and local fire departments. (Chapter V.C.)*

(u) *Description of developments of regional significance. (Chapter V.F.)*

The Plan has been prepared through the cooperative efforts of state and local agencies, working committees, and the Advisory Committee (a committee established by the Act consisting of representatives from environmental, civic and development interests).

Purpose and Need for the Draft Generic Environmental Impact Statement

The action for review in this DGEIS has been defined as the Central Pine Barrens Land Use Plan. The Central Pine Barrens Act pursuant to Section 57-0121(7) designated the Central Pine Barrens Commission as lead agency for this generic environmental impact statement. The law further states that the DGEIS is part of the land use plan. Therefore, it appears as a chapter within the Plan. This chapter and the chapters of the Plan constitute the DGEIS on the Plan. This DGEIS is designed to provide an evaluation of the positive and negative cumulative impacts that may occur on the overall pine barren ecosystems and ground water resources located within the Central Pine Barrens area through its evaluation of the Plan's components.

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A generic EIS is more general than a site-specific EIS, and typically is used to consider broad-based actions or related groups of actions that agencies are likely to approve, fund, or directly undertake. The broader focus of a generic EIS aids in the identification and analysis of the cumulative effects of a group of actions or a combination of effects from a single action. A generic EIS is useful when there is a need to allow for the

evaluation of impact-related actions being proposed by unrelated project sponsors, to set forth conditions, criteria or thresholds under which future site-specific actions may be undertaken, and to limit the extent of future project reviews by providing early guidance on significance of determinations. The generic EIS is often used in examining the environmental effects of: a number of separate actions in a geographic area such as several petitions to rezone residential areas to commercial; a sequence of actions by an agency or project sponsor such as a zoning change, followed by a road improvement, followed by the construction of a shopping mall. Alternatively, as in this DGEIS, it may be used to evaluate programs or plans that have wide application or restrict the range of future alternative policies such as agency regulations or permit programs, master plans or resource management plans. The same basic SEQR procedures, notices and filing requirements apply to generic EISs as apply to other types of EISs.

Plan and DGEIS Study Area Boundaries

The boundaries of the Plan and DGEIS study area are statutorily defined in ECL 57-0107(10) for the Central Pine Barrens and in ECL 57-0107(11) for the core preservation area, and ECL 57-0107(12) for the compatible growth area.

Required Approvals

As required under ECL 57-0121(12) of the Central Pine Barrens Act, following consultation with the Advisory Committee and the Commission is required to publish the draft land use plan. This twelve month period ends on July 14, 1994. Within three months of publication, the Commission is required to hold public informational meetings in the Towns of Brookhaven, Riverhead and Southampton and to hold at least one public hearing within the Central Pine Barrens area. During this time period, the Commission is to receive and review comments on the draft land use plan and generic environmental impact statement from state and local governments and the public. Within the next three month period, the Commission is required to complete and recommend for ratification a revised comprehensive land use plan and final generic impact statement, to the respective town boards for their ratification and adoption of the statement of findings pursuant to Article eight of the ECL. Upon ratification and adoption by the three towns, the Commission itself will formally adopt the plan and generic environmental impact statement, and its provisions will then be in full force. The adoption of the Plan and DGEIS must be by unanimous approval of the Commission members.

Distribution List

Suffolk County Executive Robert Gaffney
Governor's Office-Governor Mario Cuomo
Mr. Ulrich Haynes-State Representative,
Central Pine Barrens Joint Policy and Planning Commission
NYSDEC Regional Office - Ray Cowen, Director
NYSDEC Albany Office - Langdon Marsh, Acting Commissioner
Supervisor John LaMura, Town of Brookhaven
Supervisor Fred Thiele, Town of Southampton
Supervisor Joseph Janoski, Town of Riverhead
Mayor Thelma Georgeson, Village of Quogue
Mayor Arma Andon, Village of Westhampton Beach
Town Council Members (Brookhaven, Riverhead and Southampton)
Other Village Mayors Within Brookhaven, Riverhead and Southampton)
Central Pine Barrens Advisory Committee Members
School Districts (Brookhaven, Riverhead and Southampton)
Fire Districts (Brookhaven, Riverhead and Southampton)
Suffolk County Health Services

Suffolk County Dept. of Public Works
Suffolk County Dept. of Fire, Rescue, & Emergency Services
Suffolk County Dept. of Parks
Suffolk County Dept. of Economic Development
Suffolk County Attorney's Office - Div. of Real Estate
Suffolk County Pine Barrens Review Commission
Long Island State Parks Commission
Assemblyman Thomas DiNappoli
Senator James Lack
Senator Kenneth LaValle
Senator Ralph Marino
Senator Owen Johnson
Suffolk County Legislature
Hampton Bays Water District
Riverside Water District
Suffolk County Water Authority
Suffolk County Planning Commission

B. Environmental Setting

This section presents an overview of the environmental conditions for the Central Pine Barrens area (ie: core preservation area, compatible growth area, and receiving areas within the compatible growth area) and for the receiving areas located outside of the Central Pine Barrens area.

Central Pine Barrens Area

This section provides an overview of the existing environmental conditions in the Central Pine Barrens area that are described in detail in Chapter IV of the Plan that is entitled: **THE CENTRAL PINE BARRENS TODAY - An Inventory and Analysis of Existing Conditions.** The description of existing conditions includes information on natural resources (ie: geology, soils, hydrology, and pine barrens ecosystems), cultural resources, and physical data (ie: population, land use, zoning, public and administrative boundaries and infrastructure) for an area. The information on environmental conditions in Chapter IV of the Plan includes specific information for the core and compatible growth area, where warranted, to identify environmental conditions that are unique to these areas. The description of existing conditions provided in Chapter IV of the Plan also pertains to the receiving areas that have been designated within the compatible growth area. Information on the selection of these receiving areas and their relationship to the overall Pine Barrens Credit Program is contained in Chapter V.D. of the Plan. A discussion on *Air Resources* is included in this **Environmental Setting** that does not appear in the Plan.

Geologic Overview

A description of the surficial and subsurface geology of Suffolk County that also pertains to the Central Pine Barrens area is provided in Chapter IV.A. of the Plan that is entitled: **THE CENTRAL PINE BARRENS TODAY-** ***Geologic Overview*** . The information for this section of the Plan was obtained from the Suffolk County Comprehensive Water Resources Management Plan, prepared by Suffolk County Health Services for Dvirka and Bartilucci, Consulting Engineers and Malcolm Pirnie, Inc., January 1987. In that chapter . of the Plan is a description of the different geologic time periods and events that shaped Suffolk County's geology form bedrock to land surface. It includes a description of the sequence of stratigraphic formations that underlie Suffolk County and includes a description of the hydrogeologic units that correspond to these formations. Several geologic cross sections through the Central Pine Barrens are included in that chapter in addition to figures that illustrate the areal extent and thickness of the specified hydrogeologic units.

Topography

The topography of the Central Pine Barrens area is generally described in Chapter IV.A. of the Plan that is entitled: **THE CENTRAL PINE BARRENS TODAY - *Topography*** . That chapter of the Plan includes a description of the range of elevations, slopes and land forms and their relationship to common glacial features such as moraines, outwash plains and recent geologic deposits. Generally the elevations within the Central Pine barrens area range from 0 ft. at mean sea level where the study area borders Flanders Bay, to a high of 295 ft. at Bald Hill which is on the Ronkonkoma Moraine just northeast of the Eastern Campus of Suffolk Community College in Riverhead. Elevations are typically lowest in the areas where recent geologic deposits are found and highest in the moraine areas. Slopes within the Central Pine Barrens area are generally even to gently rolling and range from 0 to 15 % on outwash plains and recent geologic deposits whereas, moraine areas that are typically very hilly and uneven, contain slopes that range from 15 to 35% in many areas.

That chapter of the Plan includes a discussion of unusual land forms such as kettle holes, kames, and swale areas that can be found in or adjacent to moraine areas in the Central Pine Barrens and identifies areas within the Central Pine Barrens area that contain examples of these land forms.

Soils

A description of the general soil associations located within the Central Pine Barrens area is provided in Chapter IV.A. of the Plan that is entitled: **THE CENTRAL PINE BARRENS TODAY- *Soils Overview*)**. The information for that chapter of the Plan was based on the Suffolk County Soil Survey prepared in 1975 by the United States Department of Agriculture Soil Conservation Service in cooperation with the Cornell Agricultural Experiment Station. Information on each soil association includes percent composition of the major and minor soil types that comprise each soil association for Suffolk County. The four general soil associations located within the Central Pine Barrens area are identified below along with their approximate percentage composition within the Central Pine Barrens area:

Haven-Riverhead Association - comprise approximately 25 percent of the Central Pine Barrens area

Plymouth-Carver Association, Rolling and Hilly - comprise approximately 50 percent of the Central Pine Barrens area

Riverhead-Plymouth-Carver Association - comprise approximately 10 percent of the Central Pine Barrens area

Plymouth-Carver Association - Nearly Level and Undulating - comprise approximately 15 percent of the Central Pine Barrens area

For each soil type, a description of its physical characteristics (ie: slope, texture, drainage, depth to substratum) is provided in addition to general vegetation that is usually associated with a particular soil type. Soils information in that chapter includes suitability or limitations for agricultural and other land uses as they relate to town and county planning (ie: septic systems, parks, roads).

The soil section in that chapter of the Plan includes a discussion of soils associated with environmentally significant resources. These soils within the Central Pine Barrens area are identified as prime agricultural soils on already cleared lands and soils with high water tables that are associated with environmentally sensitive wetland and tidal marshes.

Water Resources

A description of the ground water and surface water resources located within the Central Pine Barrens area is provided in Chapter IV. of the Plan that is entitled: **THE CENTRAL PINE BARRENS TODAY-*Hydrogeologic Overview*** . The information in that chapter of the Plan is based on numerous plans and studies prepared by the United States Geologic Survey, Brookhaven National Laboratory, Suffolk County Health Services monitoring data and recent work by the State University at Stony Brook and the Suffolk County Health Services on the Peconic River and estuary system.

The information provided in that chapter or the Plan includes a description of the hydrogeologic formations within the Central Pine Barrens area in addition to information on groundwater and surface water hydrology, water quality and water pumpage for this area. The discussion on hydrology within that chapter of the Plan describes the two uppermost aquifers as well as their confining layers. The Upper Glacial Aquifer contains glacial deposits that are approximately 200 feet thick, but are sometimes thicker on moraines and in areas where the Magothy Aquifer was eroded. The depth to the water table is over 150 feet along the moraine and decreases toward the shoreline. This aquifer has a high permeability and moderate thickness, but there are some surficial silt and clay deposits as well as some local and possible subregional clay units which where present can impede ground water flow or can create perched surface water systems. The Gardiners Clay Unit is directly below the Upper Glacial Aquifer, separating it from the Magothy Aquifer. It is approximately 10 to 20 feet thick, but is not considered to be a significant hydraulic barrier to the recharge of the Magothy Aquifer from the Upper Glacial Aquifer within the Central Pine Barrens area. The Magothy Aquifer is approximately 800 to 900 feet thick and has lower hydraulic conductivities than the overlying glacial deposits.

The vertical flow rate in the Upper Glacial Aquifer is approximately 6 ft/yr near the ground water divide and its horizontal flow velocity is about 0.5 ft/day near the ground water divide. The flow rates in the Magothy Aquifer are only about 0.1 to 0.2 ft/day. The flow rates for different areas of the Central Pine Barrens(CPB) area are included in the chapter of the Plan on water resources.

The recharge of the Upper Glacial Aquifer is between 22 and 26 inches/yr. The recharge of the Magothy Aquifer from the Upper Glacial Aquifer is greatest near the main groundwater divide and gradually decreases seaward until it is negligable at the deep recharge zone boundaries as described in the chapter of the Plan on water resources.

The total pumpage in 1992 in the CPB was approximately 14.5 mgd which is equivalent to about 8% of the annual recharge. Most of this water was pumped from the Upper Glacial Aquifer and the greater percentage of it was returned to the aquifer system in the general area from which it was pumped. The chapter of the Plan on water resources lists several of the main consumers of this water and the quantities that they have consumed.

That chapter of the Plan also describes the streamflow and pond and wetland hydrology as well. Approximately 25% of the precipitation recharged within the CPB area leaves the ground water system through streamflow, mainly through the Peconic and Carmans Rivers. There has not been a systematic inventory of the CPB wetlands and their relation to groundwater, but the chapter describes their physical characteristics as well as how they were created.

A description of the known quality of water throughout various stages of the hydrologic cycle within the CPB, beginning with input from rainfall, followed by movement through surface wetlands and groundwater, and concluding with output as streamflow and underflow is also provided in the chapter of the Plan on water resources. The precipitation on Long Island is naturally acidic, but is made more so by pollution. Although the ground water in the undeveloped areas of the Pine Barrens are naturally acidic and very low in plant

nutrients, they cannot truly be called pristine, due to the low levels of contamination now introduced by rainwater. Also, from the existing developed areas, there have been some spills into the ground water found consisting of radioactive materials, petroleum products, solvents, etc. There is also some contamination in residential areas from sanitary sewage and lawn chemicals. The chapter on water resources mentions the sources as well as the locations of these contaminants. The Peconic and Carmans Rivers which are within the CPB, contain low concentrations of nitrates and phosphorus. The chemical concentrations of the ponds and wetlands in the CPB have not been comprehensively documented yet, but evidence indicates that they are highly acidic and nutrient deficient in the undisturbed state, much like the ponds and wetlands in the New Jersey Pinelands. The sources, quantities, and significance of human inputs into ponds and wetlands are now being investigated, including atmospheric pollution and stormwater runoff that may contain road salts, fertilizers, and pesticides as listed in that chapter of the Plan.

A number of conclusions were listed in chapter of the Plan on water resources, such as the limited degradation of shallow ground water quality has occurred and that there are elevated nitrogen concentrations in the Peconic and Carmans Rivers as well as in the stormwater runoff. However, the Magothy Aquifer is still excellent in relation to drinking water standards. The impacts of these pollutants can be expected to increase as additional areas are developed, unless densities and activities that degrade groundwater and generate contaminated stormwater are controlled. Some of the recommended actions listed in that chapter are to reduce the amounts of nutrients, sediments, and pollutants entering surface waters, minimizing impacts of development on the Peconic River, reducing existing and future impacts on surface and groundwater quality within the CPB area, requiring new or expanded sewage treatment plants to use the Best Available Technology (BAT) for nitrogen removal, studying CPB wetlands and their requirements, studying deep flow through the aquifer system, as well as many more recommendations.

Wetlands

Information on wetland communities is provided in Chapter IV. of the Plan that is entitled: **THE CENTRAL PINE BARRENS TODAY - *Pine Barrens Ecosystems.*** That chapter of the Plan states there are over 4300 acres of NYSDEC regulated freshwater wetlands found in the Central Pine Barrens. The majority of these wetlands are found near two principal river systems. The Peconic River (approximately 2000 acres of wetlands) and the Carmans River (approximately 1000 acres of wetlands). There are 162 other wetlands in the Central Pine Barrens which comprise the remaining acreage.

The locations of wetland areas within the Central Pine Barrens area are identified from an Ecological Communities Map provided in the chapter of the Plan on pine barren ecosystems. There are many wetlands present on both sides of the Peconic River located within the Towns of Brookhaven and Riverhead. These wetlands are also found along the Peconic River's headwaters and its many tributaries. The tributaries are mainly located within the part of the Central Pine Barrens that lies north of the Peconic River in the Town of Riverhead with smaller tributaries south of the river located in the Town of Brookhaven as well. There are many wetlands surrounding Deep Pond, Tarkill Pond, Grassy Pond, Round Pond, Twin Ponds, Jones Pond, and Zeeks Pond, that are along a northern tributary to the Peconic River. There are also other large tributaries to the north of the Peconic River that include North Pond, Prestons Pond, Linus Pond, Fox Pond, etc. There are many small kettles scattered north and south of this river which contain wetlands instead of standing water.

There are many wetland areas in the Central Pine Barrens in the Town of Brookhaven that are located along the Carmans River as shown on the Ecological Communities Map in that chapter of the Plan. There are also some wetlands just south of Middle Country Road (Rt. 25) and to the east of Rt. 25 near Coram Airpark and north of Rt. 25 near Whiskey Road in Brookhaven. Wetlands surround Spring Lake as well, which is located

to the west of the Carmans River. There are also several wetlands east of Carmans River, which are located to the east of Middle Island Rd., north of the Long Island Expressway, and west of William Floyd Parkway.

In Southampton, there are many wetlands surrounding the various creeks along the Flanders Bay and the Great Peconic Bay south of Rt. 24 such as Goose, Birch, Mill, and Hubbard Creek. Also there are more wetlands surrounding Penny Pond which is to the east of Hubbard Creek. Further west in Southampton, there are wetlands surrounding Wildwood Lake which is south of Riverhead Road, and east of Speonk Riverhead Rd. Also there are some wetlands surrounding small creeks scattered south of Rt. 27 in Southampton.

The chapter of the Plan on pine barren ecology describes several different types of wetland communities present in the Central Pine Barrens. Each wetland community is described in terms of the wildlife species present, location, water quality and hydrological characteristics and vegetation.

According to this chapter of the Plan, the most common type of wetland is the hardwood swamp which is dominated by red maple (Acer rubrum). This type of swamp is found where soils are saturated or inundated for brief periods during the growing season and can be found in the Central Pine Barrens as a border between uplands and other wetland types.

There are also coastal plain pond and pond shore types of wetlands which usually exist where the water levels fluctuate greatly. Many of the ponds in the Peconic River headwaters are interconnected by surface water flow between these coastal plain ponds. The types of coastal plain ponds can be characterized by five distinct vegetation zones that have been described in that chapter of the Plan. The vegetation of coastal plain pond shores needs periods of both high and low water for maintaining its structure, composition, and diversity.

The chapter of the Plan on pine barren ecosystems describes the Pine Barrens shrub swamps as wetlands that often occur at the margins of coastal plain ponds, as a transition zone between the pond shore and the surrounding Pine Barrens forest. They occur in wet depressions with little or no standing water. That chapter also describes the wildlife species found in this area.

The coastal plain Atlantic white cedar swamp contains organic soils along streams in poorly drained depressions. Atlantic white cedar (Chamaecyparis thyoides) comprise over 50% of the canopy cover and red maple may be a codominant tree. The largest remaining cedar swamp on Long Island is in Cranberry Bog County Park in Southampton between the Peconic River and Riverhead Moriches Road. That chapter also describes the wildlife and growth conditions of the white cedar trees in this swamp.

Included in that chapter of the Plan is a description of the many types of wildlife species which live in the red maple hardwood swamps as well as types of vegetation. The red maple hardwood swamps occur in poorly drained depressions, usually on organic soils. Red maple and black gum (Nyssa silvatica) are the dominant trees. The shrubs in this swamp may be quite dense.

In the wet Pine Barrens, the pitch pine (Pinus rigida), red maple, and black gum are found. They make up a transition between the upland Pine Barrens and wetland communities such as red maple swamps and shrub swamps.

According to that chapter of the Plan, the Pine Barrens vernal pond is not recognized by the Heritage Program as a distinct community type in the Long Island Pine Barrens. It has seasonally fluctuating, ground water fed ponds dominated by grasses and herbs. These wetlands are often small having a tree canopy, and carpeted with leaf litter.

According to that chapter in the Plan, for the wetland community described as the coastal plain poor fen, sphagnum moss dominates the peatlands, with scattered sedges, shrubs, and stunted trees. The largest fen on Long Island is located at Cranberry Bog County Park which is dominated by sedges. There are coastal plains streams found along the Peconic and Carmans Rivers. That chapter in the Plan also describes the submerged vegetation and various fish found in this habitat.

The salt marsh occurs on Hubbard Creek Marsh on Peconic Bay in Flanders. A low salt marsh extends from mean high tide down to mean sea level and is regularly flooded by semidiurnal tides. A high salt marsh occurs from mean high tide up to the limit of spring tides and is periodically flooded by spring tides and flood tides. That chapter of the Plan also describes the grasses, birds, and terrapins found in this type of wetland community.

The salt panne is a poorly drained, shallow depression in both low and high salt marshes. The soil-water salinities fluctuate in response to tidal flooding and rainfall. That chapter also describes the types of plants and fish found in the salt panne.

Flood Prone Areas

The locations of flood prone areas in the Central Pine Barrens were identified by examining United States Geologic Survey maps for this area. Not very many flood prone areas exist in this area. Those present are located within the same areas identified as wetlands in the Wetland Communities chapter of the Pine Barrens Plan. Flood areas are generally found near ponds, creeks, rivers, and wetlands. Flood prone areas have been identified along: the Peconic River and its tributaries, Sawmill Creek and Terry Creek located in Riverhead, which empties into the Flanders Bay. Other areas prone to flooding are located along various creeks in Southampton north of Rt. 24 such as Birch, Goose, Hubbards, and Mill Creeks. Areas along the Carmans River and its tributaries in Brookhaven are also flood prone. However, the area surrounding Deep Pond in Riverhead is not a flood prone area according to the U.S.G.S. map.

Air Resources and Noise

Climate

The climate in Suffolk County is mild due to its coastal location. Climatic conditions vary throughout Suffolk County with changes in topography and distance from the coasts. The average temperature in Suffolk County is 71.9 degrees F in the summer and 32.4 degrees F in the winter (NOAA, 1991). The warmest month is July and the coldest is January (Halpin, 1988).

The long term precipitation average over approximately the last 50 years is 44.5 inches/year and the average annual humidity is 70%. The snowfall in Suffolk County generally occurs between the months of November through April, with the greatest amount falling between the months of January and March. The average snowfall for Suffolk County is 29.7 inches/year (Halpin, 1988).

The growing season in Suffolk is long with 200 to 210 frost free days. The average annual wind velocity in Suffolk is 7 to 9 miles/hour . There are approximately 106 clear, 133 partly cloudy, and 125 cloudy days/year in Suffolk County (Halpin, 1988).

The Suffolk County Department of Health Services Office of Water Resources monitors precipitation, temperature, and wind speed at Belmont Lake, Medford, and Riverhead. Raw data is collected weekly, but precipitation data is the only information analyzed on a regular basis (Halpin, 1988).

Air Quality

The Clean Air Act gave the Environmental Protection Agency the authority to set national ambient air quality standards for protecting public health and the environment from pollutants in ambient air. The state governments manage most of the specific programs for achieving these standards by developing State Implementation Plans (SIPs). Seven air pollutants have been designated by the U.S. EPA that are considered a nationwide concern that are monitored through the Ambient Air Monitoring System administered by the New York State Department of Environmental Conservation (DEC). These seven air pollutants are sulfur dioxide, carbon monoxide, ozone, inhalable particulates (PM-10), nitrogen dioxide, total suspended particles, and lead. In addition, New York State also has secondary air standards for Beryllium, Fluorides, Hydrogen sulfide and settleable particles (Halpin, 1988).

Suffolk County is in Region 1 of the nine Air Quality Control Regions (AQCR) in New York State. This region can be classified into three different categories: attainment, unclassified or non-attainment depending on available air quality data and ambient concentrations of pollutants. The attainment category exists when the ambient concentration of a pollutant is below the National Ambient Air Quality Standards (NAAQS). An unclassified category occurs when there is insufficient data to make a determination. The non-attainment category occurs when the concentration of a pollutant is above the National Ambient Air Quality Standards (Halpin, 1988).

Region 1 is in compliance with ambient air standards for all of the previously stated air pollutants with the exception of ozone. Ozone is an odorless, colorless gas that is a major component of photochemical smog. It is formed by the photochemical reaction between nitrogen oxides and reactive hydrocarbons when exposed to ultraviolet light and high temperatures. Region 1 has exceeded the ozone standard several times in the past and consequently the region is in the non-attainment category for ozone. However, ozone is a state-wide problem that is not specific to Suffolk County or Region 1 (Halpin, 1988).

The concentrations of most of these air contaminants appear to have declined in Suffolk County over the last 10 years. The New York State DEC has stated that this was most likely due to the implementation of pollution control devices on vehicles, the use of unleaded and low sulfur fuels, and implementation of controls on stationary sources (Halpin, 1988).

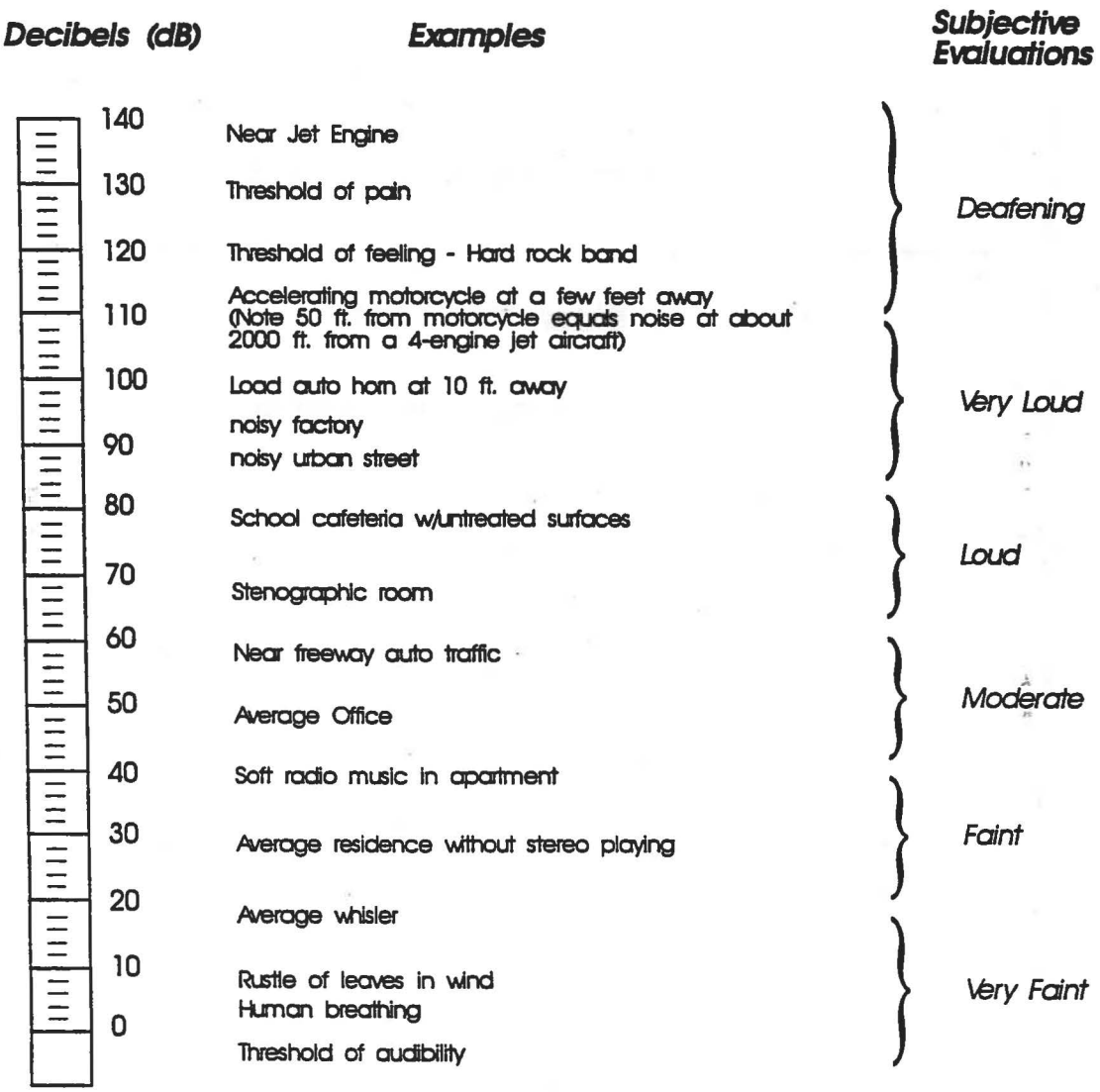
Noise

The physical intensity of noise can be measured in decibels, but in terms of the general public, it is a relative term that depends on the perception of the individuals involved. Suffolk County in general is still a relatively suburban and rural area. Noise related problems are sporadic and not considered at this time to be severe. Recent analysis of noise complaints in Suffolk County shows that there are approximately fifteen throughout the county (Cohalan, 1982). The following is a summary of various types of noise sources that are commonly heard in suburban and rural communities that would also pertain to Suffolk County and also the Central Pine Barrens area.

Sources of Noise

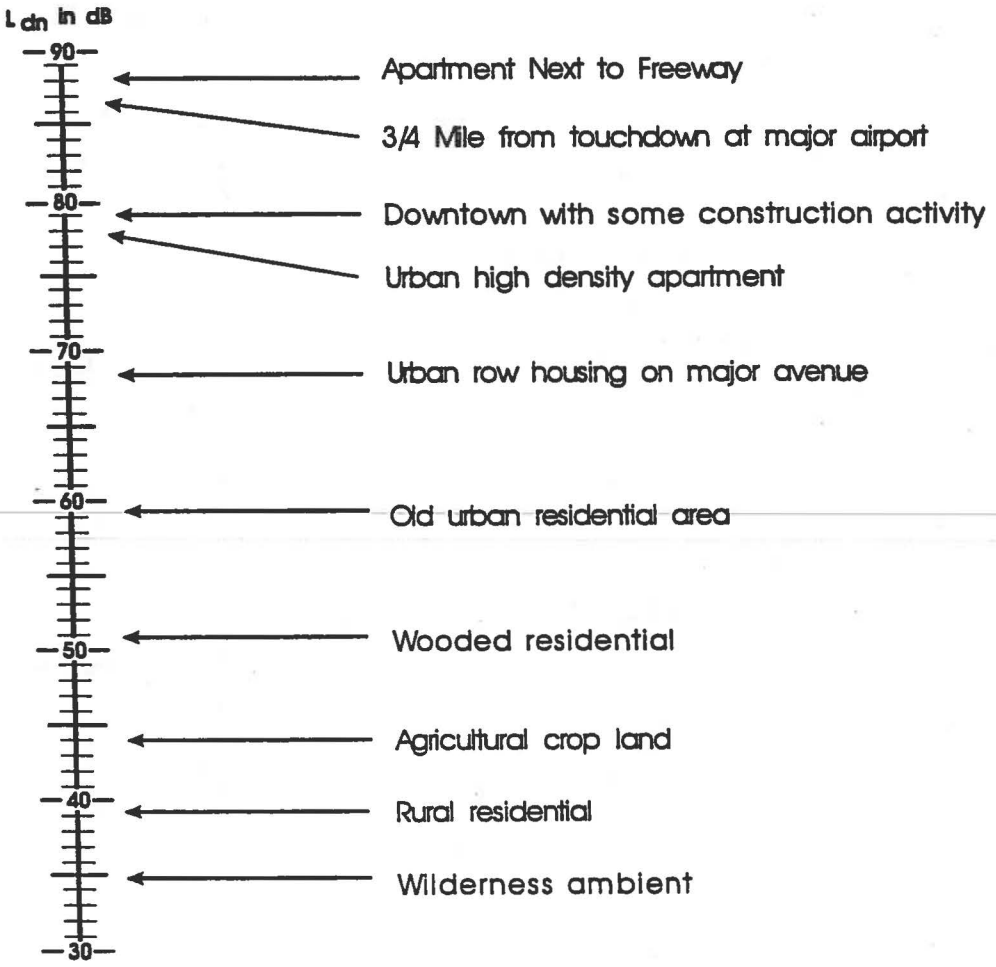
Barking Dogs	Airports
Motor Vehicles	Entertainment Establishments
House Parties	Off-Road Motor Vehicles
Fireworks	Refuse Trucks
Fire Sirens	Residential Power Tools
Gun/Rifle Firing Ranges	Refuse Trucks
Automobile Racetracks	Agricultural Equipment
Street Music	Construction

Figure 7.1 Noise Levels of Common Sounds



Source: Egan M. David Concepts in Architectural Acoustics McGraw-Hill Book Co. New York, 1972

Figure 7.2 Noise Levels of Common Land Uses



Source: Egan M. David Concepts in Architectural Acoustics. McGraw-Hill Book Co. New York 1972

The sound levels associated with these noise sources are measured in decibels (dBA). Figure A presents sound levels for some of the noise sources previously identified. Sound levels for land use activities commonly found within Suffolk County, that also pertain to the Central Pine Barrens area (ie: wooded agricultural, agricultural cropland rural residential) are provided in Figure B.

Terrestrial and Aquatic Ecology

A description of the terrestrial and aquatic ecology within the Central Pine Barrens area is provided in Chapter IV. of the Plan that is entitled: **THE CENTRAL PINE BARRENS TODAY - *Pine Barren Ecosystems*.** That chapter in the Plan provides an overview of the Pine Barren's ecosystems and includes a description of vegetative communities, critical resource areas, wildlife and insects within the Central Pine Barrens area, including rare and endangered species. Critical resource areas identified in that chapter include the core preservation area in its entirety and areas identified within the compatible growth area. A discussion of biogeographic theory and ecological principals of conservation reserve design are provided in that chapter of the Plan to explain the theory and concepts behind the minimum habitat area that needs to be maintained in order to ensure the diversity of wildlife supported by such habitats and in order for these habitats to be perpetuated over time.

Essentially the Central Pine Barrens area is represented by a complex mosaic of pitch pine woodlands, pine oak forests, oak dominated hardwood forests, coastal plain ponds, swamps, marshes, bogs and streams. The Pine Barrens Communities have evolved as a result of frequent fires and other key environmental factors such as: soil saturation, soil texture and nutrients, and human disturbance(ie: clearing, logging) that control the vegetative types present in the pine barrens. In some areas, the combination of draughty, nutrient-poor soils and frequent fires have created a harsh environment to which relatively few species have been able to adapt. Biota in these areas therefore, tend to be unusual and includes many rare species especially adapted to the conditions of the xeric pine barrens. This is also true of wildlife found within the xeric pine barrens area. Oak dominated hardwood forests exist in other areas where the soils are more feritile and the conditions are moister. Oak forests can be found north of the Ronkonkoma moraine. A classic example is Warbler woods in Middle Island. Over time, since the pine foresets are an early stage of succession, they will revert to oak dominated hardwood forests, if burning or clearing does not take place.

Ecological communities have been identified in that of the Plan on pine barrens ecology that are classified according to Reschke, 1990 (N.Y. Natural Heritage Program and New York State Department of Environmental Conservation). Rare communities and species are referred to as elements by the New York Heritage Program and are ranked according to their rarity both globally (worldwide) and in New York State. The following natural pine barren communities are identified in descending order in terms of their state rarity (see that chapter of the Plan for a more detailed description and identification of these rankings):

Dwarf Pine Plains
Coastal Plain Atlantic White Cedar Swamp
Coastal Plain Stream
Coastal Plain Poor Fen
Coastal Plain Pond
Coastal Plain Pondshore
Pitch Pine-Oak-Heath Woodland
Salt Panne
Pine Barrens Shrub Swamp
High Salt Marsh
Low Salt Marsh

Chestnut Oak Forest
Pitch Pine-Oak Forest
Red Maple-Hardwood Swamp
Oak Dominated Hardwood Forest

Two other communities, Pine Barrens vernal pools and wet Pine Barrens, that are not recognized by the aforementioned program were included in the discussion of natural communities that contain rare elements. In addition, that chapter of the Plan includes a discussion of human created communities(ie: successional old field, cropland/row crops, mowed lawn) that contain rare elements.

The number of occurrences and general distribution of rare communities and species are identified in the chapter of the Plan on pine barrens ecosystems. A total of 52 occurrences of rare natural communities that have been identified within the Central Pine Barrens area as recorded by the Natural Heritage Program; almost all of these are within the core area.

Plants: 205 occurrences of 54 rare plant species (SI-S3) in Core Area
35 occurrences of 18 rare plant species in the Compatible Growth Area

The greatest concentrations of rare plants occur in wetland habitats - Coastal Plain Ponds and Pondshores.

Wildlife: 118 (76 are vertebrate species) recent occurrences of rare wildlife (S1-S3) in the Central Pine Barrens Area
93 of the 118 recent occurrences of rare wildlife (S1-S3) in Core Area
25 of the 118 recent occurrences of rare wildlife (S1-S3) in Compatible Growth Area

Most of the rare invertebrate species occur only in pine barren habitats, and are absent or uncommon elsewhere on Long Island.

The Central Pine Barrens Act requires under Environmental Conservation Law 57-0121(6)(e) that critical resource areas within the Central Pine Barrens area which are of regional or statewide significance be identified and mapped. It further defines critical resource areas to include: fragile lands, significant shorelands of rivers, lakes, and streams, freshwater wetlands, significant wildlife habitats, unique scenic or historic features, and rare or valuable ecosystems and geological formations which are of regional or statewide significance.

All potentially developable lands in the compatible growth area were reviewed by the Ecology Committee to identify critical resource areas by using criteria based on: size of area,(>25 acres) proximity to the core preserve, rare elements, fragmentation and linkage corridors, surrounding land use, hydrology and water quality, soil type, slopes and depth to groundwater. A total of 32 critical resource areas were identified and evaluated using this criteria. Each area identified was then recommended as either a sending area or develop according to existing zoning but development should be clustered in such a way to protect the critical resource. The purpose of these recommendations is to protect and preserve ecologically sensitive resources in the compatible growth area, maintain the effectiveness of the compatible growth area as a buffer for the core preserve while still accommodating development and minimize fragmentation of existing contiguous tract of natural pine barrens vegetation. The critical resource areas within the compatible growth area are shown on a map in the chapter of the Plan entitled: **THE CENTRAL PINE BARRENS TODAY - *Pine Barrens Ecosystems*.**

The following criteria were used to identify areas deserving special attention in the core preservation area due to the presence of significant resources and their susceptibility to damage from human activity:

Rare natural communities (S1-S3)
High concentrations of rare plant or animal species (S1-S3)
Concentrations of wetlands (high water table)
Headwaters of streams
Potential groundwater contribution zones to wetlands and streams
Diversity of vegetative types
Breeding areas (nesting and spawning)
Areas of scientific research and interest

The core preservation area in its entirety is considered a critical resource area, however the Plan goes further in identifying ecological areas within the core that are of special value based on criteria specified above. These special ecological resource areas include:

Peconic River; Carmens River
Peconic River Headwaters-Calverton Ponds
Cedar Swamp and Sweezy Pond
Dwarf Pine Barrens
Flanders Watershed
Bellows Pond Assemblage
Tarkill Pond Complex/Lake Panamoka

Land Use and Zoning
A description of the land use and zoning within the Central Pine Barrens area is provided in Chapter IV. of the Plan that is entitled: **THE CENTRAL PINE BARRENS TODAY - *Population and Land Use.*** That chapter of the Plan presents land use and zoning information in terms of number of acres and percent total of the Central Pine Barrens area. Information is provided specific to the land use and zoning categories located within the core preservation area and compatible growth area. Included in that chapter of the Plan is an analysis of vacant land in terms of acreage and zoning and the potential dwelling unit yield of this vacant land based on existing zoning.

As stated in that chapter of the Plan, the major land uses within the Central Pine Barrens are vacant land (33,617 acres or 43.6%), recreation and open space (16,137 or 20.9%), residential uses (10,480 or 13.6%), institutional (6,691 or 8.7%) and agricultural (4,518 or 5.9%). Vacant land is identified in that chapter as the predominant land use category for parcels lying entirely within the core or compatible growth areas. Parcels lying strictly within the core preservation area are comprised by 44.9% vacant land and for the compatible growth area, vacant land comprises 43 % of the acreage. Recreation and open space is the second most dominant land use category (12,203 or 37%) whereas in the compatible growth area this category is only 9.1% of all acres. The second most predominant use in the compatible growth area is residential (27.3%). Approximately 10,950 acres of land fall both in the core and compatible growth area. Institutional use is attributable for 31.8% of this land (includes Brookhaven National Laboratory).

The analysis of vacant land provided in that chapter of the Plan indicates that 26,892 acres are vacant in the Central Pine Barrens. There are 46 zoning categories among the three towns (Brookhaven, Riverhead and Southampton). This privately owned vacant land is zoned primarily 77% residential and 18.7 % industrial. The majority of industrially zoned vacant land is located in Riverhead (59%) that is defense/institutionally zoned

(Calverton Airport). A full 91.6 % of 10,254 acres of vacant privately owned parcels within the core preservation area is zoned residential with 71% of this land zoned for 5 acre lots.

This analysis of vacant land determined that based on the existing zoning of this privately owned land in the entire Central Pine Barrens area, 10,287 additional housing units may be built on land zoned for residential use. This would represent an increase of 44% over the 1990 figure of 23,180. At saturation, therefore the estimated number of housing units in the Central Pine Barrens is 33,467 units. Using an estimated figure of 2.7 persons per household would result in an additional population of 27,775 for a total population of 84,982 at saturation.

Housing

Contained in that chapter of the Plan is an overview of the type and number of housing units within the three towns (Brookhaven, Southampton and Riverhead) and the core preservation area, compatible growth area and overall Central Pine Barrens area. The chapter includes information on seasonal housing and housing values within the Central Pine Barrens area.

Additional information on housing units was compiled for the Economic Impact Analysis in Chapter VI. of the Plan. Information presented in this chapter includes the number of housing units, mean value of housing units and mean rent for the core preservation area, compatible growth area, and outside of the Central Pine Barrens area for each town, (Brookhaven, Riverhead and Southampton). The preponderance of housing units (88%) in the three towns is outside of both the core and compatible growth area that corresponds with the population and population density information provided under demography. For the three towns, 10% of the total housing units are located within the compatible growth area and 1.7% of the housing units are located within the core preservation area. With the exception of Riverhead, housing values are lower in the compatible growth area than areas outside of the Central Pine Barrens area and for all three towns, the lowest housing values are in the core preservation areas. However, information provided in this chapter of the Plan states that mean housing values in the core area are still considered fairly high, (Brookhaven-$133,000; Riverhead-$167,300; Southampton-$162,300).

The number of housing units built, increased dramatically from 1980-1984 compared to 1985-1990 with the majority of units built in Brookhaven. The number of new housing units built has far outpaced the increase in population during this time. The smallest overall increase in housing units was experienced in Riverhead. The majority of new housing units during both time periods were built in the area outside of the Central Pine Barrens.

In addition, information is provided in this chapter on the number of housing units built in the 1980s within each area (core and compatible growth area) and also by town. This information includes a comparison of the percentage change in housing units built in 1985-1990 with those built in 1980-1984. A discussion is provided on multifamily dwelling units in terms of housing units with more than 1 less than 10 housing units, attached/detached in 1990 and percentage total of housing units with more than 10 units, attached/detached for 1990. The highest percentage of multifamily dwellings that have more than 1 but less than 10 units attached/detached occur in Riverhead (28%) outside of the Central Pine Barrens area and in Brookhaven (27%) within the compatible growth area. Southampton had 26% of these housing units also in the compatible growth area. The largest percentage of multifamily dwelling units with greater that 10 units attached/detached when examining the three towns and areas occur in the compatible growth area (18%) and core area (10%) of Brookhaven.

Land Protection and Management

Land protection and management mechanisms are discussed in Chapters IV.D.(***Acquisition and Other Protection Strategies***) and IV.E (***Field Management***) of the Plan (**THE CENTRAL PINE BARRENS TODAY**) identifies current methods used to protect land. The land protection measures are identified in a table at the end of the chapter that includes a discussion of the strengths and weakness for each method. The chapter includes a summary of the financial resources that are available on the federal, state, county and town level for land acquisition.

The information on existing land management mechanisms are described in Chapter IV.E. of the Plan is based on a survey that was sent out to various public agencies that manage land within the Central Pine Barrens area. The information provided in that chapter identifies by town, state and federal agency: the type of land under management, number of acres and number of staff/departments with land management and enforcement responsibilities. The chapter also identifies land management problems (ie: insufficient staff, improper use of land such as illegal dumping) faced by these agencies.

Project Review Process

Existing regulations and zoning ordinances that protect and control development are provided in Chapter IV. of the Plan that is entitled: **THE CENTRAL PINE BARRENS TODAY - *Legal Mandates and Regulation of Land Development***. That chapter of the Plan describes the role of the Suffolk County Pine Barrens Review Commission in the review of projects within the pine barrens area. This is followed by a brief description of laws on the federal, state, county, town, and village level that currently exist for land use and resource management.

Demographics

Information on population distribution, density and per capita income is provided in Chapter IV. of the Plan that is entitled: **THE CENTRAL PINE BARRENS TODAY - *Population and Land Use***. This information is provided for each town and for the core, compatible growth area and *total Central Pine Barrens area* and is based on the 1990 Census of Population and census tract maps for 1980, 1970, and 1960 prepared by the U.S. Department of Commerce and 1993 population estimates prepared by the Long Island Lighting Company (LILCO) as of January 1, 1993.

Historic population information is presented for the Central Pine Barrens area within each town (Brookhaven, Riverhead and Southampton) from 1960-1990 that demonstrates the dramatic increase in the number of residents in the Central Pine Barrens area that has occurred over the past thirty years. Brookhaven Town contains the largest portion of the population in the Central Pine Barrens -- 49,719 persons or 87% of the total Central Pine Barrens area, followed by Southampton Town that contains 6,185 persons or 11% of the total Central Pine Barrens area and Riverhead with 1,303 persons or 2% of the remaining Central Pine Barrens population. The largest population increases (85%) within the Central Pine Barrens area occurred during 1960-1970 and 1970-1980. The 1990 population total for the Central Pine Barrens area is 57,207 whereby 93% of the population reside in the compatible growth area and 7% reside in the core preservation area. The largest population in the core preservation area reside in parts of eastern Manorville, Calverton (Brookhaven Town portion), Ridge, Riverside, Flanders, and Westhampton. The communities with the largest portion in the compatible growth area are Coram, Ridge, Middle Island and Manorville. The Town of Brookhaven contains the highest population density in the core, compatible growth area and entire Central Pine Barrens area compared to the Towns of Southampton and Riverhead. Population densities are estimated to be fifteen times greater in the overall compatible growth area versus the core preservation area.

Additional population data was compiled for the economic impact analysis presented in Chapter VI. of the Plan. This data was based on the 1990 Census data and 1993 LILCO estimates and is presented for the three towns in terms of the core, compatible growth area and differs from the previously discussed data in that it presents information for *the entire area outside of the core and compatible growth area* that was included to enable economic impacts to be examined townwide. Therefore the population information differs slightly in its presentation within these two chapters of the Plan (Chapters IV.C.1 and VI.). In addition to presenting general descriptive population for these areas, the economic impact analysis chapter (Chapter VI) includes information on population under the age of 18. A significant portion of the population within the three towns is under the age of 18 which is relevant when evaluating public schools for planning purposes. For Riverhead and Southampton, the percentage of persons under the age of 18 is generally higher in the core and compatible growth area compared to the area outside of the Central Pine Barrens.

The economic analysis chapter includes a discussion, based on the 1990 Census, on persons over the age of 65, mobility, per capita income and poverty levels within the three towns and core and compatible growth areas. Generally, Riverhead and Southampton exhibit a higher percentage of persons over 65 than the Town of Brookhaven, however, the reverse is true for the core area. A higher mobility rate was evident in the compatible growth and core areas in the later part of the past decade, indicating more rapid development occurring in these areas. Mobility is defined as the percentage of people living in an area in 1990 who lived in a different home in 1985. Per capita income varied little when examined at the town level, however, greater fluctuation in per capita income is evident when examined at the village level. Poverty levels were higher within the core and compatible growth areas except for Riverhead. This potentially reflects both location and quality of land within these areas, in addition to lack of economic development.

Community Services

Community services include educational facilities, police and fire protection, health care facilities, public recreational facilities, schools and infrastructure (ie: water, sewers, road, electric). Information on the existing services within the Central Pine Barrens area is provided in Chapter IV. of the Plan that is entitled: **THE CENTRAL PINE BARRENS TODAY - *Public Administrative Units*** and Chapter VI. of the Plan entitled: **ECONOMIC IMPACT ANALYSIS.** Schools, fire, water, sewage and agricultural areas are listed by name of district and district number in Chapter IV. Police services are discussed in terms of areas of jurisdiction and precincts within the towns of Brookhaven, Southampton and Riverhead and for the villages of Quogue and Westhampton Beach. Information on school enrollments and rated school capacities is also provided in that chapter for the overall Central Pine Barrens area. Additional information on planned transportation improvements, school district enrollment and capacities, and number of housing units on public sewer or individual septic tank or cesspool was compiled as background information for the **Economic Impact Analysis** presented in Chapter V.I. of the Plan with key components of this background information reiterated below. Open space used for public recreational use (ie: golf courses, parks) is discussed in terms of nature of use and acreage in the core, compatible growth area and overall Central Pine Barrens area in Chapter IV.

Transportation

Information on planned major transportation improvements was obtained from the New York State Transportation Improvement Program for use in the Economic Impact Analysis chapter. Most of the major plans for roads are aimed at improving capacity and reducing congestion on roads already in existence, with little planned for the construction of new roadways. The planned improvements included in the NYS program are:

Long Island (I-495) - exits 30 to 64
Sunrise Highway (NY 27) - between Phyllis Drive and Station Road in Brookhaven
Middle Country Road (NY25) - between County Road 21 and County Road 83

Route 112 (NY112) - between Echo Avenue and William Floyd Parkway

Improvements are planned for the Long Island Railroad in terms of rolling stock, refurbishing stations, tracks and yards. Suffolk County has a private and county-operated bus system. Improvements envisioned do not include expanding capacity or service.

The majority of residents in the Pine Barrens and periphery rely on automobiles for their transportation, according to the chapter in the Plan entitled: **THE CENTRAL PINE BARRENS TODAY - *Physical Data: Population, Land Use, Public Administration Boundaries and Infrastructure.*** Four major thoroughfares provide road access for this area in an east/west direction which are the Long Island Expressway (N.Y.S. Rte. 495), Sunrise Highway (N.Y.S. Rte. 27), North Country Road (N.Y.S. Rte. 25A), and Middle Country Road (N.Y.S. Rte. 25). This chapter also lists several roads which service the Pine Barrens and periphery which are mainly county roads.

That chapter of the Plan describes locations of existing traffic problems, but they are based on theoretical values which are listed in this chapter. Also, frictional factors, the grades of roads, and anticipated degradation in levels of service needed to determine future improvements for all of the various build out scenarios such as building as zoned, total acquisition, T.D.R., and various combinations have not been factored in yet. Therefore, this section needs further study, before any final decisions are made about where road carrying capacity is a factor and what will be impacted if changes occur.

The preliminary data shows areas of existing traffic problems on various roads in the Pine Barrens and receiving areas such as at the intersection of N.Y.S. Rte. 25 and N.Y.S. Rte. 112 which is a problem because there is no capacity for the additional volume that will be generated, even though a minor improvement is scheduled for this intersection. This chapter lists several future possibilities for this area. There are also some problems on Yaphank-Middle Island Rd. (County Road 21) between East Main St. and N.Y.S. Rte. 25 because the V/C ratios show that there is no room for additional capacity. The chapter also lists collector and arterial roads for this area. No data has been collected on the town roads or the L.I.E. service roads for the hamlets of South Manor and Eastport yet. County Road 31 between Sunrise Hwy. (S.R. 27) and Montauk Hwy. (CR 80) is a sole access road to certain areas such as Gabrinski Airport and National Guard housing complex south of Dwarf Pines, which may pose a problem in the future if an unforeseen catastrophe occurs here, if alternative access is not provided for.

The chapter lists several improvements proposed by the County Department of Public Works, such as planning for Rocky Point-Yaphank Road (CR 21) at Mill Road in the receiving area, increasing capacity at the L.I.E./CR 111 intersection, improving N.Y.S. Rte. 25A to Yaphank-Rocky Point Rd. (CR 21) in order to exempt a segment of CR 111 from the Core Preservation Area, exempting the short segment of William Floyd Pkwy. (CR 46) from the northerly boundary of BNL to the vicinity of N.Y.S Rte. 254, increasing highway capacity along Rocky Point-Yaphank Road (CR 21), and finally it is recommended that the segment of CR 21 at Mill Pond be exempted from the CPA.

There are also various charts included in that chapter with data provided by SCDPW and the N.Y.S. Department of Transportation. These charts show certain sections of county and state roads in the Pine Barrens and their mileage, most recent count, year, raw capacity daily 2-way, V/C ratio, at/or exceeding capacity, previous count, year taken, growth rate, and (%/year). Also, peak one way hourly, monthly, and yearly, raw capacity hourly one way, and V/C ratio are listed for the major roads in this area.

Education and School Districts

Data presented in Chapter V.I. of the Plan as background information for the Economic Impact Analysis on student enrollment (preprimary, elementary/high schools for private and public schools) were compiled from the 1990 Census and school capacity information was
obtained from western and eastern Suffolk B.O.C.E.S.. It is generally recommended that enrollment not exceed 90% of the rated capacity and optimal operating capacity is judged to be between 75% and 90% of the rated capacity. Most of the school districts within the Central Pine Barrens area are operating at or above their optimal operating capacity:

Brookhaven: Willliam Floyd - 110.9%
South Manor - 96.9%
Longwood - 93%
Miller Place - 91.1%
Center Moriches - 90.3%
Three Village - 90.1%

Southampton: East Quogue - 98.2%
Eastport - 95.3%
Hampton Bays - 94.3%

There were no school districts that exceeded their optimal operating capacity in the Town of Riverhead.

Average expenditures per pupil are $9,593 in the Town of Brookhaven, $15,000 in the Town of Riverhead and $13,808 in the Town of Southampton. Expenditures per pupil are fairly uniform across school districts in Brookhaven, however, there is significant variability in expenditure per pupil figures when examined for each school district within the Town of Southampton and to a lesser extent in the Town of Riverhead.

Sewage Treatment in the Pine Barrens

Information presented in Chapter V.I. of the Plan for the Economic Impact analysis indicates that of the three towns, Brookhaven has the largest number of housing units (34,928) on public sewers compared to Riverhead (2,575) and Southampton (3,161). The following is a breakdown by town and area of the number of housing units on septic systems or cesspools.

Figure 7.3 Number of Housing Units Using Septic Systems or Cesspools

Town	Core	Compatible Growth Area	Outside of the Central Pine Barrens Area
Brookhaven	1,024	8,555	94,499
Riverhead	135	301	7,651
Southampton	943	1,489	27,774

The chapter in the Plan entitled: **THE CENTRAL PINE BARRENS TODAY** - ***Physical Data: Population, Land Use, Public Administration Boundaries and Infrastructure*** lists comments from the Suffolk County

Department of Public Work concerning the impact of the Pine Barrens legislation on Public Works. One of these comments states that there is a direct relationship between the intensity of land use and the volume of effluent produced. The Pine Barrens legislation will decrease intensive development, so existing districts should not encounter any significant problems.

That chapter describes several sewer districts which may or may not be impacted by this legislation such as only those projects permitted to construct in the Central Pine Barrens area will be incorporated within Sewer District No. 16 (Whispering Pines), because a significant undeveloped portion of this district lies within the CPA. A revision of the alignment of the force main connection from Sewer District No. 8 (Strathmore Ridge) to the Dorade Treatment Plant (future Sewer District No. 16-Whispering Pines Plant) may be necessary. Also Sewer District No. 17 (Ridgehaven) and No. 20 (Leisure Village) should not be impacted by this legislation because they are located within the compatible growth area.

The Suffolk County Department of Public Works (Wright, 1994) has provided a list of sewage treatment plants within or adjacent to the Pine Barrens and their capacities and locations which are shown on the map included in that chapter.

Water Supply

Information on public water supply is contained in Chapter IV. of the Plan that is entitled: **THE CENTRAL PINE BARRENS TODAY** - ***Ground and Surface Water Hydrology*** under the subsection in this chapter on water supply and pumpage. There are seven public water supply wells located within the Central Pine Barrens area that are operated by the Suffolk County Water Authority. The locations of the wellfields listed below are identified in Figure 8 of that chapter of the Plan.

Bailey Road - Middle Island
Bridgewater Drive - Ridge
William Floyd Parkway - Yaphank
Country Club Drive - Moriches
Moriches-Riverhead Road - Riverside
Old Country Road - Westhampton
Spinney Road - East Quogue

Total withdrawals of water from the Central Pine Barrens area in 1992 was 14.5 mgd (million gallons per day) which is equivalent to about 8% of the recharge. Only a small percentage of this pumpage is considered consumptively used, with most of the pumpage actually returned to the aquifer system in the general area from which it was pumped. The largest consumptive use in this area occurs at Brookhaven National Laboratory where on the order of 1 mgd of cooling water is lost to the atmosphere.

Scenic Resources

A description of the extensive scenic resources located within the Central Pine Barrens area is provided in Chapter IV. of the Plan that is entitled: **THE CENTRAL PINE BARRENS TODAY** - ***General Discussion on Scenic Resources***. Scenic resources are defined for the purpose of this Plan as those landscape patterns and features which are visually or aesthetically pleasing and therefore contribute affirmatively to the definition of a distinct community or region within the Central Pine Barrens. Scenic resources include scenic areas, open spaces, rural landscapes, vistas, country roads and other factors that interact to produce a net effect on individuals or communities. Scenic resources are not definable in isolation from other resource categories such

as historic sites and buildings, archaeological sites, surface water bodies, shorelines, etc. and therefore there is some overlap among these other resource categories that also exhibit certain scenic value. The basis for this definition of scenic resources and the method used to identify these resources within the Central Pine Barrens area is supported by studies that were performed to identify visual preferences for the New Jersey Pinelands and the Cape Cod areas.

Not only did the Long Island Pine Barrens Protection Act require scenic resources to be considered during the preparation of the Plan, it also stated that scenic resources of regional or statewide significance be included as one of the bases of defining critical resource areas. In addition, during the interim planning period it included in the interim goals and standards for development promulgated for this time period that scenic resources be considered for development applications which are also found in the chapter of the Plan entitled: **THE PINE BARRENS PLAN** under Standards for Land Use in the Compatible Growth Area.

The inventory of scenic resources in that chapter of the Plan describes the location of each scenic resource and provides a portrait of the human or natural resource elements which comprise the scenes visible there. The twenty-four scenic resources included in the inventory have an areal extent of several acres or larger or for linear features, only features that are one half to one mile or more in length. It is noted in that chapter of the Plan, this listing precludes the listing of individual historic buildings, bridges, small creeks, short trail or road segments, etc. despite their "scenic" qualities. That chapter of the Plan provides an overview of the protection and management needs for scenic resources.

Economics

An economic analysis that defines the existing conditions of the Central Pine Barrens and the surrounding area for the three towns (Brookhaven, Southampton and Riverhead) has been prepared by the W. Averell Harriman School at the State University of New York at Stony Brook and appears as Chapter V.I. of the Plan. Key components of this chapter are reiterated here in the **Environmental Setting** section under the appropriate subtopic (ie: demographics, land use and planning) where appropriate to facilitate information access for later evaluation of impacts.

Receiving Areas

This section describes the environmental setting for the receiving areas that have been designated by the three towns (Brookhaven, Southampton and Riverhead). It presents in tabular form for these receiving areas the following information: site identification number assigned to the receiving area, street location and access, acreage, existing land use onsite, existing land use surrounding the site, water district, sewer district, proposed for open space acquisition, hazardous waste site present, floodplains present, if designated as a NYS Wild, Scenic and Recreational Corridor, NYS freshwater and tidal wetlands present, soils and slopes, depth to groundwater if less than 4 feet, and the presence of rare elements on site.

The discussion provided for geologic and air resources under the environmental setting description for the Central Pine Barrens area in this chapter of the DGEIS also pertains to these receiving areas and therefore is not reiterated in this section (See also the chapter of the Plan that is entitled: **THE CENTRAL PINE BARRENS TODAY - *Geologic Overview***). The information on the selection of these receiving areas and their relationship to the overall Pine Barrens Credit Program is provided in Chapter V.D. of the Plan.

Table 7.4 Environmental Evaluation and Recommendations for Proposed Receiving Areas in the Towns of Brookhaven, Riverhead and Southampton

Site I.D.	Street Location and Access	Acre-age	Existing Land-Use on Site	Existing Land-Use Surrounding Site	Water District	Sewer Dist.	EPA Superfund or NYS Inactive Hazardous Waste
			BROOKHAVEN TOWN				
A	Between Sunrise Highway & LIRR Tracks	~ 1400	Mostly Vacant Pine Oak Forest & Agriculture (Nursery Stock); Also Spadaro Airport	Residential on South; Vacant on North; Vacant & Residential on East & West	SCWA Mains Serve Area	No	No
B	Between Sunrise Highway & Frowein Road	~ 650	Mostly Vacant Pine Oak Forest; some Residential & Agriculture (Nursery Stock).	Residential on S; Vacant & Residential on N & South; Agriculture (Nursery Stock) on W	SCWA Mains Serve Area	No	No
C	Between Sunrise Highway & Montauk Highway	~ 400	Mostly Agriculture (Nursery Stock & Duck Ranching); Some Residential	Vacant on E; Residential on S; Vacant & Residential on West & North	SCWA Main ~ 500' South of Site	No	No
D	Between Sunrise Highway & Moriches-Middle Island Road	~ 550	Mostly Vacant Pine Oak Forest; Some Agriculture & Residential	Residential on W, S & E; Mostly Vacant on N	SCWA Main ~ 300' West of Site	No	No
E	Between LIE & Moriches-Middle Island Road	~ 1600	Mostly vacant Pine Oak Forest; some agr & res.	Vacant on N & W; vacant & agr on S & residential & golf course on E.	SCWA Mains adjacent to SW, NE & E Portion of Site	No	No
F	Between LIE and Sunrise Hwy	~1 300	Mostly Vacant Pine Oak Forest; Some Agr. & Res; & Manorville Landfill	Vacant & Residential on N & S; Residential & Golf course on W & E	SCWA Mains Serve Area	No	Yes - Manorville Landfill, NYS Site Number 1-52-080
G	Between SC Rte 111 & Old Country Rd.	~6 00	Mostly agr. (sod) & vacant old field	Residential & Golf course on W.; vacant N & S; & vacant & open space on E.	SCWA Main Serves South Subsite; North Subsites Unserved	No	No
H	W. of Southaven County Park Between LIRR tracks & Sunrise Hwy	~5 00	Mostly vacant Pine Oak Forest & some agr.; SC acquiring thru tax lien old file map parcels adj to SC park	SC Park on E; SC facilities on W & N; residential and open space on S	SCWA Main Appears to Serve Area	No	No
I	Between State Rte 25 & BNL	~2 50	Mostly vacant Pine Oak Forest & some residential	Residential & vacant on W; residential & state Park on N; BNL on S; & open space on E	SCWA Main Serves Area	No	No
J	S. of State Rte. 25A between Wm. Floyd Pkwy. & Randall Rd.	~5 00	all agr.	State Park on E.; residential N., S., & W	SCWA Mains Serve Area	No	No
K		~7 5	mostly vacant: some residential	Agr on W.; residential on N.; open space on E.; & residential & commercial on S.	SCWA Main Serves Area	No	No
L	N. of NYS Rte. 25 between Ridge Rd. & Wood Lots Rd.	~1 25	vacant Pine Oak Forest	Open space on N., & E.; residential on S. & W.	SCWA Main Serves Area	No	No
M	N. of NYS Rte 25 & W. of Wading River Hollow Rd.	~5 0	Vacant Pine Oak Forest & distrubed area	Surrounded by residential & some commercial	SCWA Main Serves Area	No	No
N	N. of NYS Rte. 25 & W. of Middle Isalnd Rd.	~4 50	Sandmining is major use; some vacant & residential	Surrounded mostly by vacant & residential, & some open space	SCWA Main Serves Area	No	No

Site I.D.	Street Location and Access	Acre-age	Existing Land-Use on Site	Existing Land-Use Surrounding Site	Water District	Sewer Dist.	EPA Superfund or NYS Inactive Hazardous Waste
O	Between NYS Rte 25A & Whiskey Rd.	~1000	Agr. (nursery stock), sandmining, & vacant Pine Oak Forest	Residential on N. & E.; residnetial & vacant on S. residential & cemetery on W.	SCWA Main Serves Area	No	No
P	S. of Pine Rd. between State Rte. 112 & Mt. Sinai Rd.	~450	Mostly vacant Pine Oak Forest; some commercial	Surrounded by residential	SCWA Mains Serve Area	No	No
Q	Between Granny Rd. & LIE	~200	Vacant Pine Oak Forest	Surrounded by residential	SCWA Mains Serve Area; Pump Station & Well Field Within Site	No	No
R	Between GrannyRd. & Horse Block Rd.	~600	Vacant Pine Oak Forest; some residential	Surrounded by residential	SCWA Mains Serve Western Subsites; Main ~ 1200' South of Eastern Subsite	No	No
S	Betwee LIE & Coram Rd.	~400	Mostly vacant Pine Oak Forest; some residential & Agr.	Surrounded by residential	SCWA Mains Serve Western & Eastern Subsites; Other Subsites Within ~ 3000'	No	No
T	Between Coram-Yaphank Rd. & Gamny Rd.	~400	Mostly vacant Pine Oak Forest; some residentail	Surrounded by mostly residential & some commercial & vacant	SCWA Mains Serve Area	No	No
U	S. of State Rte 25 & W. of State Rte 112	~150	25% commercially developed; 25% vacant Pine Oak Forest; 50% vacant disturbed site	Surrounded by mostly vacant & residential & some commercial	SCWA Mains Serve North Subsite; South Subsite Adjacent to Proposed Pump Station & Well Field	No	No
V	E. of Coram- Mt. Sinai Rd. & Coram-Yaphank Rd.	~400	Mostly vacant scattered parcels	Surrounded by mostly residential	SCWA Mains Serve 28 of the 33 Subsites; Other Subsites Within ~ 2500' of SCWA Mains	No	No
RIVERHEAD TOWN							
A	Fronts on Middle Country Road (SR 25), Edwards Avenue, LIE (SR 495) & LIRR Tracks	1220	Almost All of Site is in Agriculture, Several Residential & Small Industrial Parcels, & Water Sport Park	Grumman Facility on West; Agriculture & Some Residential on North & South; Commercial on East	No	No	No
B	Fronts on Old Country Road, Main Street (SR 25), Kroemer Avenue & LIRR Tracks	321	~50% of Site is Vacant; Remainder of Site has Commercial, Industrial & Multi-Family Residential	Surrounded Primarily by Vacant & Residential; Some Commercial & Industrial	Within Riverhead Water District	No	No
SOUTHAMPTON TOWN							

Site I.D.	Street Location and Access	Acre-age	Existing Land-Use on Site	Existing Land-Use Surrounding Site	Water District	Sewer Dist.	EPA Superfund or NYS Inactive Hazardous Waste
A	Fronts on Old Country Road (CR 71)	140	Agriculture (Nursery Stock)	Pine Oak Forest on East & West; Residential Development on South; Pine Oak Forest & Nursery Stock on North	SCWA 12" Main runs along Old Country Road	No	No
B	Fronts on Old Country Road (CR 71) & Speonk Riverhead Road	340	Mostly Vacant Pine Oak Forest & Some Old Field; Also Duck Research Lab & < 10 Houses	Pine Oak Forest on North & West; Residential & Industrial on East; Residential on South	SCWA 12" Main runs along Old Country Road	No	No - However B.S. & S. Treated Lumber Corporation, NYS Site Number 1-52-123, is located ~500' NE of Site
C	Fronts on Old Country Road (CR 71)	185	Mostly Vacant Pine Oak Forest, Some Agriculture (Nursery Stock) & < 10 Houses	Residential & Industrial on West; Auto Junk Yards & Sand Mines on North; Pine Oak Forest & Agriculture (Nursery Stock) on East; Pine Oak Forest on South	SCWA 12" Main runs along Old Country Road	No	No - However B.S. & S. Treated Lumber Corporation, NYS Site Number 1-52-123, is located ~300' NW of Site
D	Fronts on Old Country Road (CR 71)	322	Mostly County-Owned Facilities for SCPD & Sheriff; Drag Strip; Town-Owned Solid Waste Transfer Station; Some Vacant Pine Oak Forest	Pet Cemetery & Vacant Pine Oak Forest on West; Pine Oak Forest on North & East; Pine Oak Forest & Residential on South	SCWA 12" Main runs along Old Country Road	No	Yes - Westhampton Landfill, NYS Site Number 1-52-060
E	Fronts on Riverhead Hampton Bays Road (SR 24) & Cooke Blvd.	65	~50% of Site is an Abandoned Movie Theater & ~50% of Site is Vacant Pine Oak Forest	Bordered by Residential Development on All Sides & Elementary School on South	Within Riverside Water District	No	No
F	Fronts on Old Riverhead Road	50	Industrial Park Area of Suffolk County Airport	Bordered by Suffolk County Airport on North, East, & South; Commercial & Institutional Development on West	SCWA 10" Main runs along Riverhead Road	No	Maybe - On or near Suffolk Airport Canine Kennel, NYS Site Number 1-52-079 and Suffolk County Air National Guard Base, NYS Site Number 1-52-146
G	Fronts on Old Country Road & LIRR Tracks	151	Mostly Vacant Pine Oak Forest with Three Large Disturbed Areas Containing Auto Junk Yard, DPW Yard & Sand Mining Activity	Suffolk County Airport on North; Vacant Pine Oak Forest on East; Residential & Vacant on South & West	SCWA 8" Main runs along Old Country Road	No	Yes - L. & C. Concrete Corp, NYS Site Number 1-52-067
I	Fronts on Old Country Road & Montauk Highway	33	Mostly Vacant Pine Oak Forest; Some Vacant Old Field	Residential Development on South, East & West; Vacant Pine Oak Forest & 100 Unit Trailer Park on North	SCWA 12" Mains run along Montauk Highway & Old Country Road	No	No
J	Fronts on Montauk Highway, Squiretown Road & Sunrise Highway	60	~50% of Site Vacant Pine Oak Forest; Remainder of Site Contains About 40 Parcels Already In Residential or Commercial Development	Commercial on South; Residential on North & East; Cemetery on West	Within Hampton Bays Water District	No	No

Site I.D.	Street Location and Access	Acre-age	Existing Land-Use on Site	Existing Land-Use Surrounding Site	Water District	Sewer Dist.	EPA Superfund or NYS Inactive Hazardous Waste
K	Fronts on Old Country Road, North Bay Avenue & Ketcham Avenue	60	~75% of Site in Agriculture; Remainder of Site Residential	Vacant Pine Oak Forest & Agriculture (Nursery Stock) on North; Residential on East, West & South	SCWA 12" Main runs along Old Country Road	No	No
L	Fronts on Montauk Highway, Old Country Road, Phillips Avenue & LIRR Tracks	532	~50% of Site Vacant Pine Oak Forest; Some Agriculture & Sand Mining; Remainder of Site Residential	Residential on East, West & South; Vacant Pine Oak Forest, Residential & Institutional on North	SCWA 12" Mains run along Montauk Highway & Old Country Road	No	No
M	Fronts on Montauk Highway, Old Country Road, Seabreeze Avenue & Beaverdam Creek	58	~75% of Site Vacant Pine Oak Forest & Old Field; Remainder of Site Commercial	Residential on North, West & South; Beaverdam Creek on East	SCWA 12" Mains run along Old Country Road & Seabreeze Avenue	No	No
N	Fronts on Old Country Road , Old Meeting House Road & Montauk Highway (SR 27A)	103	~35% of Site is Mostly Vacant Pine Oak Forest Owned by SCWA; Large Disturbed Area From Past Sand Mining; Several Commercial & Residential Uses; 60 Unit Trailer Park	Mostly Residential on East, South & West; Mostly Vacant Pine Oak Forest on North	SCWA 12" Main runs along Old Meeting House Road	No	No
O	Fronts on Box Tree Road, Wide Side Avenue & Montauk Highway (SR 27A)	60	~65% of Site is Agriculture, Remainder is Vacant Pine Oak Forest & Several Houses	Surrounded by Residential Development	SCWA 8" Main runs along Montauk Highway (SR 27A)	No	No
P	Fronts on Montauk Highway, Josiah Foster Path, Head of Lots Road & Weesuck Creek	28	Mostly Vacant Pine Oak Forest & One Estate	Weesuck Creek on West; Vacant on South; Residential Development on North & East	SCWA 12" Main runs along Montauk Highway & 10" Main runs along Josiah Foster Path	No	No
Q	Fronts on Montauk Highway & LIRR Tracks	60	~75% of Site is Already In Residential or Commercial Development; Remaining ~25% Vacant Pine Oak Forest	Vacant Pine Oak Forest on North & West; Residential Development on South & East	Within Hampton Bays Water District	No	No
R	Fronts on Montauk Highway, Springville Road & LIRR Tracks	23	All Parcels Within Site are Already In Residential or Commercial Development	Commercial & Multi-Family Residential on North; Commercial on East & West; Utility & Residential on South	Within Hampton Bays Water District	No	No
S	Fronts on Montauk Highway, Ponquogue Road & LIRR Tracks	21	~75% of Site In Commercial Development; Remainder of Site Vacant Pine Oak Forest	Commercial on West; Residential on North, South & East	Within Hampton Bays Water District	No	No
T	Fronts on Montauk Highway, Canal Road West & LIRR Tracks	15	~75% of Site In Commercial or Residential Development; Remainder of Site Vacant Pine Oak Forest	Commercial & Residential on South; Residential on North & West; Shinnecock Canal on East	Within Hampton Bays Water District	No	No

Site I.D.	Proposed O.S. Acq.	100-Year Floodplain Boundary	NYS WS&R River Corridor	NYS Fresh & Tidal Wetlands	Soils & Slopes	Depth to Groundwater < 4'	Rare Elements on Site	Recommendations
BROOKHAVEN TOWN								
A	No	No	No	Yes - ~ 3% Freshwater Wetlands	At**, CpC, CpE**, Gp, HaA, PIA, PIB, Rc, RdA, RdB	Yes - < 10% of Site With High Groundwater Table	Not Available	Suitable Receiving site. Cluster away from wetlands, wet soils, and steep slopes
B	No	No	No	No	CpA, CpC, CuB, Ma, PIA, PIB, Rc, RdA	No	Not Available	Suitable receiving site.
C	No	No	No	Yes - ~ 5% Freshwater Wetlands	At**, CpC, Mu**, PIA, PIB, RdA, RdB	Yes - < 10% of Site With High Groundwater Table	Not Available	Suitable receiving site. Cluster away from steep wetlands and wet soils.
D	No	No	No	No	CpC, CpE**, Gp, PIA, PIB, RdA, RdB	No	Not Available	Suitable Receiving site. Cluster away from wetlands, wet soils, and steep slopes
E	No	No	No	Yes - ~ 2% Freshwater Wetlands	Bd**, CpA, CpC, CpE**, De*, Gp, HaA, PIA, PIB, PIC*, Ra**, RdA, RdB, We**	Yes - < 10% of Site With High Groundwater Table. Wet Soils Concentrated to the Northeast.	No	Suitable Receiving site. Cluster away from wetlands, wet soils, and steep slopes, rare species or rare communities. Area near hazardous waste site not suitable for residentail development.
F	No	No	No	Yes - ~ 3% Freshwater Wetlands	CpA, CpC, CpE**, CuB, Ma, Mu**, PIA, PIB, PIC*, Ra**, RdA, RdB, We**	Yes - < 10% of Site With High Groundwater Table. Wet Soils Concentrated to the Northwest.	Yes - #8, #12, & #30 Moriches Quad.	Suitable Receiving site. Cluster away from wetlands, wet soils, and steep slopes
G	No	No	No	Yes - < 1% Freshwater Wetlands	CpA, CpC, CpE**, CuB, HaA, HaB, MfB**, PIB, PIC*, RdA, RdB	No	No	Suitable Receiving site, except for proposed acquisition area adjacent to SC Park
H	Yes - ~ 15% of Site Proposed for Acquisition	No	No	No	HaA, PIB, PIC*, RdA, RdB	No	Not Available	Suitable Receiving site.
I	No	No	No	No	CpA, CpC, HaA, PIA, PIB, PIC*, RdA, RdB	No	No	Suitable Receiving site. Cluster away wet soils
J	No	No	No	No	CpC, HaA, HaB, He**, PIA, RdA, RdB, RdC*	Yes - < 10% of Site With High Groundwater Table	No	
K	No	No	No	No	CuB, HaA, Rc, RdA	No	No	Suitable Receiving site.
L	No	No	No	No	CpA, CpC, HaA, HaB, PIA, PIB, RdA, RdB	No	No	Suitable Receiving site.

Site I.D.	Proposed O.S. Acq.	100-Year Floodplain Boundary	NYS WS&R River Corridor	NYS Fresh & Tidal Wetlands	Soils & Slopes	Depth to Groundwater < 4'	Rare Elements on Site	Recommendations
M	No	No	No	No	CuB, HaA, HaB, HaC°, RdA, RdB	No	Yes - #17 Middle Island Quad.	Suitable Receiving site. Cluster away from rare species and/or rare communities
N	No	No	No	Yes - < 1% Freshwater Wetlands	CpA, CpC, CpE°°, CuB, Gp, HaA, HaB, He°°, Ma, PlA, PlB, PlC°, PmC3°, RdA, RdB	Yes - < 10% of Site With High Groundwater Table	Yes - #2 & #33 Middle Island Quad.	Suitable Receiving site. Cluster away from wetlands, wet soils, steep slopes, rare species and/or rare communities.
O	Yes - ~ 3% of Site Acquired by State	No	No	Yes - ~ 5% Freshwater Wetlands	CpA, CpC, CpE°°, CuB, CuE°°, Gp, HaA, HaB, HaC°, PlC°, PmB3, PmC3°, RdA, RdB, RdC°, RhB	No	No	Suitable Receiving site. Cluster away from wetlands, wet soils, steep slopes, and proposed acquisition area of ~ 100 acres in the SE corner of site
P	No	No	No	No	CpA, CpC, CpE°°, CuB, PlA, PlB, Rc	No	Yes - #23 Bellport Quad.	Suitable Receiving site. Cluster away from steep slopes, rare species and/or rare communities.
Q	No	No	No	No	CpA, CpC, HaA, PlA, PlB, PlC, RdA, RdB	No	Not Available	Suitable Receiving site. Cluster away from well field site
R	No	No	No	No	CpA, CpC, CuB, PlA, PlB, Rc, RdA, RdB, RdC°	No	No	Suitable receiving site.
S	No	No	No	No	CpA, CpC, CpE°°, HaA, PlA, PlB, RdA, RdB	No	No	Suitable Receiving site. Cluster away f steep slopes.
T	No	No	No	Yes - ~ 2% Freshwater Wetlands	CpA, CpC, CpE°°, PlA, PlB, RdA	No	Yes - #8 & #31 Bellport Quad.	Suitable Receiving site, however cluster away from wetlands, rare species, and/or rare communities and extensive st.eep slopes. Site located on Ronkonkoma moraine in deep recharge area (Zone 3)
U	No	No	No	Yes - ~ 10% Freshwater Wetlands	Bd°°, CpA, CpC, CpE°°, CuB, PlA	Yes - < 10% of Site With High Groundwater Table	No	Suitable Receiving site. Cluster away from wetlands, extensive steep slopes, and potential well field sites. Site located on Ronkonkoma moraine in deep recharge area (zone 3)
V	No	No	No	Yes - Western-most Subsite ~ 30% Freshwater Wetlands	At°°, CpA, CpC, CpE°°, CuB, HaA, MfA°°, PlA, PlB, PlC°, RdA, RdB, RhB, SdA°	Yes - Two of the 33 Subsites With Major Areas of High or Seasonally High Groundwater	No	Most subsites are suitable receiving area, however two western most subsites along Hoarseblock Rd have sever developmental constraints due to extensive freshwater wetlands.

Site I.D.	Proposed O.S. Acq.	100-Year Floodplain Boundary	NYS WS&R River Corridor	NYS Fresh & Tidal Wetlands	Soils & Slopes	Depth to Groundwater < 4'	Rare Elements on Site	Recommendations
RIVERHEAD TOWN								
A	No	None	No	Yes - ~1% Freshwater Kettleholes	CpA, CpC, CpE**, CuB, CuC*, De*, HaA, HaB, He**, PlA, PlB, PlC*, PmB3, PmC3*, RdA, RdB, RdC*	Yes - < 10% of Site With High Groundwater Table	Yes - #42 Riverhead Quad.	Suitable receiving site. Cluster away from wetlands, wet soils, steep slopes, rare species and/or rare communities.
B	No	None	Yes - ~70%	Yes - ~10% Freshwater Wetlands	At**, Bd**, CpA, CpC, CpE**, CuB, HaA, PlB, PlC*, RdB	Yes - ~ 10% of Site With High Groundwater Table	Yes - #60 Riverhead Quad.	Thirty percent of site suitable receiving site; cluster away from wetlands, wet soils, steep slopes, rare species and/or rare communities. Remaining 70% is severly limited to development due to constraints of NYS WS &R Rivers Act
SOUTHAMPTON TOWN								
A	No	No	No	No	CpC, PlA, PlB, RdA, RdB	No	No	Suitable receiving site.
B	No	No	No	Yes - ~ 5% Freshwater Wetlands	CpC, CpE**, CuB, De*, PlA, PlB, RdA, RdB,	Yes - ~ 10% of Site With Seasonally High Groundwater Table	No	Suitable receiving site, however site not suitable for residential development as it is near hazardous waste site. Cluster away from wetlands, wet soils, and steep slopes.
C	No	No	No	No	CpA, CpC, HaA, PlB, RdA	No	No	Suitable receiving site, however site not suitable for residential development as it is near hazardous waste site.
D	No	No	No	No	CpA, CpC, CuB, Gp, PlA, PlB, RdA, RdB	No	No	Suitable receiving site, however not presently available due to existing County/Town uses. Site not suitable for residential development because of hazardous waste site.
E	No	No	No	No	CpA, CuB, De*	Yes - < 10% of Site With Seasonally High Groundwater Table	No	1. Suitable receiving site, however cluster away from seasonally wet soils.
F	No	No	No	No	CuB	No	No	Suitable receiving site, however site not suitable for residential development as it is on or near hazardous waste sites.
G	No	No	No	No	CpA, CpC, CuB, De*, Gp, Ma, PlA, RdA, RhB	Yes - < 10% of Site With Seasonally High Groundwater Table	Not Available	Suitable receiving site, however site not suitable for residential development because of hazardous waste site. Cluster away from seasonally wet soils.

Site I.D.	Proposed O.S. Acq.	100-Year Floodplain Boundary	NYS WS&R River Corridor	NYS Fresh & Tidal Wetlands	Soils & Slopes	Depth to Groundwater < 4'	Rare Elements on Site	Recommendations
I	No	No	No	No	CpA, PIA	No	Not Available	Suitable receiving site.
J	No	No	No	No	CpC, CpE**, CuB	No	Not Available	Suitable receiving site. Cluster away from steep slopes.
K	No	No	No	No	He, PIA, PIB, RdA, RdB	No	Not Available	Suitable receiving site.
L	No	No	No	Yes - ~ 10% Freshwater Wetlands	CpA, CpC, CuB, Gp, HaA, PIA, PIB, PIC*, RdA, RdB, RhB	No	Not Available	Suitable receiving site. Cluster away from wetlands.
M	No	Yes - < 10% of Site Within 100 Year Floodplain Zone A	No	Yes - ~ 1% Tidal Fringe	CpC, PIA, PIB, RdA	No	Not Available	Suitable receiving site. Cluster away from floodplain.
N	No	No	No	Yes - ~ 2% Freshwater Wetlands	CpC, De*, Gp, PIA, RdA	Yes - < 10% of Site With Seasonally High Groundwater Table	Not Available	Suitable receiving site, however parts of site not presently available; owned by SCWA. Cluster away from wetlands and wet soils..
O	No	No	No	No	PIA, RdA	No	Not Available	Suitable receiving site.
P	No	Yes - ~ 50% of Site Within 100 Year Floodplain Zone A	No	Yes - ~ 35% Tidal & Freshwater Wetlands	At**, PIA, PIB, Tm**	Yes - ~ 35% of Site With High Groundwater Table	Not Available	Not suitable receiving site because of extensive floodplain, wetlands and wet soils.
Q	No	No	No	No	CpC, PIA, PIB	No	Not Available	Suitable receiving site, however large parts of site are already developed and may not be presently available.
R	No	No	No	No	CuB, PIA, PIB	No	Not Available	Suitable receiving site, however all parts of site are already developed and may not be presently available.
S	No	No	No	No	CpC, CuB, Ur	No	Not Available	Suitable receiving site, however large parts of site are already developed and may not be presently available.
T	No	No	No	No	CpC, CpE**, CuB	No	Not Available	Suitable receiving site, however large parts of site are already developed and may not be presently available.

* Soil types with moderate constraints on sewage disposal and/or homesites.
** Soil types with severe constraints on sewage disposal and/or homesites.

C. Potential Environmental Impacts

Core Preservation Area

This section provides a description of impacts on the core preservation area that would be expected to result from the implementation of the Plan. It should be noted that 32,580 acres are already preserved in the core as public land (includes: federal, state and town - parks and open space and county and town development right areas and surface waters)

Privately owned vacant land that is residentially zoned comprises 91.6 % of the 10,254 acres of the privately owned vacant land in the core area. The full build-out condition that would occur in the core area for residential development under existing zoning (ie: without the implementation of the Plan) would show the following additional housing units and services (based on acreage and does not take into consideration parcel size):

Additonal Results:

Water Usage @ 400 gallons per day (gpd)	1,463,600
Sanitary Flow @ 300 gpd	1,097,700
Acreage Cleared	2,728
Population @ 2.7 persons/household	9,879
Housing Units	3,659

The actual number of housing units is anticipated to be substantially less since permitted uses in the core area will be limited. No new commercial, industrial, or agricultural uses will be allowed. Permitted uses for new residential development will only be allowed on developed road segments, with each residential dwelling unit required to have: a lot area of at least 400,000 square feet, a building set back of 200 feet but no more than 300 feet and only up to 3% of any lot may be cleared (this does not include driveway clearance attributable to the setback requirement). The actual number of housing units that would occur based on this criteria cannot presently be determined.

Clearance standards used by the Suffolk County Pine Barrens Review Commission that are the same as the standards for land use development that appear in the Chapter V. of the Plan entitled: **THE PINE BARRENS PLAN** were used to calculate the amount of acreage cleared for this scenario that takes into consideration the current zoning for parcels.

For the number of additional housing units in the core under the this scenario, figures for the Towns of Brookhaven and Southampton were used from Figure 4 (Potential Additional Housing Units Under Existing Zoning Units of Privately Owned Vacant Land) in Chapter IV of the Plan entitled: **THE CENTRAL PINE BARRENS TODAY**. For Riverhead the figure of 220 units was used (source: Memorandum from Richard Hanley, Director of Planning, to: Robert Riekert, Suffolk County Planning, Base Data - TDR Program for the Town of Riverhead, dated May 3, 1994).

Geology

The proposed action includes the preservation of over 5,500 acres in the Core Preservation Area. As indicated in Chapter IV. of the Plan entitled: **THE CENTRAL PINE BARRENS TODAY - Geologic Overview**, certain significant geologic features (ie: kettle holes, kames and swale areas) were identified in the Central Pine Barrens area, that includes the core preservation area. Any sensitive geologic features located within the core

area will not be adversely impacted by the implementation of the Plan due to their location in the core area that has been designated for preservation in perpetuity.

As previously explained, the permitted uses in the core area will be extremely limited (see Chapter V in the Plan entitled: **THE PINE BARRENS PLAN**) with new development confined to areas along existing roadways. Possible short term impacts may be anticipated from excavation activities that are required for the installation of foundations, water lines, drainage and sanitary facilities associated with the limited new developments and other permitted uses in the core area. These activities are not extensive and, as such, are not expected to result in a significant adverse impact on geology.

The overall cumulative impact of the Plan on geologic resources within the core area is anticipated to be beneficial since this area is designated for preservation in perpetuity. Development that could potentially disturb these areas would be directed away from the core area through the Pine Barren Credit Program (chapter in Plan entitled: **THE PINE BARRENS PLAN**) and kept to a minimum for new developments that will only be allowed along existing roadways and that need to meet specific criteria in order for these parcels to be allowed to be developed. Development activities will also be reduced due to the anticipated acquisition of a portion of the parcels within the core area. The anticipated amount of land that would be cleared and that could potentially impact geologic resource would therefore be anticipated to be substantially less than the estimated full build-out figure of 2,726 acres.

Secondary impacts on from the protection of these geologic resources within the core area would be ecologically sensitive pine barren communities associated with sensitive geologic land forms would also be protected. Long term impacts on geologic resources would be beneficial since the sensitive geologic areas within the core would be protected to the greatest extent possible through the implementation of the Plan's components that address the management and protection of land within the core (see the chapter in the Plan entitled: **THE PINE BARRENS PLAN**).

Soils

In the chapter of the Plan entitled: **THE CENTRAL PINE BARRENS TODAY**, is an inventory of the general soil types within the Central Pine Barrens Area. These general soil types are identified for the core area on a map provided in that chapter of the Plan. Environmentally sensitive soil resources in the core area, including prime agricultural soils and soils and land types that have a high water table (associated with environmentally sensitive wetland and marsh areas), are identified also in that chapter of the Plan. None of the permitted uses or new development in the core area will be situated on designated environmentally sensitive soil resources.

Development that could potentially disturb these soils would be directed away from the core area through the Pine Barren Credit Program (chapter in Plan entitled: **THE PINE BARRENS PLAN**) and kept to a minimum for new developments that will only be allowed along existing roadways and need to meet specific development criteria.

Short term impacts from excavation activities in the core area would be minimal since they are associated only with limited permitted uses. It is expected that, for the most part, the excavated soil will be of a quality sufficient for use in backfilling. Thus, extensive cutting and filling for new development and other permitted uses in the core area is not anticipated.

Secondary impacts that would result from the protection of environmentally sensitive soils as a result of the Plan's implementation would be ecologically sensitive pine barren communities associated with these soil types

would also protected from disturbance. Additional secondary impacts that would occur is the protection of water quality through the protection of the environmentally sensitive soils associated with wetland and marshes that have high water tables. Long term impacts on environmentally sensitive soils would be beneficial since these soils and ecological communities will be protected to the maximum extent possible through the implementation of the Plan's components that address the management and protection of land and ecologically sensitive communities within the core (see the chapter in the Plan entitled: **THE PINE BARRENS PLAN**).

Based upon the above, the overall impact to soils in the core area will be minimal.

Topography

The general topographic features in the Core area will be maintained. Permitted uses will be confined along existing roadway areas, and construction of same will not be permitted on slopes of greater than 15 percent. Therefore, no significant adverse impact to topographic features is anticipated.

Similar to soils, steep slopes will be protected, as the vast majority of development that might otherwise have impacted these areas will be redirected from the core area and/or reduced by the possible acquisition of developable parcels within the core area.

Water Resources

Hydrogeology

The overall hydrogeology (i.e., Ronkonkoma Moraine and Outwash Plains, Surficial Silt and Clay Deposits, Glacial Clay Units, Upper Glacial Aquifer, Gardiners Clay Unit, Magothy Aquifer) as described in the chapter of the Plan entitiled: **THE CENTRAL PINE BARRENS TODAY** will not be impacted by the proposed action or by permitted uses in the core area.

Hydrology

The potential amount of water that will be used by additional residentially related uses in the core area is anticipated to be substantially less than the estimated full build-out figure of 1,463,600 gpd since development will be redirected to outside of the core area through the Pine Barrens Credit Program. Development potential will also be reduced through the acquisition of a portion of the parcels in this area. These factors along with the fact that no new commercial, industrial or agricultural uses will be allowed in the core area will potentially result in an overall decrease in demand on ground water resources in the core area. Therefore the overall impact to the core area will be beneficial.

As indicated in the chapter of the Plan entitled: **THE CENTRAL PINE BARRENS TODAY**, there is a discussion under ground water resources on human impacts on groundwater. Human impacts have been documented in agricultural areas as well as in areas immediately around spills and leaks (such as those at gasoline stations and at major facilities such as Brookhaven National Laboratory, Grumman-Calverton and Westhampton Airport.) As previously mentioned, the Plan does not permit new agricultural uses or commercial/industrial uses in the core. This action is a clear environmental benefit as it will serve to minimize further degradation of groundwater quality.

As good to excellent water quality is found in relatively undeveloped, non-agricultural regions of the Central Pine Barrens area, redirection of the majority of residential development outside the core area through the Pine Barrens Credit Program (see chapter in Plan entitled: **THE PINE BARRENS PLAN**) is expected to be environmentally beneficial as it will aid in the protection of groundwater quality. Short term impacts to ground water and surface water in the core area due to construction activities related to permitted uses in the core area will likely be minimal due to the limitation placed on permitted uses in the core area by the Plan. The long term impact of the proposed action on ground water and surface water resources will be an overall decrease in the amount of road runoff containing various contaminants, application of road salt, sanitary discharges, fertilizer and pesticide applications to private properties, inadvertent discharges of household chemicals, and the like, due to the limitation of permitted uses in the core area and the redirection of development away from the core area.

The actual amount of sanitary flow that would occur from additional new residential development allowed in the core area under the Plan is anticipated to be substantially less than the amount of sanitary flow that was estimated for the additional housing units that could occur under the full build-out scenario (1,097,700 gpd). The amount of sanitary flow in the core area under the Plan would be less since development is being redirected away from the core area, a certain portion of the parcels in the core may be acquired and the permitted uses within the core area will be very limited. Therefore the proposed action will have an overall beneficial impact on groundwater by reducing the potential of further degradation from sewage systems.

Pond and Wetland Quality

With regard to pond and wetland water quality, there is little available information on water quality conditions for specific wetlands and ponds within the Central Pine Barrens area. Under natural conditions, these systems are probably nutrient deficient, with nitrogen and phosphorus being the chemicals that limit productivity. In the chapter of the Plan entitled: **THE PINE BARRENS TODAY**, under the section that discusses pine barrens ecology it is stated that "Present day water quality in these systems can be expected to reflect such inputs as atmospheric pollution and stormwater runoff; nitrogen from fertilizers and [sic] can be introduced into these systems by runoff and groundwater, while phosphorus can be derived from runoff (since phosphate is relatively immobile in groundwater. . .)"

Short term impacts on ponds and wetlands that may result from construction activities related to permitted uses in the core area would be minimal due to the development limitations placed on these permitted uses in proximity to these areas. Secondary impacts that would result from the protection of pond and wetland quality as a result of the Plan's implementation would be the protection and prevention of degradation of sensitive and often rare or endangered ecological communities (see the chapter in the Plan entitled: **THE PINE BARRENS TODAY**, for a description of ecological communities) that are associated with these ponds and wetlands. Long term impacts to pond and wetland quality will be beneficial since the redirection of development from the core area will reduce anticipated stormwater runoff and nitrogen from fertilizers associated with future development.

Air Resources and Noise

The construction of permitted uses in the core preservation area will result in a slight increase in air pollution emissions that would be of short duration. The primary source of potential emissions is from fugitive dust resulting from site clearing and grading operations for the individual units. Fugitive dust consists of soil particles which become airborne either when disturbed by heavy equipment operations at the construction site or through wind erosion of exposed soil after ground cover is removed.

To a lesser extent, other construction related air emissions will arise from the operation of construction equipment at the locations where permitted uses are being constructed and from vehicle travel by workers traveling to and from these sites. All of these stated construction related air quality impacts will be of relatively short duration. Furthermore, as the permitted uses are extremely limited and subject to substantial clearing restrictions, the short term impacts on ambient air quality are expected to be negligible.

After project completion, the minor increase in traffic volume associated with permitted residential uses will result in an minimal increase in carbon monoxide levels. This potentially long term impact is not considered to be significant and will be far less than anticipated if the core area was developed in accordance with existing zoning (i.e., full build-out). A beneficial long term impact that could occur to air quality in the core area is an overall improvement of air quality in this area since traffic and development will be less in the core area due to the transfer of development to areas outside of the core and land acquisition efforts that will likely take place in the core area.

Construction of permitted uses in the core area will cause temporary increases in noise levels due to the movement of heavy equipment and other construction-related activities that would result in short term impacts. As the anticipated construction activity will be minimal, noise level increases will be minimal.

It is expected, also, that the long term impact on noise occurring from routine vehicular and pedestrian traffic in the core area after full development of permitted uses will be significantly less than if development in the core area was allowed to occur according to prevailing zoning (ie: full build-out) since less development will be allowed.

Therefore an overall beneficial impact on air quality and noise is anticipated to result from the implementation of the Plan.

Ecology

It is clear that preservation of the Core area serves to accomplish the New York State Legislature's finding that:

> . . . the Pine Barrens-Peconic Bay System contains one of the greatest concentrations and diversities of endangered, threatened and special concern species of plants and animals to be found in the state, and that protection of their habitats is in the best interest of the people of New York.

However, most ecologists would agree that the question, "How much area is needed to preserve the Central Pine Barrens Ecosystem?" cannot be answered with certainty. Nevertheless, a large body of scientific knowledge, especially in the area of Biogeography and the emerging discipline of Conservation Biology, provides many insights.

For the purposes of this discussion, the Central Pine Barrens Ecosystem is defined as that diverse assemblage of natural communities which exists today within the boundaries which are described by Article 57. It is recognized that many of the "natural" communities have been influenced, to greater or lesser degrees, by human activities. In addition, it is recognized that the legally-established boundaries are, by their very nature, an artificial and somewhat inaccurate representation of natural community boundaries. Nevertheless, the following principles must be considered when discussing the dimensions of the core preserve.

The 52,000 acre core preservation area represents about one fifth of the original Long Island Pine Barrens ecosystem. It is generally agreed that, irrespective of natural or early human factors, pine barrens type

communities once ranged over a much larger portion of Long Island than present time. From the Hempstead Plains in central Nassau County to the Pine Barrens in western Southampton Town, these dry, fire-adapted communities covered about 250,000 acres.
The Hempstead Plains have been reduced to a 20-acre patch. The Oak Brush Plains now cover about 1,000 acres in western Suffolk. The overwhelming majority of the remaining pine barrens is contained within the 100,000 acre Central Pine Barrens Area. Only the area within the 52,000-acre Core Preserve is capable of functioning as an intact ecosystem. It should also be recognized that the entire core area is not now in a completely undeveloped state. In addition to numerous roads, several thousand acres of the landscape are now developed.

Size and shape are the two most important considerations in designing natural preserves. In essence, "the bigger the better" is the fundamental governing rule of preserve design theory. Ample scientific evidence supports the notion, based in the principles of island biogeography, that larger patches (or "islands") of habitat will support a greater number of species than will smaller patches. In the case of the Long Island Pine Barrens, it is known that the presence of entire species has already been lost as the original 250,000 acres have been reduced to their present level. Dozens of rare plants and animals are now known only from historical records.

Preserves are more viable if their shape is generally compact, not linear or with numerous "appendages." Compact shape minimizes the amount of *edge*. *Edge* allows for intrusion by organisms from adjoining ecosystems. Such intrusion can be by animals or plants and can entail competition for resources, predation and parasitism. *Edginess* also confounds management of the ecosystem. Human effects on the landscape are more difficult to manage. Such effects include disturbance, erosion, dumping, clearing and burning. Furthermore, *edginess* increases the likelihood that human considerations will limit management capability. As an example, prescribed burning may be impractical in areas adjacent to human development.

The westernmost portion of the core area is not especially compact; it suffers and will continue to suffer more negative *edge effect* than the most eastern portions. Nevertheless, it must be recognized that the benefits of preserves and compactness obtain at all different scales. In other words, simply because an area of forest is remote from the core does not mean that it loses all ecological value. For example, a hundred-acre woodland still offers valuable habitat to forest interior birds. Because of their mobility, the birds in such a woodland can interact with their species in the core area or other large woodlands.

Most species of animals require a minimum area of otherwise suitable habitat. Amongst invertebrates, this may be a very small area, perhaps a few square yards. Others require extensive acreages. In the Central Pine Barrens, the larger raptorial birds, such as the red-tailed hawk and the great horned owl, probably exhibit the largest *minimum habitat sizes*. Each breeding pair needs at least a couple of hundred acres of natural landscape in order to establish a home range. Although neither of these species is restricted to pine barrens habitats, one can appreciate that the number of available home ranges within the core preserve is both finite and relatively low.

The problem of limited habitat availability is even more acute for species with special habitat requirements. In the Central Pine Barrens, the group of organisms most affected by loss of large and compact patches of habitat are the so-called "forest interior birds." These birds require expanses of closed-canopy woodlands. They are highly susceptible to the effects of edge. Such birds as the ovenbird, wood peewee and scarlet tanager are common wherever large blocks of woodland are found; they will use patches of less than 100 acres in size. On the other hand, the broad-winged hawk and hermit thrush are far less common than they were earlier in the century. This decline has been attributed to the scarcity of larger blocks of unbroken woodland.

Science does not know, for each species, how few individuals are required to maintain a self-sustaining population, be it plant or animal. It is well-accepted, however, that the vagaries of mortality, reproductive success, emigration and local habitat loss combine to form a threshold level of population, the *minimum viable population*, below which the population would be expected to disappear over time. Thus, the core preserve may include sufficient suitable habitats for a relatively small number of individuals within a species. It is not known how close we are to the minimum viable population for such species as the broadwinged hawk, hermit thrush or common nighthawk, all of which have declined dramatically from earlier population levels. More important, many of the rare plants and animals of the Central Pine Barrens are now known from single or very few localities.

When clusters of populations interact together they function as *metapopulations. Metapopulations* allow for the genetic exchange amongst breeding populations. Genetic exchange preserves a population's fitness and adaptability. The existence of *metapopulations* also helps a species overcome local extinction.

The core preserve contains several metapopulations of the NYSDEC Endangered tiger salamander. Although this species is found on Long Island both east and west of the Central Pine Barrens, the core area offers its best chances for long-term survival because it is natural enough to allow for interaction amongst breeding salamander populations. Elsewhere, high levels of development pose a significant threat to their continued existence.

There are very few, if any, species of plants or animals which are found throughout the Central Pine Barrens. Instead, this ecosystem comprises numerous communities. The Plan recognizes several distinct natural community types. Each community shares common traits with other communities within its type but is nevertheless unique.

Furthermore, within each community are other, subtler differences which affect the distribution of plants and animals. As a result, the distribution of communities and organisms is a patchwork, or mosaic, over the Central Pine Barrens landscape.

This natural mosaic is continually changing. Natural forces, most notably fire and succession, are changing the conditions within each patch of habitat. Human actions also alter conditions. Species leave or enter these patches in response to these changes. In order to maintain the integrity of the Central Pine Barrens ecosystem, maximum preservation of the core area is needed to maintain the full array of community types in the face of change. As an example, consider organisms which require early successional stages of pine barrens; the eastern bluebird or the prairie warbler. The bluebird uses areas which have recently experienced hot burns. The canopy must be open or absent and the groundcover must be sparse. Such conditions exist for but a few years following unusually hot fires. Then, natural succession begins to develop lush understory and the canopy begins to close. Prairie warblers may move in at this point but the bluebirds will have to find other freshly burned sites. The likelihood of finding such sites is reduced if the core area is reduced. Interestingly, the prairie warbler will find itself in the same predicament a few years later. As the canopy closes, the prairie warblers will have to find other shrubby sites and pine warblers will move into the canopy.

The core preservation area contains the greatest density of rare plants, animals and natural communities in New York State. The New York State Natural Heritage has recorded 292 occurrences of rare "elements" here. Any reduction in this number represents a loss of biodiversity.

Any population of organisms exhibits some degree of genetic variation amongst its individual members. This variety is "used" by a population in order to adapt and evolve. Smaller populations generally have less genetic

variation than larger populations. Thus, as any population is reduced in size, that population's ability to adapt to changing environmental conditions is reduced.

Overall, by safeguarding the core preservation area, and by restricting permitted uses as described in chapter of the Plan entitled: **THE PINE BARRENS PLAN**, will result in the preservation of over 10,254 acres of pine barrens ecosystems contained in privately owned vacant land within the core area (less the very limited percentage that will be allowed to be cleared for to permitted uses along roadways) which include the following community types:

Dwarf pine plains
Coastal plain Atlantic white cedar swamp
Coastal plain stream
Coastal plain poor fen
Coastal plain pond
Coastal plain pond shore
Pitch pine-oak-heath woodland
Salt panne
Pine barrens shrub swamp
High salt marsh
Low salt marsh
Chestnut oak forest
Pitch pine-oak forest
Red maple-hardwood swamp
Pine barrens vernal pools
Wet pine barrens
Successional old field/Successional shrubland
Cropland/row crops
Mowed lawn/ Mowed lawn with trees
Mowed roadside/pathway

Preservation of these species is vital to the integrity of the Pine Barrens Ecosystem. It should be understood that even the permitted uses that are allowed under the Plan have been designed in a manner to help protect contiguous woodland and habitat within the core area. While any development will result in the removal of some species, new development will only be permitted along developed roadways. It is from these developed roadways that unauthorized parties gain access to the woodland for illegal dumping, which adversely affects both ecological and aesthetic quality. By allowing limited single-family residential development along established roads, access to interior core areas will be deterred by the individual homeowners. Furthermore, this important "policing" function will be provided by the private sector and will help to minimize the burden on the public sector.

Land Use and Zoning

Implementation of the Plan will impact land use and zoning to a great extent. With regard to land use, existing uses will be permitted to remain in the core preservation area. However, with the exception of permitted uses, as described in the chapter of the Plan entitled **THE PINE BARRENS PLAN**, the majority of all other development potential will be either directed away from the core preservation area to receiving areas through

the Pine Barrens Credit Program (see the chapter in the Plan entitled: **THE PINE BARRENS PLAN** for the discussion of the Pine Barrens Credit Program) or reduced through possible acquisition.

As previously described, the most significant permitted use is the development of single-family homes on ten acre parcels along roadways. The development of these units will result in significantly less clearing than estimated for additional housing units under the full build-out scenario (2,728 acres) due to the limitations placed on new residential development (see the chapter in the Plan entitled: **THE PINE BARRENS PLAN** for a discussion of the standards for land use).

Even with the proposed residual uses, the vast majority acres of Pine Barrens land in the core area, that would have been subject to development without the Plan, will now be preserved in perpetuity. Existing zoning districts in the core preservation area will be modified.

A secondary impact that may result from land use and zoning changes in the core area due to the Plan would be a possible decrease in infrastructure needs since the amount of development in this area will be decreased. Therefore the overall costs for infrastructure are anticipated to be significantly less than if the core area was allowed to be developed at current zoning without the Plan requirements. Another secondary and also long term impact that would occur from the Plan's impact on land use and zoning would be the preservation and management of large tracts of open land areas within the core area that are required for the protection and perpetuation of pine barren ecosystems (see also discussion under ecological impacts in the core).

Land Protection Mechanisms

In order to appropriately manage the land to be preserved in the core area, various land management techniques will be employed that are specified in the chapter of the Plan entitled: **THE PINE BARRENS PLAN**. These management tools are inherently designed to protect land within the core preservation area.

Fire management, while useful in maintaining pine barrens, is a controversial tool which requires detailed and specific studies. In recognition of this, the Plan recommends the preparation of a separate Fire Management Plan. The Fire Management Plan, once prepared, will include an assessment of environmental impacts.

Project Review Process

The project review process described in the Plan (see the chapter of the plan entitled: **THE PINE BARRENS PLAN**) will apply to the development of permitted uses in the core preservation area since the core is a designated critical resource area and therefore is under jurisdiction of the Central Pine Barrens Joint Planning and Policy Commission. The project review process will have an overall beneficial impact on the core area by requiring projects within this critical resource area to be evaluated according to requirements specified in that chapter of the Plan.

Demographics

Adoption of the Plan will not significantly affect existing demographic characteristics within the core preservation area. Uses currently existing will be permitted to remain. However, the permitted uses will add a small number of additional residential units to the core area. It is anticipated that the additional number of units and population would be significantly less than estimated for units under the full build-out scenario for the core area (an additional 3,659 housing units and 9,879 persons) since the actual number of residential units that will be allowed to be built is very limited due to the development criteria imposed under this Plan (see the

chapter in the Plan entitled: **THE PINE BARRENS PLAN**). The implementation of the Plan will "displace" potential future population growth within the core area to areas outside of the core through the Pine Barrens Credit Program.

Community Services

With the exception of school districts and fire departments, no significant adverse impact on community services is anticipated to result from the implementation of the Plan. Potential impacts that may occur in the long term for school districts in the core area may include changes in the future enrollment patterns due to the cessation of development in the core area. There may also be potential financial concerns for school districts that may have invested in capital improvements for expansions based on projected future growth.

Potential economic impacts on school districts, infrastructure capacities, tax revenue and other community services will be discussed in the **Economic Impact Analysis** to be prepared by the Harriman School, the State University at Stony Brook that is anticipated to be completed in August 1994. A preliminary background assessment of existing economic conditions for community services is provided in Chapter VI. of the Plan (**Economic Impact Analysis**).

The greatest potential impact on fire departments would result from fire management activities in the core preservation area. However, as stated in the chapter of the Plan entitled: **THE PINE BARRENS PLAN**, a separate Fire Management Plan, with associated analyses, will be required prior to implementation of a Fire Management program. The fire departments serving the core preservation area will be active participants in the preparation of the Fire Management Plan in an effort to mitigate impacts on this community service to the maximum extent practicable. That chapter of the Plan also contains land management recommendations for public and private land within the core that includes a discussion of enforcement, agency coordination and staffing requirements. Therefore the Plan will have an overall beneficial impact on land management in the core area through its provisions specified for land management in that chapter of the Plan.

Cultural Resources

Implementation of the proposed Plan will not adversely affect documented or suspected cultural resources in the core preservation area. As permitted uses are only allowed along roadways, it is not anticipated that this limited level of development would cause an adverse effect on cultural resources. Long term impacts of the Plan on cultural resources would be the protection of these resources in the core area that is designated for preservation in perpetuity by the Plan.

Scenic Resources

The chapter of the Plan entitled: **THE CENTRAL PINE BARRENS TODAY,** contains a section that identifies numerous important scenic resources within the core preservation area. The maintenance of these resources within the core preserve is a very important public benefit, one which was stated as part of the legislative intent of the Long Island Pine Barrens Protection Act. Comparable expanses of natural landscape are now gone from the remainder of Long Island. Any reduction in size, or interruption of unbroken vistas, severely compromises this public visual amenity. The Plan includes management recommendations and strategies for scenic resources in the chapter of the Plan entitled: **THE PINE BARRENS PLAN** that will assist in the proper management and protection of these resources.

The implementation of the Plan will have an overall beneficial impact on scenic resources by redirecting development away form the core area and these resources and by reducing a portion of the development by possible land acquisition mechanisms.

Scenic resources often contain rare and unusual ecological communities that contribute to the "scenic" quality of the resource. These resources are also often associated with waterbodies that may contain fragile wetland communities. A secondary impact that would result from the Plan's protection of these resources would be the protection of these ecological communities. Long term impacts of the Plan on scenic resources would be beneficial since these areas would be protected in the core area that is designated for preservation in perpetuity.

Economics

An economic impact analysis that will evaluate the financial impact of the Plan's components on the core, compatible growth area and areas outside of the Central Pine Barrens for the three towns (Brookhaven, Southampton and Riverhead) will be prepared as a separate report from this DGEIS by the Harriman School, the State University at Stony Brook. The economic impact analysis is anticipated to be completed in August 1994. A preliminary background assessment of existing economic conditions for community services is provided in Chapter VI. of the Plan (**Economic Impact Analysis**). The final economic report will appear as a chapter in the Plan and will provide an analysis of the following elements for the core area:

Costs, both public and private, of acquisitions and the transfer of development rights in the core.

Sources of Revenue for acquisitions and the Pine Barrens Credit Program

Taxation

Land Values

School Districts and other affected special districts and services

Present and future demand for housing, industrial and commercial facilities, etc.

Agriculture and Horticulture

Population growth and distribution (Overlap with Demographics)

Tourism

Avoided costs

In addition it will evaluate economic impacts that will result from the core area sending districts (Pine Barren Credit Program) for the following:

Taxation

School Districts and other affected districts and services

Present and future employment

Costs, both public and private (e.g., maintenance of public preserves, recreation areas, etc.)

Utilities and infrastructure

Present and future demand for housing, industrial and commercial facilities, etc.

Population growth and distribution

Agriculture and Horticulture

Tourism

Avoided costs

Compatible Growth Area

This section provides a description of the impacts on the Compatible Growth Area (CGA) that would be expected as a result of the adoption of the plan. It deals with the privately held vacant land within the CGA that would be developed under current zoning minus the proposed sending areas as recommended by the Ecology Committee. According to the plan, there are approximately 10,094 acres of vacant land within the Town of Brookhaven, 617 acres in Riverhead Town, and 1,794 acres in Southampton Town, within the CGA. Additionally, 333 acres in Brookhaven, 2,526 acres in Riverhead, and 1,273 acres in Southampton are considered partially within the Core and Compatible Growth Area, as shown in the table below that is entitled: Vacant Land Privately Owned in the Compatible Growth Area and Partially within the Core and Compatible Growth Area. The Land Use section of the plan further goes on to elaborate that based on existing zoning of privately owned parcels within the CGA and partially within the Core and CGA, approximately 5,191 to 5,314 additional residential units can be constructed in the Town of Brookhaven, 103 to 161 in the Town of Riverhead, and 1,022 to 1,856 in the Town of Southampton. In addition, approximately 1,707 acres in the Town of Brookhaven, 2,946 acres in Riverhead Town, and 52 acres in the Town of Southampton can possibly be built out for commercial and industrial purposes.

Figure 7.5 Vacant Land Privately Owned in the Compatible Growth Area and Partially within the Core and Compatible Growth Area

Area in the Central Pine Barrens	Brookhaven	Riverhead	Southampton
Compatible Growth Area (CGA)	10,094	617	1,794
Core and CGA	333	2,526	1,273

According to the plan, development within the CGA will be subject to the **Standards for Land Use** as contained in the **Plan Implementation** section. Those standards clearly delineate the environmental criteria and policies with respect to water resources, wetlands and surface waters, ecological resources, land resources,

coordinated planning design, open space management, agricultural and horticultural, commercial and industrial development, and transportation, that development within the CGA must meet.

Geology

The plan calls for identification and mapping of critical resource areas, including rare or valuable geological formations, which are of regional or state-wide significance. The unique geological formations as identified in the **Natural Environment and Critical Resources** section of the plan include kettleholes and kames. Such areas were considered as part of the criteria used by the Ecology Committee in determining critical resource areas within the CGA. In addition, the **Standards for Land Use** state that all land clearing and construction must be confined to sites where slopes are no greater than 15%. Where development takes place in steeply-sloped areas, erosion and sediment control plans are required.

Anticipated excavation activities include those required for the installation of roads, foundations, water lines, drainage and sanitary facilities associated with the development of residential, commercial and industrial uses in the CGA. These activities are not extensive and, as such, are not expected to result in a significant adverse impact on geology.

Soils

The **Natural Environment and Critical Resources: Soils Overview** Section of the plan identifies the various soil types within the CGA. Critical soil resources in the CGA including prime agricultural soils, are indicated on the map showing land suitable for agricultural use. The **Standards for Land Use** sets forth the following policies and minimum standards with respect to soils:

1. A certification of non-development shall be required to be obtained by the applicant where it is proposed to commence or expand agricultural or horticultural uses. Since there may be some adverse impacts associated with these uses, the standards below shall be used to guide deliberations.

2. For parcels that are entirely in active agriculture or horticulture and within Hydrogeologic Zones III and V and contain prime agricultural soils, the clustering of structures shall be recommended and may be required on the poorest soils, with the remaining prime soil areas retained for agricultural or horticultural use of a nature that shall cause minimal impact on the groundwater quality.

3. For those parcels which are not completely devoted to agricultural and horticultural uses a balance shall be recommended between the continuation of the agricultural and horticultural uses and the protection of critical resource areas.

4. Reclaiming of areas formerly used for agriculture and horticulture is acceptable, provided no local tree cutting or vegetation protection ordinances are violated, and that best management practices for the use of fertilizer or pesticide, including but not limited to Integrated Pest Management, are employed.

Based on the above standards and policies, impacts to prime agricultural soils within the CGA should be minimized.

Topography

The general topographic features in the Compatible Growth Area will be maintained. Any future development within this area will modify the surface landscape to some extent, however, as noted previously, unique geological features as well as areas with slopes greater than 15% will be preserved. Therefore, no significant adverse impact to topographic features is anticipated in the CGA, since prominent topographic features, such as hills and swales, will be retained.

Water Resources

Hydrogeology

The overall hydrogeology as described in the sections on Geology and Hydrology within the plan will not be significantly impacted by the proposed build out pursuant to existing zoning within the CGA. Sewage generated by land use within that area will be discharged back to groundwater either through septic systems or sewage treatment plants, therefore not altering the hydrologic balance of the aquifers. This is not the case in Nassau County or the Southwest Sewer District where millions of gallons generated by various land uses are discharged to the Atlantic Ocean or Long Island Sound and adjacent bays and harbors. Some water will be lost as a result of irrigation due to evapotranspiration. Since Suffolk County does not have a water quality problem, the resulting loss from irrigation is not thought to pose a significant impact.

Hydrology

The **Standards for Land Use** as called for within the plan, as well as the Hydrology Committee conclusions and recommendations, deal with minimizing impacts from development on water resources. Clearly development within the CGA will impact the underlying groundwater resources, however, the standards within the plan state that development proposals shall not exceed the nitrogen loading factors of 6 ppm on the site and that all proposals shall conform to Article VI of the Suffolk County Sanitary Code. Sewage treatment plants will be recommended for subdivisions and Hydrogeologic Zones III, V and VI, where the proposed overall density is greater than one unit per acre and the size of the proposed development justifies their use. In addition, the policies and minimal standards require that development plans shall place no more than 15% of the entire site in turf or fertilizer dependent vegetation. Furthermore, development proposals shall not contain a land use or activity which exceeds or poses a very strong scientific probability based upon documented experience to exceed, the New York State or Federal standards for any recognized drinking water contaminant.

The minimum standards state that the location of nearby public supply wells shall be considered in all applications involving significant discharges to groundwater and consultation will be made with the appropriate water purveyor or well operator. The Suffolk County Department of Health Services' guidelines for private wells shall be used for well head protection. With respect to agricultural and horticultural uses, the policies and standards indicate that best management practices for the use of fertilizers or pesticides, including but not limited to integrated best management, shall be encouraged and employed wherever possible.

Based upon the above standards and policies, impacts on the groundwater resources from development within the CGA will be kept to a minimum and is not thought to be significant.

Surface Water and Wetland Quality

With regard to surface and wetland water quality there is very little information available on water quality conditions in specific wetlands and surface waters within the Compatible Growth Area. Under natural conditions these systems are probably nutrient deficient with nitrogen and phosphorus being the chemicals that

limit productivity. The plan states that present day water quality in these systems can be expected to reflect such inputs as atmospheric pollution and stormwater runoff. Nitrogen from fertilizers can be introduced into these systems by runoff and groundwater, while phosphorus can be derived mostly from runoff since phosphate is relatively immobile in groundwater.

The **Standards for Land Use** as presented in the plan under **Wetlands and Surface Waters** specify that development proposals for sites containing or abutting tidal wetlands, freshwater wetlands and surface waters, must be separated by a minimum 100 ft. nondisturbance buffer area. In addition a 100 ft. setback shall be required from documented areas of seasonal high groundwater water less than 4 ft. from the surface, or further setbacks may be required where the 100 ft. nondisturbance buffer area is insufficient to protect wetlands.

Runoff from development into surface waters and wetlands can also be a problem, therefore the policies and minimum standards with respect to runoff delineate that development plans shall provide that all stormwater runoff originating from development on the property shall be recharged on site. The plan further encourages that natural swales and depressions and/or the installation of perforated pipe, vertical drains or drywells in place of standard recharge basins be used where appropriate.

The Ecology Committee reviewed all land within the CGA with respect to surface waters and wetlands, and where large wetland systems and surface waters existed on vacant undeveloped property, made recommendations that they be designated as Critical Resource Areas (CRAs) and preserved. (See the section of the plan entitled **Critical Resource Areas.** It was determined by the Ecology Committee that small wetland areas not containing rare elements can be adequately protected under New York State and Town wetland laws. Furthermore, the Hydrology Committee recommended that in order to reduce nutrient, sediment and pollutant loadings to surface waters, structural and nonstructural mitigation measures should be implemented for all existing and future significant direct water discharges to surface waters within the Central Pine Barrens Area, i.e., where runoff is derived from major roads, golf courses, agricultural fields, horse farms, etc.

Based on the above standards, policies and recommendations, it appears that impacts resulting from development within the CGA will be insignificant. Provisions have been made for the adequate protection of surface waters and wetlands from future development, as well as recommending that existing discharges be reduced from existing development.

Air Resources and Noise

The construction of residential, commercial and industrial uses in the CGA will result in short-term and long-term increases in air pollution emissions as well as increased noise. The primary short-term source of potential emissions is from fugitive dust resulting from site clearing and grading operations for individual developments. Fugitive dust consists of soil particles which become airborne either when disturbed by heavy equipment operations at the construction site, or through wind erosion of exposed soil after ground cover is removed. To a lesser extent, other construction related air emissions will arise from the operation of construction equipment at the locations where development is being constructed, as well as from vehicle travel by workers to and from the sites. All of these stated construction related air quality impacts will be of relatively short duration. Since development within the CGA will not take place all at once, but be done over many years, the impacts on ambient air quality from such operations are expected to be negligible.

After completion of various projects, increases in traffic volume associated with the various uses will result with an increase in levels of carbon monoxide, particulates and other vehicle emissions. Since Suffolk County has been designated as a non-attainment air quality area under the Clean Air Act, increased emissions may be

significant, however, it is assumed that all new equipment and vehicles used within the CGA will meet the Clean Air Act standards as set forth by the Environmental Protection Agency. In addition, it should be noted that these emissions will take place with or without the adoption of the plan, since the area is currently zoned for those uses already.

Construction of residential, commercial and industrial uses in the CGA will also cause increased levels of noise due to the movement of heavy equipment and other construction related activities, as well as the operation of machinery used in every day activities. All machines used within the CGA will meet current noise standards and will result with or without the adoption of the plan, as the CGA is built out under current zoning.

Ecology

The Ecology Committee reviewed all potentially developable lands in the CGA. A map showing the various ecological communities within the CGA, as well as in the entire Central Pine Barrens Area, is found in the **Natural Environmental and Critical Resources** section of the plan. That map delineates surface waters, wetlands, pitch pine forest, oak forest, plantations, old fields, grass and landscaped areas, agricultural fields, and disturbed areas, as well as rare natural communities as contains in the New York State Natural Heritage Program.

Based on review of natural habitats within the CGA, the Ecology Committee designated 32 critical resource areas within that zone, which are elaborated on in the **Critical Resource Areas** section of the plan. In order to determine whether an area should be designated as a critical resource area and protected, the Committee considered the following ecological criteria: size, proximity to the Core, rare elements, fragmentation and linkage corridors, surrounding land use, wetlands, hydrology and water quality, as well as soil type, slopes and depth to groundwater. All critical resource areas were designated for preservation. Four of the areas comprising approximately 150 acres within the CGA, were recommended to be preserved by sending the development rights to receiving areas elsewhere. The remaining 28 parcels preserved the sensitive environmental aspects of the parcels through clustering development away from such critical resource areas.

The **Standards for Land Use** as set forth in the plan also delineate total site clearance for lots, roads, drainage and other improvements that result from development in the CGA. Taking the clearance standards as set forth within the plan and applying them to the vacant privately-owned lands within the CGA zoned for various purposes, it is assumed that future build out within the CGA will require the clearing of natural vegetation of approximately 4,950 to 5,067 acres in Brookhaven Town, 392 to 2,029 acres in the Town of Riverhead, and 679 to 1,168 acres in the Town of Southampton.

Therefore, the plan calls for the preservation of critical resource areas and at the same time, would not allow for any increase in clearing as currently set forth under existing zoning in the CGA.

Land Use and Zoning

Implementation of the plan will not impact land use and zoning to a great extent in the CGA. The current residential, commercial and industrial zoning designations already exist and the plan does not appreciably change them, except for those areas designated to receive development credits from the Core area. Impacts resulting from the receiving areas are discussed under the section on **Impacts on Receiving Areas** of this DGEIS.

Demographics

Adoption of the plan will not significantly affect existing demographic characteristics or trends within the CGA. Uses currently existing will be permitted to remain and future uses for the most part have already been set by existing zoning within each individual town's master plan. As stated in the **Population** portion of the plan, the 1990 Census indicated that within the CGA the population was 47,392 in Brookhaven, 957 in Riverhead, and 4,946 in Southampton, for a total of 53,295 people. Population will increase as land within the CGA is developed with additional residential units. The plan will not significantly increase the population within the CGA over and above existing zoning, not including the receiving areas.

Infrastructure

Development within the CGA, not including receiving areas, as set forth under existing zoning, as well as the plan, will require additions to the road, public water, and possibly sewer systems. These are currently discussed within the **Existing Environmental Conditions** part of the plan. Since the plan does not call for increasing development within the CGA except for the receiving areas, it is not expected that increases for roads, water and sewage treatment over and above that required under existing town master plans will be needed.

Community Services

As residential, commercial and industrial projects are built out within the CGA over time additional services will be required for schools, fire districts, police and government. This will require additional funding on the part of government. The plan, however, does not appreciable change development within the CGA from that which has already been set forth in the local town master plans, with the exception of receiving zones which are discussed in a separate section of the DGEIS.

Scenic, Historic and Cultural Resources

Implementation of the proposed plan will not adversely affect documented and potential scenic, historic and cultural resources in the CGA. The Long Island Pine Barrens Protection Act of 1993 specifies that the plan shall consider and protect unique scenic, cultural or historic features. The plan includes an inventory of many of these resources and separate inventories of these items may exist in local, state, county, federal, or private inventories. The standards and policies for land use as set forth in the plan states that the Commission's policy is to protect and enhance those landscape-based features which define it, provide for its distinction from neighboring communities, provide for natural areas among the communities which complement the protection of the Pine Barrens ecosystem, and contribute to a regional diversity both natural and cultural. The plan further calls for that development proposals within the CGA shall account for, review and provide the maximum possible protection for active and passive recreational sites, scenic corridors, roads, vistas and viewpoints, sites of historic or cultural significance, and sensitive archaeological areas. A development proposal may be disapproved if it is determined to have a significant impact on any scenic, historic or cultural resource.

Receiving Areas

The Plan calls for transferring development credits or rights from the core area to receiving areas within the CGA and outside of the CGA. Receiving areas were designated by the various towns as discussed in the **Pine Barrens Credit Program** section of the plan, and include approximately 10,629 acres in the Town of

Brookhaven, 1,574 acres in the Town of Riverhead, and 3,560 acres in the Town of Southampton. (This preliminary information was developed by the Suffolk County Water Authority.) In addition, based on the criteria within the plan, it has been estimated by the Water Authority that the number of Pine Barrens credits available for transfer to receiving areas is 2,250 for the Town of Brookhaven, 220 for the Town of Riverhead, and 1,600 for the Town of Southampton, for a total of 4,070 credits. Credits generated within the Core area of the various towns are to be transferred to receiving areas proposed by the respective towns and not transferred to receiving areas in other towns.

Each credit is equivalent to 300 gallons of sewage and could be used for one residential housing unit, or additional square footage for commercial and industrial purposes, depending upon the use. The amount of additional commercial or industrial square footage varies depending upon the type of use and the yield factors determined by the Suffolk County Department of Health Services.

If the amount of development credits for each town were to be used strictly for residential purposes and spread out evenly over the entire proposed receiving area acreage in each town, it would translate into .21 additional residential units per acre in Brookhaven, .16 additional residential units per acre in Riverhead, and .45 additional residential units per acre in Southampton.

The underlying goals and policies of the plan are to preserve the Core forest preserve area by transferring the development rights to less environmentally sensitive areas (receiving areas) elsewhere. This basically utilizes the cluster planning concept to preserve the sensitive environmental areas, including wetlands and surface waters, rare and endangered species, rare ecological communities as identified in the NYS Natural Heritage Program, steep-sloped areas, unique geological features such as kames and kettleholes, as well as unique cultural resources. Development within the proposed receiving sites will be directed away from such sensitive environmental areas if any exist there. An environmental evaluation of the proposed receiving areas in the various towns is found in the **Environmental Setting** section of this DGEIS. In that section, the receiving sites within the various towns were analyzed as to acreage, existing landuse on site, existing land use surrounding the site, water districts, sewer districts, proposed open space acquisitions, Superfund or NYS inactive waste disposal sites, flood plains, NYS Wild, Scenic and Recreational River Corridor, NYS fresh and tidal wetlands, soils and slopes, depth to groundwater less than 4 feet, and rare elements on site. Following are the recommendations resulting from the environmental evaluation of the proposed receiving areas in the various towns.

Analysis of using the 4,070 development credits exclusively for residential purposes indicates, based on existing clearance standards as derived by the Suffolk County Pine Barrens Review Commission, which appear in the plan's **Standards for Land Use**, that as density increases, the amount of clearance per unit decreases as indicated below.

Residential Zoning Lot Size	Maximum Site Clearance	Clearance/Residential Unit
10,000 s.f.	90%	9,000/unit
15,000 s.f.	70%	10,500/unit
20,000 s.f.	60%	12,000/unit
30,000 s.f.	58%	17,400/unit
40,000 s.f.	57%	22,800/unit
60,000 s.f.	46%	27,600/unit
80,000 s.f.	35%	28,800/unit
120,000 s.f.	30%	36,000/unit
160,000-200,000 s.f.	4-5+ acres	40,000-50,000/unit

Taking the clearance standards together with the residential dwelling units yields for subdivisions found in the 208 Study into consideration with respect to the 4,070 development credits, it is clear that building homes on larger lots will develop significantly greater acreage and clear more land in the Pine Barrens. This is indicated in the following table.

Required Acreage and Potential Clearance for 4,070 Development Credits at Various Residential Lot Sizes

Zoning Lot Size	Required Site Size	Allowed Site Clearance
20,000 s.f.	2,545 acres	2,290 acres
40,000 s.f.	5,088 acres	2,900 acres
80,000 s.f.	10,178 acres	3,562 acres
120,000 s.f.	15,074 acres	4,522 acres
160,000 s.f.	20,350 acres	6,105 acres
200,000 s.f.	25,438 acres	6,360 acres

Development of the 4,070 credits on half acre lots would require a 2,545 acre site with the clearance of 2,290 acres for houses, roads and drainage, whereas 5 acre lots would require a 25,438 acre site with the allowed clearance of 6,360 acres. It is evident that as lot size increases so does the amount of clearance per residential unit, as well as the amounts of roads and drainage, as well as electric, gas and water pipeline requirements.

If density exceeds 20,000 sq. ft. per residential unit, then sewage treatment plants will be required in order to protect the groundwater resources. This is an added expense and would require additional resources over and above that required in a conventional subdivision using in-ground septic systems.

Development credits can also be used to increase commercial and industrial build out. Since commercial and industrial uses are at a greater density than residential development, it can be anticipated that less roads and utilities, together with less clearance, would be required for such development. In addition, the Town of Brookhaven receiving area as identified by a Mixed Use PDD would require 35% open space.

Transfer of Pine Barrens development credits to receiving areas in the CGA and outside the CGA can result in less environmental impact providing the receiving areas do not contain any sensitive environmental features and the appropriate sewage treatment methods are used in order to minimize impacts on groundwater resources.

Increased traffic resulting from increased density would have to be analyzed in such areas and the necessary infrastructure improvements to roads would have to be made to minimize any potential traffic impacts.

D. General Mitigation Measures

The Central Pine Barrens Comprehensive Land Use Plan as called for under the **Central Pine Barrens Protection Act of 1993**, for the most part, is an environmental plan designed to protect the Core and sensitive environmental areas within the Compatible Growth Area. Being an environmental plan, many general mitigation measures have been incorporated into the planning process in order to minimize environmental impacts in the Central Pine Barrens area. The following is a listing of mitigation measures for the Core area, CGA, and receiving areas.

Core Area

Within the Core area, the following mitigation measures have been made a part of the plan:

1. The Core is considered a critical resource area and within the plan its preservation is called for. As such, the vast majority of the privately-owned undeveloped vacant property within the Core, minus the permitted uses called for within the plan, is proposed for preservation.

2. Being a critical resource area, any proposed development within the Core is subject to the review and standards as set forth by the Central Pine Barrens Joint Planning and Policy Commission. Under the plan, any development allowed within the Core would be subject to strict environmental review by the Commission which would allow only development which is permitted under the plan and meets all environmental requirements, or subject to extreme hardship.

3. The plan established a Pine Barrens Credit Program where development credits are transferred from undeveloped open space within the Core to designated receiving areas within the CGA and adjacent areas within the various towns. Each town absorbs its own development credits generated by the Core area under its jurisdiction.

Compatible Growth Area

The plan establishes minimum standards, performance specifications and requirements which local municipalities are required to incorporate into local land use and development, review procedures, ordinances and laws, with respect to proposed development within the CGA. They also comprise the policies and standards which the Commission itself will apply to those projects which it directly reviews within the CGA. The various policies and minimum standards as set forth by the Commission that apply to the CGA are as follows:

1. Water Resources and Fertilizer

- Development proposals shall not exceed the nitrogen loading factor of 6 ppm on the site.
- All development proposals shall conform to Article 6 of the Suffolk County Sanitary Code.

- Sewage treatment plants shall be recommended for subdivisions in Hydrogeologic Zones II, V, and VI where the proposed overall density is greater than 1 unit per acre and the size of the proposed development justifies their use.

- In specific applications or on specific sites for which available scientific date indicates that a lower level of nitrate-nitrogen discharges is necessary in order to protect the ecological integrity of a pine barrens habitat on or immediately adjacent to a site, such lower standard may be imposed.

- It is the policy of the Commission to discourage extensive establishment of turf and fertilizer dependent non-native vegetation. Development plans shall place no more than 15% of each lot in vegetation requiring fertilization or 15% of the entire site for attached residential, commercial or industrial development. Indigenous vegetation species appropriate to the Central Pine Barrens area are recommended to be planted in order to cut down on fertilizer use.

- Development proposals shall not contain a land use or activity which exceeds, or poses a very strong scientific probability based upon documented experience to exceed, the New York State or federal standards for any recognized drinking water contaminant.

- Where relevant, and in specific applications or on specific sites for which available scientific data indicates that a particular maximum discharge level of a contaminant is necessary in order to protect the ecological integrity of a Pine Barrens habitat on or immediately adjacent to a site, such lower standard may be imposed.

- The location of nearby public supply wells shall be considered in all applications involving significant discharges to groundwater, and consultation made with the appropriate water purveyor or well operator.

- The Suffolk County Department of Health Services' guidelines for private wells shall be used for wellhead protection.

- When available and deemed relevant, the results of groundwater flow, contaminant transport, or other types of groundwater modeling around relevant public supply wells shall be considered. If it can be demonstrated that a project as proposed will have a significant impact on water quality at a public well site, appropriate modifications to the project shall be made prior to any approval or conditional approval.

2. Wetlands and Surface Waters

- Development proposals for sites containing or abutting freshwater wetlands must be separated by a minimum 100 foot non-disturbance buffer area (measured horizontally from the wetland edge as mapped by the New York State Department of Environmental Conservation, field delineation or local ordinance), or further where the 100 foot non-disturbance area is insufficient to protect the tidal wetlands.

- Buffer areas shall be delineated on the plan, and covenants may be imposed to protect these areas as deemed necessary.

- Setbacks shall be required from documented areas of seasonal high groundwater less than 4 feet from the surface, or further setbacks may be required where the 100 foot non-disturbance buffer area is insufficient to protect the wetlands.

- Development proposals where tidal wetlands exist must be protected by a minimum 100 foot non-disturbance area (measured horizontally from the identified wetland edge), or a further setback where the 100 foot non-disturbance area is insufficient to protect the tidal wetlands.

- Development proposals containing or abutting surface waters must be separated by a 100 foot non-disturbance buffer (measured horizontally from the water or wetland edge, whichever is more protective).

- Setbacks shall be required from documented seasonal surface waters, or further setbacks may be required where the 100 foot non-disturbance buffer is insufficient to protect the integrity of a surface waterbody in terms of its quality, quantity, or natural function.

3. Runoff

- The Commission advocates the use of natural recharge areas and/or drainage system designs that shall cause minimum disturbance of the site.

- Large excavated recharge basins shall only be approved where the use of natural swales and depressions and/or the installation of perforated pipe, vertical drains or dry wells is not practicable.

- Development plans shall provide that all stormwater runoff originating from development on the property shall be recharged on site.

- Ponds shall only be created in place of recharge basins, not for aesthetic purposes, and they shall be constructed and planted to create a shallow marsh habitat to filter runoff to the maximum extent possible. A management plan shall be developed for each such pond, which requires minimal augmentation and attempts to balance evaporation with size limitation of the pond.

- Construction within natural swales and depressions where runoff and recharge naturally occurs shall be approved only if the construction enhances the natural drainage and recharge functions.

4. Ecological Resources

- It is the policy to strictly limit the clearing of native vegetation. Development proposals shall therefore not exceed the clearance standards as contained in the plan. These percentages shall be taken over the total site inclusive of roads, building sites and drainage structures. The clearance standard that would be applied to a project site if developed under the existing residential zoning category may be applied if the proposal involves multi-family units, attached housing, clustering or modified lot designs.

- Applications for subdivisions shall contain calculations for clearing, and these limits shall become part of the filed map.

- o Subdivision and site design shall support preservation of natural vegetation in large unbroken blocks that allow contiguous open spaces to be established when adjacent parcels are developed.

- o Applications shall utilize, to the maximum extent feasible, the recommended planting suggestions, and shall avoid the use of nonnative species. Exceptions to this shall only be made for sites which have little or no remaining native vegetation in the first place.

- o Development proposals shall not have a significant negative impact on a habitat essential to those species identified by New York State maintained lists as rare, endangered, or threatened, nor on natural communities classified by the New York State Natural Heritage Program as G1, G2, G3 or S1, S2 or S3, nor on any federally listed endangered or threatened species.

5. Land Resources

- o Clearing envelopes shall be drawn for lots within a subdivision containing slopes greater than 10 percent. These envelopes shall be located on the lots to minimize the disturbance of those slopes to the greatest extent possible.

- o Construction of homes, roadways and private driveways on slopes greater than 10% may be approved only if technical review shows that sufficient care has been taken in the design of stabilization measures, erosion control practices and structures so as to mitigate any negative environmental impacts.

- o Project review would be facilitated if submissions contain a slope analysis showing slopes 0-10%, 11-15% and 15% or greater. In areas with steep slopes, slope analysis maps shall be required. This can be done with cross hatching or shading on the site plan for the appropriate areas.

- o Erosion and sediment control plans shall be required in steeply sloped areas.

6. Clustering on a Project Site

- o All developments for subdivisions of five or more lots shall either submit a cluster map or an explanation as to why such a plan is not feasible.

- o It is the policy of the Commission that open space resulting from clustering be protected through the use of covenants.

- o Clustering can be used in site planning to minimize disturbance of sensitive portions of the site. The following shall be used as initial guidelines in clustering residential subdivisions, and shall be deviated from only as site conditions permit:

    1. Wooded Parcel with slopes less than 10%. The development on a parcel, if adjacent to other parcels to be reviewed or adjacent to existing dedicated open space, shall be clustered to take advantage of increasing natural open space, unless such clustering would violate, or defeat the spirit of, one or more other standards.

2. Wooded Parcel with more than 50% of parcel having slopes less than 10% and the remainder of the parcel having slopes greater than 10%. Lots shall be clustered on slopes less than 10%, unless the conditions noted in 1 above occur.

3. Wooded or Field with slopes greater than 10% throughout the site. Lots shall be clustered to keep building envelopes (per town zoning) on slopes less than 10%, unless the conditions noted in 1 above occur.

- Roads and driveways shall be designed to minimize the traversing of slopes of greater than 10% and to minimize cuts and fills.

- Details of retaining walls and erosion control structures shall be provided for roads and driveways which transverse slopes greater than 10%

- No retaining wall or erosion control structure shall be constructed beyond the right of way or 8 feet beyond the edge of roadway whichever is less.

- For private driveways the limits of retaining walls and erosion control structures shall conform to the clearing limits set forth in these standards.

- Any subdivision applications which contain building envelopes with slopes greater than 10% or which, based on technical review, contain extensive use of retaining walls for the roadway system, shall analyze the impact of such designs on future erosion problems.

- An application may be disapproved where a tighter cluster than proposed is possible and preferable from a technical standpoint.

7. Coordinated Design

- It is the policy of the Commission to review all development proposals for individual parcels in light of the potential or existing layout of all adjacent parcels to ensure that the designs are coordinated and that minimal clearing and maximum open space preservation can be achieved. The owners of parcels are urged to consult with the town planning personnel with regard to this while designing their subdivisions.

8. Open Space Management

- It may be required that proposed open space be protected with covenants that specify proper restrictions on its use and proper contingencies for its future management.

9. Agriculture and Horticulture

- A certification of non-development shall be required to be obtained by the applicant where it is proposed to commence or expand agricultural or horticultural uses. Since there may be some adverse impacts associated with these uses, the standards below shall be used to guide deliberations.

- For parcels that are entirely in active agriculture or horticulture and within Hydrogeologic Zones III and V and contain prime agricultural soils, the clustering of structures shall be recommended and may

be required on the poorest soils, with the remaining prime soil areas retained for agricultural or horticultural use of a nature that shall cause minimal impact on the groundwater quality.

- o For those parcels which are not completely devoted to agricultural and horticultural uses a balance shall be recommended between the continuation of the agricultural and horticultural uses and the protection of critical resource areas.

- o Reclaiming of areas formerly used for agriculture and horticulture is acceptable, provided no local tree cutting or vegetation protection ordinances are violated, and that best management practices for the use of fertilizer or pesticide, including but not limited to Integrated Pest Management, are employed.

10. Scenic, Historic and Cultural Resources

- o Development proposals shall account for, review, and provide the maximum possible protection for:

    1. established recreation and educational trails and trail corridors, including but not limited to those trail corridors inventoried and noted elsewhere in this plan;

    2. active recreation sites (both existing and those proposed as part of a development);

    3. scenic corridors, roads, vistas and viewpoints, and those scenic resources inventoried elsewhere in this plan;

    4. sites of historical or cultural significance, including historic districts, sites on the State or National Register of Historic Places, and historic structures and landmarks identified locally or listed on the State or National Register of Historic Places; and

    5. sensitive archaeological areas as identified by the New York State Office of Historic Preservation.

- o Development proposals shall note any of the above within a 500 foot radius of the outside perimeter of the project site, including any project parcels which are physically separate from the bulk of the proposed development area. A development proposal may be disapproved if, in its current form, it may have a significant negative impact on any of the above resources.

- o Protection measures for scenic and recreational resources shall include, but not be limited to, retention of visually shielding natural buffers, replacement of degraded or removed natural visual buffers (using native species), use of signs which are in keeping in both style and scale with the community character, and similar measures.

11. Commercial and Industrial Development

- o The development of vacant commercial and industrial sites within the Compatible Growth Area in less intensive and less potentially hazardous uses shall be encouraged.

- o All commercial and industrial development applications must comply with the provisions of Articles 7 and 12 of the Suffolk County Sanitary Code.

- o Commercial and industrial applications shall be preferred in areas where appropriate infrastructure, including but not limited to personal and commercial transportation facilities, is either existing or would be appropriate for concentrating trade and employment activities.

12. Transportation

- o The Commission shall encourage (where standards contained herein do not contravene) the submittal of transportation-efficient designs for sites and larger areas.

13. Critical Resource Areas

- o The Ecology Committee reviewed all land within the CGA and came up with 32 properties that should be designated as critical resource areas and preserved because they are unique and sensitive environmental areas that would be significantly impacted by development.

Receiving Areas

Within the areas of each town designated as receiving areas, the following mitigation measures are to be incorporated:

1. All development within receiving areas shall be in conformance with Articles 6, 7 and 12 of the Suffolk County Sanitary Code. Overall developmental build out will be at a density of no more than 600 gallons of sewage per acre. If the threshold of 600 gallons per acre is exceeded, then a sewage treatment plant is required.

2. Development within receiving areas will not take place in any sensitive environmental areas as set forth in the plan, such as areas with unique geologic features, i.e., kames and kettleholes, 100 ft. from wetlands and surface waters, steep-sloped areas greater than 15%, areas containing rare and endangered species, areas of unique cultural or historic value.

E. Alternatives to the Plan

Alternative 1: No Action

According to analysis of the Central Pine Barrens area, it has been estimated that approximately 15,932 acres in the Town of Brookhaven, 3,454 acres in the Town of Riverhead, and 7,505 acres in the Town of Southampton, are privately-owned, vacant and undeveloped. If this vacant privately-owned property is developed under existing zoning, it has been estimated that an additional 10,286 residential housing units could be built. In addition, approximately 1,751 acres in the Town of Brookhaven, 2,987 acres in the Town of Riverhead, and 801 acres in the Town of Southampton, for a total of 5,539 acres of commercial and industrial zoned privately-owned vacant property could be anticipated to be built out under existing zoning. All development would have to conform to Articles 6, 7 and 12 of the Suffolk County Sanitary Code.

In addition, using existing clearance standards as established by the Suffolk County Pine Barrens Commission, it can be estimated that approximately 6,807 acres in the Town of Brookhaven, 2,153 acres in the Town of Riverhead, and 2,634 acres in the Town of Southampton, for a total of 11,594 acres, would be cleared in the future under existing zoning. New York State and Town environmental protection ordinances would be

enforced with respect to individual site development, therefore wetlands and surface waters, rare and endangered species, steep slopes, unique cultural areas, and, in some cases, soils, would be preserved.

The construction of residential, commercial and industrial development within the Central Pine Barrens Area, as currently zoned, will require associated roads; water, electric, gas and telephone lines; sewage facilities (both in-ground septic systems and possible sewage treatment plants); as well as necessary community services including educational, police, and fire protection, health care, and public recreational facilities to be built. Under existing conditions, development will be spread out over the entire Central Pine Barrens Area including both the Core and CGA.

Alternative 2: ***Long Island Comprehensive Special Groundwater Protection Area (SGPA) Plan***

The area that is the topic of the current Pine Barrens Plan is the same area that was discussed in the Long Island Comprehensive Special Groundwater Protection Area Plan and was named the Western Sector, the Southeast Sector, and the Northeast Sector of the Central Suffolk SGPA (Special Groundwater Protection Area) which covers parts of Brookhaven Town, Southampton Town, and Riverhead Town. This plan does not use the T.D.R. (transference of development rights) strategy as much as the current Pine Barrens Plan does in order to preserve areas in the Pine Barrens. Instead it mainly uses acquisition, replatting, and cluster development to preserve these areas.

Most of the zoning in the Pine Barrens area is zoned for low density residential use at lot sizes ranging from one acre to 5 acres/dwelling unit. Most of Brookhaven is zoned at 1, 2, and 5 acres. In Southampton the zoning is 1, 1 1/2, 3, or 5 acres/unit. Riverhead is zoned for 4 acres near Calverton and 1 acre for much of the farmland (Koppelman, 1992). If these areas were all upzoned to 5 acres/unit, with clustering of new developments at 1 acre/unit, 80% of the Pine Barrens land could be preserved, which would then preserve 12745.54 acres of the 15931.93 acres of vacant land in Brookhaven Town, 2753.45 acres of the 3454.33 acres of vacant land in Riverhead Town, and 6004.20 acres of the 7505.25 acres of vacant land in Southampton according to calculations made from the tables of Zoning Designations for Vacant Land in the Central Pine Barrens.

According to the Long Island Comprehensive Special Groundwater Protection Plan, the rezoning of the property and clustering in Brookhaven Town could secure dedicated acreage adjacent to Peconic River Properties, preserve an open pine barrens corridor along the Long Island Expressway, add to some of the holdings in the eastern portion of Manorville, add to the parcel that the County has set aside for a preserve, and provide additional open space. Brookhaven could consider further rezonings as necessary to limit residential development beyond the periphery of already committed areas. A series of acquisitions extending from Rt. 25A on the north to the Long Island Expressway on the south, could protect the water resources of the area. The acquisition of some of these properties when combined with a coordinated clustering of new development would make it possible to create a series of north-south and east-west interconnected public and private properties that could be used as walkway, hiking trails, or for similar types of linear park use. With the acquisition of land around the headwaters of the Peconic River and in the area east of Rt. 111 in Manorville, public lands could form a continuous corridor of open space extending from central Brookhaven through the edge of Riverhead and into the Town of Southampton (Koppelman, 1992).

According to the Long Island Comprehensive Special Groundwater Protection Area Plan, Suffolk County should continue to upgrade, consolidate, and expand sewage collection and treatment within the northwestern portion of the sector (Brookhaven), as well as concentrate commercial and industrial activities to the maximum

extent permitted by existing land uses. If sewering could be extended to serve existing higher density and new development, effluent quality could be assured, and ground water quality would be improved (Koppelman, 1992).

Most of the land in the Southeastern Section (Southampton Portion) of the Central Suffolk SGPA is being preserved by means of major watershed acquisitions according to this plan, but there are also some opportunities for clustering which could secure dedicated acreage adjacent to Peconic River properties, preserve an open pine barrens corridor along the Long Island Expressway and could add to some of the holdings in the eastern portion of Manorville. This clustering also could provide pockets of open space in the more developed portions of Manorville and preserve some wetlands adjacent to State property (Koppelman, 1992).

According to the Long Island Comprehensive Special Groundwater Plan, Suffolk County should establish a Dwarf Pines Preserve to the north and west of the Suffolk County Airport which would constitute part of an open corridor along the south side of Sunrise Hwy. and would compliment the public lands on the north side. The Towns of Brookhaven and Southampton should attempt to acquire the development rights or otherwise preserve the Swan Pond and the Long Island golf clubs. These towns should also facilitate the conversion of obsolete or inappropriately located extractive and industrial properties to residential use and install sewage treatment plants in order to protect the groundwater (Koppelman, 1992).

According to this plan, in the Riverhead portion of the Northeast Sector of the Central Suffolk SGPA, it would be most desirable to transfer the development rights of properties that are surrounded by protected farmland to areas north of Sound Avenue or around the hamlet of Riverhead. Riverhead should provide for the transfer of development rights to non-farm sites outside the SGPA at one dewelling unit per two acres it should require clustering of development on those parcels where T.D.R. is not possible. The acquisition of selected woodland and other non-farm parcels could facilitate watershed preservation and wellhead protection in Riverhead. Also smaller acquisitions in the Town of Riverhead could enhance the already partially protected Peconic River corridor by acquiring areas such as the Canoe Lake area, the unused portion of Camp Wauwepex, and part or all of several small parcels along the Peconic River.

The commercial development in Riverhead could be confined to present locations outside the SGPA, and new business development could be sited at locations outside the SGPA or within the boundaries of existing commercial areas within the SGPA, in order to help maintain the integrity of the agricultural and opens space lands that protect the groundwater and surface waters in this sector (Koppelman, 1992).

Alternative 3: Total Acquisition of All Privately Owned Vacant Parcels in the Core Preservation Area through Direct Purchase

This section describes the alternative to the Plan that would involve the acquisition by direct purchase of all privately owned vacant land in the core area as a means to preserve this area. It should be noted that a total of 32,580 acres of land in the core area is already preserved as public land. This land includes federal, state, and town parks and open space areas in addition to county and town development rights areas and surface waters.

A worst case scenario was used to develop a range of figures for the cost to acquire all of the privately owned vacant land. It is assumed for purposes of this scenario that size of parcel and zoning are not considered. It should be noted however that 91.6% of the privately owned vacant land is residentially zoned. There are many

factors that affect the value of the land being acquired such as whether the property has been subdivided as well as approved and access to road frontage therefore a range of values are provided for the cost of acquiring the privately owned vacant land in the core area.

There is a total of 10,254 acres of privately owned vacant land totally in the core area (source: Suffolk County Water Authority based on Town Assessor data obtained for Brookhaven, Southampton and Riverhead). In addition, there are 58 privately owned vacant parcels that fall within both the core area and compatible growth area that comprise a total of 4,122 acres. An assumption is made for purposes of this scenario that half of this acreage is entirely in the core area. This would bring the total number of acres of privately owned vacant land to 12,315. The cost to acquire just the core area and core area with the 50% core/cga acreage is provided below using a range of land values obtained from tax accessors sources. It should also be noted this scenario does not consider that there may be additional parcels that are partially developed such as a 50 acre parcel with one house on it that may have remaining acreage that would be potentially desirable for preservation or protection, possibly through purchase.

Figure 7.6 Cost To Purchase the Core Area Acreage only and Cost to Purchase the Core Area plus 50% of the Core and CGA Acreage

Cost per Acre ($)	Cost to Purchase Core Area Acreage Only ($)	Cost to Purchase Core Area + 50% of Core and CGA Acreage ($)
$5,000	$51,270,000	$61,575,00
$6,000	$61,524,000	$73,890,000
$7,000	$71,788,000	$86,205,000
$8,000	$82,032,000	$98,520,000
$9,000	$92,286,000	$110,835,000
$10,000	$102,540,000	$123,150,000
$11,000	$112,794,000	$135,456,000
$12,000	$123,048,000	$147,780,000
$15,000	$153,810,000	$184,725,000
$20,000	$205,080,000	$246,300,000
$25,000	$256,350,000	$307,875,000

Sources for Land Acquisition Funds:

Suffolk County - Open Space, Groundwater Protection and Farmland Preservation Program Programs

Provided below is the average cost per acre that was spent by the County to purchase land under the Open Space and Groundwater Protection Programs for the years 1986 to 1992. It should be noted that this cost per acre is the total cost per acre the County had to pay (includes: closing costs, surveys, etc.) In addition, this average cost per acre was calculated for purchases throughout Suffolk County that does not indicate the variation in land values for different areas in the county.

Figure 7.7 Average Cost Per Acre: Suffolk County Open Space and Groudwater Protection Program Acquisitions

Year	Open Space Program Avg Cost/Acre ($)	Groundwater Protection Program Avg Cost/Acre ($)
1986	$10,116	
1987	$5,434	
1988	$24,178	
1989	$36,160	$17,836
1990	$14,090	$12,996
1991	$20,949	$15,201
1992	$14,339	$19,669

The County has pledged $10 million from the Groundwater Protection fund for the purchase of land in the core area of the pine barrens. Annual appropriations for the open space and farmland protection programs are still occurring, representing approximately $4 million per year.

New York State - Environmental Trust Fund

New York State Legislature has pledged $10 million for the acquisition of land within the pine barrens core preservation area. This is a special appropriation from the 1994 budget.

Local Towns - Towns have passed local bond acts to acquire open space.

Federal Government - United States Fish and Wildlife Service
Federal Land and Water Conservation Fund(since 1965, New York State has received more than $191 million from this fund)

Private Fund Raising - The Nature Conservancy, Peconic Land Trust, the Pine Barrens Society, and other private sources

F. Adverse Environmental Impacts That Cannot Be Avoided If the Proposed Plan Is Implemented

The implementation of the Plan will result in the protection of significant pine barren habitats that are recognized as globally unique and contain many rare and endangered species. In addition, the implementation of the Plan will add in the protection of ground water resources that are of relatively high quality that underlie the Central Pine Barrens area by redirecting development away from the core preservation area and by

managing additional growth that would occur in the compatible growth area through minimum criteria standards for development.

Privately owned vacant lands within this preserve would be acquired or preserved utilizing the available preservation techniques described in the Plan or these parcels would have their development rights transferred under the Pine Barrens Credit Program, as outlined in Chapter V.D. of the Plan, to areas outside of the core. The Pine Barrens Credit Program is designed to put value back in the land that has transferred its development rights and will provide developers with a certain level of increase in density as of right by using the Pine Barrens Credits they purchase. It should be noted, however, that the overall total number of units generated within the towns would be the same with no net increase in the number of units occurring since the units are just being transferred from one area (core) to another area within the town (receiving area). Even if the core parcel owners are allowed a reduction in property tax once the development rights are removed from their parcel, the tax revenue will eventually be returned to the town once the pine barren credits are used for development purposes outside of the core area.

In addition, development within the compatible growth area will need to comply with minimum standards, performance specifications and requirements for development proposals(ie: allowable nitrogen loadings, clearance standards, setbacks and buffers for wetlands and surface waters, etc.). The Plan will provide a mechanism to streamline development review that for projects that comply with the minimum criteria and the overall Plan by minimizing the amount of SEQR review required.

Any projects within the core preservation area and any critical resource areas would be under the jurisdiction of the Commission and therefore subject to review by the Commission. This will afford additional oversight and protection of these areas.

The population density would likely be shifted away from the core and therefore will be more dense in the receiving areas. However, it is envisioned that the receiving areas will be primarily located where there is adequate infrastructure in terms of sewage, water, road capacity and community services to accommodate the increase in density. Residential receiving areas could potentially attract families with children that could cause a growth inducing impacts on school districts. However, recommendations under the Pine Barrens Credit Program presented in the Plan suggest that residential receiving areas be considered in areas where schools are below their rated operating capacities. In addition, it is recommended that towns consider as a possible solution for schools that may experience additional financial burden due to an increase in school age children from residential receiving areas, that a compensation mechanism such as payment in lieu of taxes be considered to offset the increase in cost to the schools. The towns will likely utilize Planned Development Districts (PDDs) for a portion of the their receiving areas that will accommodate a mix of uses such as commercial with residential, that would provide tax ratables to the community.

Therefore, the implementation of the Plan is not expected to result in any unavoidable adverse impacts that cannot be mitigated.

G. Irreversible and Irretrievable Commitment of Resources

The implementation of the Plan will result in the protection of significant pine barren habitats that are recognized as globally unique and contain many rare and endangered species. In addition, the implementation of the Plan will add in the protection of ground water resources that are of relatively high quality that underlie the Central Pine Barrens area by redirecting development away from the core preservation area and by managing additional growth that would occur in the compatible growth area through minimum criteria standards for development. However to accomplish the permanent protection of the core, there will be an

irreversible commitment of monetary resources used to acquire certain vacant parcels in the core and certain amount of lost tax revenue from these lands that are acquired outright.

Currently it is envisioned that money for land acquisition in the core area will be obtained from the State's Environmental Trust Fund which dedicates monies for the implementation of the Central Pine Barrens Act. Suffolk County will be providing the remaining funds from the sales tax receipts for the creation of a County-wide pine barrens preserve to protect ground water resources. Some portion of the acquisitions within each town may also require local funds.

This commitment of monetary resources can be offset by the Pine Barrens Credit Program since the land in the core is protected by removing the development rights, however the land still provides a tax base to the town. Even if the core parcel owners are allowed a reduction in property tax once the development rights are removed from their parcel, the tax revenue will eventually be returned to the town once the pine barren credits are used for development purposes outside of the core area.

H. Growth Inducing Aspects

The potential growth inducing impacts envisioned as a result of the implementation of this Plan would likely occur in the receiving areas where a controlled increase in density for development projects outside of the core area would be allowed through the use of pine barrens credits. It should be noted, however, that the overall total number of units generated within the towns would be the same with no net increase in the number of units occurring since the units are just being transferred from one area (core) to another area within the town (receiving area). It is envisioned that the receiving areas are will be primarily located where there is adequate infrastructure in terms of sewage, water, road capacity and community services to accommodate the increase in density. It is more economical to provide roads, water and community services to more compactly developed areas than to communities spread out over larger areas (sprawled development).

The population density would likely be shifted away from the core and therefore would be more dense in the receiving areas. Residential receiving areas could potentially attract families with children that could cause a growth inducing impact on school districts. However, recommendations under the Pine Barrens Credit Program presented in the Plan suggest that residential receiving areas be considered in areas where schools are below their rated operating capacities. In addition, it is recommended that towns consider as a possible solution for schools that may experience additional financial burden that a compensation mechanism such as payment in lieu of taxes be considered to offset the increase in cost incurred by schools. The towns could also consider utilizing Planned Development Districts (PDDs) for a portion of the their receiving areas that would accommodate a mix of uses such as commercial with residential that would provide tax ratables to the community.

I. Effects On The Use And Conservation Of Energy Resources

The implementation of the Plan will result in a decrease in the energy needs for the core preservation area since development will be directed away from this area. The overall effect on the use and conservation of energy resources within the town would remain the same since the number of units are just being transferred from one area (core) to another area (receiving area) within the town. Even within the receiving areas, the focus of development through the use of pine barrens credits will likely result in more efficient use of energy resources since a portion of the development will likely occur in receiving areas such as Planned Development Districts (PDDs) and/or be located near existing hamlets that will minimize the amount of infrastructure required to be constructed or maintained for these new units. The use of clustering techniques in these areas will likewise conserve energy resources. Energy required to be supplied to these communities through municipal services would likewise be less than if the Plan were not implemented for the same reasons. Less vehicle travel and

therefore less energy expended in terms of the creation of roads and the use of fuel, will likely occur with receiving areas designed for: PDDs, clustering with mixed uses occurs in these receiving areas or for receiving areas located nearby hamlet areas since travel to stores and businesses that support these areas would be located nearby.

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