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INTRODUCTION

This Environmental Resource Inventory (ERI), also referred to as a Natural Resource Inventory or an Index of Natural Resources, describes the natural resource characteristics and environmental features of Point Pleasant Beach Borough using data provided by the State Department of Environmental Protection (NJDEP), Ocean County and the Borough. This ERI identifies and describes the physical features of the Borough including its topography, climate and soils, historically significant sites, types of vegetation, groundwater and surface water resources, wetlands, existing land use and zoning, transportation improvement projects, and infrastructure.

This document should be used as a resource tool to develop strategies for preserving ecologically important areas, as well as recommend zoning and resource protection ordinances for protection, preservation, and enhancement of environmentally and culturally important resources.

*As a conclusion, the report includes the Borough's critical environmental areas, shown on **MAP 10**, including water bodies, wetlands, 100-year floodplains, and endangered / threatened species habitat, to indicate the Borough's remaining non-constrained, developable land.*

I. PHYSICAL FEATURES

A. LOCATION

*The Borough of Point Pleasant Beach is a popular beach resort community located along the Central Jersey shore comprising 1.72 square miles (or 1,100 acres). The Borough is located at the northeastern tip of Ocean County, and one of thirty-three municipalities in the county (**MAP 1**). The Manasquan River and the Atlantic Ocean form the Borough's northern and eastern border respectively. The Borough of Point Pleasant is to the west, and the Borough of Bay Head lies to the south. Major destinations such as Atlantic City, New York City and Philadelphia are approximately an hour driving distance from the Borough.*

Point Pleasant Beach is primarily a seasonal beach community, with an estimated Census population of 5,397 residents¹. During the summer months, the Borough's population has been estimated to increase by an average of 45,000 due to summer residents, hotel/motel occupancy, and daily visitors². The North Jersey Transportation Planning Authority (NJTPA) forecasts continued growth in the Borough reaching a population of 5,640 by 2015. For more information on population visit the U.S. Census Bureau website: <http://www.census.gov>. For more information on the NJTPA population projection data visit: <http://www.njtpa.org>.

¹ U.S. Census Bureau Population Estimate (2005).

² Point Pleasant Beach Master Plan (1992), and Ocean County Master Plan (1988).

State Highway Route 35 extends through the Borough in a north-south direction and provides access to the Garden State Parkway and points north via Route 34. County Route 604 (Bay Avenue) is a north-south collector road, and CR 633 (Arnold Avenue) is an east-west arterial road. There is a NJ Transit Station located on Arnold Avenue in Point Pleasant Beach that provides direct commuter access to Penn Station, New York via the North Jersey Coast Line. Additional mass transportation services are provided by a public service. Buses carry passengers to several points within the Garden State, including Atlantic City, Lakewood, and north to New York City.

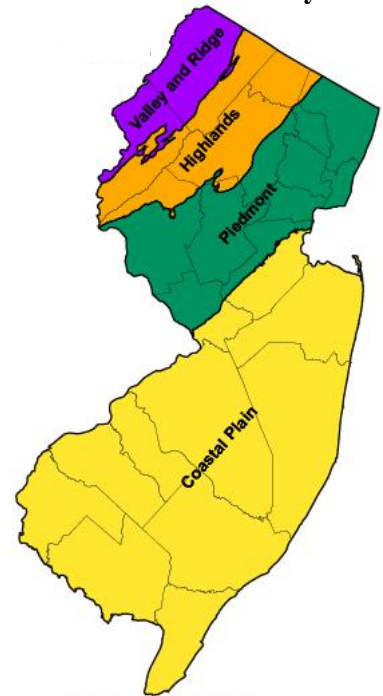
The Borough is mainly comprised of low-density single-family residential housing with higher density residential developments such as townhomes and condominiums mixed in between. There is a collection of marinas and related commercial development along the Manasquan River. Ocean Avenue which extends along the entire ocean frontage serves as the main strip for beach goers and visitors. Arnold Avenue and Broadway are the Borough's main commercial corridors lined with neighborhood business, services and offices. For more local information visit the Borough's official website: <http://www.pointpleasantbeach.org>

B. PHYSIOGRAPHIC PROVINCES OF NEW JERSEY

The physiography of New Jersey describes the State's geology and its rocks and landforms. New Jersey is divided into four distinct physiographic provinces based on its topography, landform and geology. Beginning in the northwest and continuing to the southeast, these provinces are known as the Valley and Ridge, Highlands, Piedmont and Coastal Plain Provinces.

Point Pleasant Beach is within the Coastal Plain province, which is the largest of the four provinces, and includes all of Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Monmouth, Ocean and Salem Counties, and parts of Mercer and Middlesex. The geology of the Coastal Plain is unconsolidated sand, gravel, silt, and clay ranging in age from the upper Lower Cretaceous to the Miocene (90 to 10 million years old). A broad channel follows the Piedmont boundary, from the Raritan Bay west towards Trenton. Near Monmouth Junction, where the channel forms a saddle, the elevation reaches 80 feet above sea level. East of this depression, there is a drainage divide between the Delaware River and the Atlantic Ocean. The streams that flow northwest to the Delaware River are narrower, shorter and have a steeper gradient than the streams that flow southeast to the Atlantic Ocean. The Highlands of Navesink, located at 266 feet

Figure 1. Physiographic Provinces of New Jersey



County boundaries for reference only.

Source: NJDEP - New Jersey Geological Survey (NJGS)

above sea level is the highest point on the coast³.

C. TOPOGRAPHY

Topography refers to the physical characteristics (mountains, lakes, rivers) of a particular region in detail; this is usually expressed in terms of the orientation, slope, and elevation of specific terrain features. Topography is a fundamental aspect of geography, encompassing the practice of cartography, surveying, and GIS. The most common representation of topographic information is in the form of maps.

*The Coastal Plain physiographic province is characterized as having a generally flat topography. As indicated on **MAP 2**, based on the Natural Resource Conservation Service (NRCS) data, there are no slopes in Point Pleasant Beach that exceed 10 percent. Land between 5 and 10 percent slopes generally occurs along the Atlantic Ocean coastline and westward slightly beyond Ocean Avenue. The remainder of Point Pleasant Beach is mostly made up of evenly and gently sloped land less than 5 percent. As evidenced by the Borough's nearly built-out and developed character, its relatively flat topography does not seem to be a significant environmental constraint and/or inhibit development. For more information visit the Natural Resources Conservation Service official website: <http://www.nrcs.usda.gov>*

D. CLIMATE

Point Pleasant Beach Borough enjoys four seasons annually, and is hot in the summer and rather cold in the winter. Precipitation is well-distributed throughout the year. During the winter, precipitation occurs in the form of snow, but ground cover does not usually stay for more than a few days at a time. As reported by the U.S. Government "Coastal" Official Weather Reporting Station for New Jersey, typically, January is the coldest month averaging at 34.5°F and July, the warmest month, averaging at 74.6°F. For more information on climate data in Point Pleasant Beach, as the weather is always changing, visit the National Oceanic and Atmospheric Administration: <http://www.noaa.gov>

E. GEOLOGY

Geology, from Greek γη- (ge-, "the earth") and λογος (logos, "word", "reason"), is the science and study of solid matter, and the composition, structure, physical properties, and history that shapes it.

Geologists have established the age of Earth at about 4.6 billion (4.6×10^9) years, and have determined that the Earth's lithosphere, which includes the crust, is fragmented into

³ New Jersey Geological Survey Information Circular entitled "Physiographic Provinces of New Jersey," prepared by Richard Dalton, 2003.

characterized as very deep, nearly level, and is excessively drained to well drained – mainly yellowish brown, sandy fill.

Psammets, sulfidic substratum (PstAt) are found on Gull Island, around the Route 35 bridge, and at the junction of Routes 35 and 88. As indicated by the soil survey, these areas experience frequent flooding.

Hooksan fine sand (HorsC). The Borough's beaches are made up of Hooksan fine sand in the form of dunes with beach grass and brush cover. Hooksan fine sand is characterized as very deep and excessively drained. Most of these soils are used for recreation, urban development, beach cottages, and wildlife.

Urban land – Hooksan complex (USHOOB). The land surface just west of the beaches is classified as Urban Land – Hooksan complex. This soil type consists of urban land and Hooksan soils mixed in between. The Hooksan soils in this case are altered by grading for development.

Urban land (UR) is found towards the southern sector of the Borough adjacent to the Bay Head and Point Pleasant municipal borders. Soil that is classified as Urban land means more than 80 percent of the surface is covered by asphalt, concrete, buildings or other impervious surfaces. Examples are parking lots, shopping centers, and schools.

Atsion sand (AtsA) is found in a small portion of the Borough near the Bay Head – Point Pleasant Beach border. Atsion sand is very deep, nearly level, and poorly drained.

Lakehurst sand (LakB). The land surface west of NJSH 35 comprises of Lakehurst sands. Lakehurst sand is moderately well drained with a seasonal high water table at 46 to 107 cm (18 to 42 inches).

Evesboro sand (EveB). Evesboro sand is very deep, nearly level to gently sloping excessively drained soil, single grain and loose – 60 percent dark yellowish brown and 40 percent light brownish gray sand.

II. CULTURAL FACTORS

A. HISTORICAL BACKGROUND

Point Pleasant Beach was established as a Borough over 100 years ago, on June 2, 1886. Prior to the Borough's establishment, the Leni Lanape Indians inhabited the beach.

Point Pleasant Beach's history is dominated by the influences of summer and beach tourism. In the early 1800's, Thomas Cook Jr. opened a boarding house for settlers to vacation, tour and enjoy the beaches and shore breezes. Other settlers followed suit and opened their own guest / boarding homes for business. Today, there are a number of bed and breakfast inns, guest homes, motels/hotels, and other resort lodges located in the Borough.

Captain John Arnold, who retired from a career on the sea, and settled in Point Pleasant Beach in the late 1800's, is responsible for the Borough's current-day train service, construction of Arnold Avenue – the first road to the ocean - and the first bridge over the Manasquan Inlet to Brielle. After these valuable amenities were in place, Point Pleasant Beach really began to expand as a summer destination spot. Large vacation homes and resort hotels were constructed at a rapid pace. The first beachfront pavilion was built in 1880, and the original amusement area, Clark's Landing, was located on the Manasquan Inlet and featured a merry-go-round and ice cream making machine.

The decision to establish private beaches was decided in 1897 when the Borough felt the cost of beach maintenance too burdensome. Today, almost all of the Borough's two mile beachfront is privately-owned. About half is accessible to the public through private operators and one small municipal beach. The first permanent boardwalk was complete in 1915⁴. Prior to its development in the 1920s, the Point Pleasant Beach Golf Course occupied much of the town.

Today, the Borough remains a popular summer destination point for its beaches, boardwalk, amusement area, recreational fishing, and a vibrant downtown filled with shops, restaurants, services, apartments, and small offices.

B. SITES OF HISTORICAL SIGNIFICANCE

The historic U.S. Coast Guard Station "Manasquan Inlet" is located on the south side of the Manasquan Inlet in Point Pleasant Beach Borough. This U.S.C.G. Station was constructed in 1936 to replace the Manasquan, Bay Head, Mantoloking, Chadwick Beach and Toms River Stations. In 1991, the site received an opinion of eligibility from the State Historic Preservation Officer (SHPO Opinion). A SHPO Opinion is issued for sites or districts not listed on the Register that will be affected by a federally funded activity.

⁴ Adapted from history section of the Point Pleasant Beach Borough official website.

Historic preservation of the Station is a priority of the Borough if it were to be excised by the federal government.

As a Borough-owned facility, the building could lend itself as the new location for the town museum that is currently located on the first floor of the municipal building, a meeting space for the Historic Society and the Historic Preservation Committee, a maritime / fishing museum and educational facility promoting healthy watersheds and oceans, a community center for meetings and events especially since the Borough does not have such a center in town, or as a facility to be rented out for functions.

III. BIOLOGICAL FACTORS

A. FLORA AND FAUNA

A variety of flora and fauna make the Borough of Point Pleasant Beach home for part or all of the year. Types of vegetation, forest cover, and species habitat in the Borough are listed within this sub-section.

B. TYPES OF VEGETATION

Similar to other shore communities, dunes are found along the Borough's coast. Native dune vegetation consists of beach grasses, poison ivy, beach plum, American holly, bay berry, red cedar, black cherry, smooth sumac, green briar, and prickly pear cactus.

Pocket wooded areas, located in the southern portion of the Borough near the municipal border of Bay Head and Point Pleasant, typically contain mostly pitch pine mixed with black gum and red maple. Undergrowth consists of highbush blueberries, sweet pepperbush, sheep laurel, and greenbriar. Pocket wooded areas, located west of Route 35 and north of Arnold Avenue, typically contain black oak, white oak, red oak, yellow poplar, and chestnut oak with scattered hickories, pitch pine, Virginia Pine, loblolly pine, and scrub and blackjack oaks.

Unlike other shore communities, there are many mature residential and street trees in the Borough. However, current development and resident-cutting is reducing the existing tree coverage. To help address this trend, the Borough Council has passed an ordinance in November 2006 to establish a Shade Tree Commission.

B. FOREST COVER

*The Forest Cover Map (**MAP 4**) was produced using the New Jersey Department of Environmental Protection (NJDEP) 1995/97 Land Use/Land Cover dataset. The forest cover in Point Pleasant Beach is very limited, and includes deciduous brush/shrub land, deciduous forest with 10 to 50 percent crown closure, old fields with less than 25 percent brush cover, and coniferous brush/shrub land. The NJDEP mapping indicates portions of*

Gull Island Conservation Area, especially the outer edges of the island, the eastern half of Pleasure Park, undeveloped land around the Route 35 bridge and at the junction of Routes 35 and 88 as having forest cover. Additionally, an area north of the condominium development located off Ocean Avenue maintains brush / shrub land.

There are no mapped agricultural areas in Point Pleasant Beach.

Gull Island Conservation Area is a preserved County Park and its existing forest cover will remain preserved. The undeveloped land coded as forest by the NJDEP located around the bridge and highways are isolated pieces of land that have no real development potential.

C. LANDSCAPE PROJECT - CRITICAL HABITAT PROTECTION

In 1994, the New Jersey Division of Fish and Wildlife's Endangered and Non-game Species Program (ENSP) began the Landscape Project with a mission "to protect New Jersey's biological diversity by maintaining and enhancing imperiled wildlife populations within healthy and functioning ecosystems."

The Landscape Project divided the State into large land areas labeled "landscape regions" based upon their ecological characteristics and similarities. The Project utilized a database that combined imperiled and priority species location information combined with the NJDEP 1995/97 land use cover dataset. Consequently, the ENSP identified and mapped areas of critical importance for endangered species within the "landscape regions." The Landscape Project Critical Habitat Map was developed especially for land-use decision makers, i.e. municipal and county planners and local planning boards, state agencies, natural resource and lands managers, etc. The Critical Habitat Map can provide a basis for zoning decisions and land acquisition projects.

*As indicated on the Landscape Project Map (**MAP 5**) there is critical habitat for state endangered species in the form of emergent wetlands along the northern edge of Gull Island Conservation Area. Gull Island is already a preserved County Park so this critical habitat will be preserved.*

Examples of state-endangered species that inhabit emergent wetlands include the American Bittern (bird), Henslow's Sparrow (bird), Sedge Wren (bird), Black-crowned Night Heron (bird), Cope's Gray Treefrog (amphibian), and the Bronze Copper snake (invertebrate). For up-to-date information concerning critical habitat, visit the Division of Fish and Wildlife New Jersey Landscape Project website:

Figure 3. American Bittern



Figure 4. Sedge Wren



Figure 5. Night Heron, black-crowned



<http://www.state.nj.us/dep/fgw/ensp/landscape>.

IV. HYDROLOGIC FACTORS

A. AQUIFERS

An aquifer is defined by the U.S. Geological Survey as a water bearing zone that will yield water in a usable quantity from a well or spring. In Point Pleasant Beach Borough, freshwater from precipitation passes through pervious surface areas and is stored in the unconfined Kirkwood-Cohansey aquifer system which underlies more than half of the Borough, and is the source of water only for individual domestic wells and irrigation wells. Due to saltwater intrusion, it is no longer a source for public drinking water. The Brick Municipal Utilities Authority is the Borough's source for drinking water.

B. DEPTH TO WATER TABLE

*The depth-to-water table indicates the distance from the land surface to the water table in centimeters, and is shown on **MAP 6**. The depth-to-water table is determined by land surface topography, recharge of aquifer from precipitation, and permeability of the aquifers. This information correlates with the soils information provided in Section I, sub-heading F. of this report. In areas such as Gull Island, around the Route 35 bridge, and at the Routes 35 and 88 junction, when the water table is high, the potential for hydric soils and wetlands exist. As indicated as dark blue on **MAP 6**, areas where the depth-to-water table is more than 100 centimeters as indicated are developed.*

C. COMMUNITY WELLS AND WELLHEAD PROTECTION OVERLAY AREAS

*As shown on **MAP 6**, there are three public community water supply wells in Point Pleasant which are all abandoned at this time due to saltwater intrusion. As indicated by NJDEP, two of the three wells are within a well-head protection area (WPA). A WPA is a zone around a public community and non-community water supply well that maps the horizontal extent of ground water captured by a well over a two-, five-, and twelve-year period of time.⁵ The WPA offers groundwater protection to unconfined wells, or wells without a clay layer between the aquifer and the groundwater.*

As a result of the United States Environmental Protection Agency's (USEPA) Phase II stormwater rules published in December 1999, NJDEP developed Municipal Stormwater Regulation Program and associated rules to facilitate implementation of the program.

Under NJDEP's Stormwater Regulation Program, the Borough is classified as a "Tier A" municipality, and, among other tasks, is required to develop a Stormwater Pollution Prevention Plan (SP3), Municipal Stormwater Management Plan, and stormwater control and waste disposal ordinances in order to receive a NJPDES permit to continue discharging into a State waterway.

The Borough adopted the Municipal Stormwater Management Plan and SP3 in March 2005. A Stormwater Control Ordinance was adopted on November 21, 2006. It is intended to bring the Borough's stormwater regulations in compliance with the State's Stormwater Regulation Program.

D. GROUNDWATER RECHARGE AREAS

Aquifer recharge is the process by which rainwater seeps down through the soil and unconsolidated deposits into an underlying aquifer. The Kirkwood-Cohansey aquifer underlies the Borough.

*The New Jersey Geological Survey (NJGS) created a groundwater recharge area layer (1997) which identified lands which contribute to underlying aquifers (**MAP 7**). The data is displayed in several categories, based on inches of recharge per year. Groundwater recharge supports aquifer recharge, stream baseflow and wetlands.*

While essentially the entire town is not within a groundwater recharge area, the areas of highest recharge are indicated in dark blue and green on the map. These areas are located along the coast and west of Route 35 and north-south of Arnold Avenue (CR 633).

⁵ New Jersey Geological Survey.

E. SURFACE WATER

Point Pleasant Beach is bounded on the east by the Atlantic Ocean and on the north by the Manasquan River. In addition to its beaches, there are three bodies of water within the Borough including Lake Louise, Little Silver Lake and Lake of the Lillies.

Lake Louise is a tidal lake located in the northern section of town. The lake is used for boating and kayaking due to its access to the Manasquan River. The Borough is currently involved in obtaining regulatory approvals from the State and Federal governments to dredge the lake. Little Silver Lake, centrally located within the Borough, contains a Veteran's Memorial, and a band shell that is used for summer performances. This lake requires bank stabilization and re-vegetation to restore the natural wildlife habitat. Lake of the Lillies, located in the southern portion of town, is part owned by the Borough and individual homeowners, and like Little Silver Lake, requires bank stabilization and re-vegetation to restore the natural wildlife habitat. Lake of the Lillies and Little Silver Lake are becoming more shallow and may also require dredging in the future.

LAKE RESTORATION STUDY – LAKE OF THE LILLIES AND LAKE LOUISE, 2001

In 2001, a lake restoration study was completed for Lake of the Lillies and Lake Louise. The purpose of the study was to inventory, assess, and present a restoration strategy for the rehabilitation of both lakes. Dredging and disposal of dredge spoils on Gull Island was determined most feasible by the Borough Governing Body for Lake Louise. Various dredging options were examined for Lake of the Lillies.

LAKESHORE STUDY – LITTLE SILVER LAKE AND LAKE OF THE LILLIES, APRIL 2006

In response to Borough residents concerns over the state of Little Silver Lake and Lake of the Lillies, a lakeshore study was initiated by the Borough for both lakes. The goals of the lakeshore study are (1) Improve the aesthetics and recreational value of the lakeshore for Borough residents, and (2) Improve the lakeshore as a natural habitat for wildlife. The study works to identify suitable solutions to reach these goals, and, with the input from Borough residents, determine a plan of implementation.

The first phase of the study, completed in April 2006, evaluated and documented site conditions at both lakes, and presented potential upgrades that may be considered in future lakeshore improvement projects. Prior to completion of the study, a public information session was held to gather the public's input and opinions regarding lakeshore improvements.

Invasive common reed (Phragmites australis), geese population, and bank erosion were identified as the major "areas of concern" for both lakes. The study recommended the following for both lakes:

- *Completely eradicate phragmites from the shoreline of Lake of the Lillies, and replace with dense/tall vegetation to deter geese and provide for shoreline stabilization.*
- *Add benches and upland plantings in the area of Saint Louis and Newark Avenues.*
- *Structural stabilization of Little Silver Lake from Baltimore Avenue to the overflow structure along the northern bank.*
- *Replace overflow structure located adjacent to Boston Avenue – consider addition of platform over the outfall.*
- *Replace bulkhead at Chicago Avenue.*
- *Form an ad hoc lake committee of Borough residents and officials to review and prioritize potential lake improvements.*

Prior to any lakeshore improvements, the NJDEP will require general permits for both habitat creation and enhancement activities, and bank stabilization.

It should be noted that both Little Silver Lake, and Lake of the Lillies are listed on the Borough's Recreation and Open Space Inventory (ROSI) assuring their preservation. The ROSI is a database maintained by the NJDEP Green Acres Program that contains State-funded active and passive recreation parcels.

F. WATERSHEDS AND SUB-WATERSHEDS

A watershed or drainage basin is the land that drains to a water body such as a lake, river, stream or bay. Watersheds are typically separated by ridges, hills or slopes called divides. The divides are areas of high ground where each side drains to a different water body. When the water body is fed by several sources, a watershed can be divided in sub-watersheds.

*Watershed Management Areas were created by NJDEP and NJGS in 2000 (**MAP 8**) to manage the State's water resources, and address water pollution and supply issues efficiently. As shown on the insert map, Point Pleasant Beach is split between Watershed Management Area (WMA) 12-Monmouth (also known as the Manasquan River Watershed), and Watershed Management Area (WMA) 13 – Barnegat Bay.*

The NJDEP Division of Watershed Management describes WMA 12 as extending from Perth Amboy to Point Pleasant Beach, and comprised of an assemblage of coastal subwatersheds, all or a portion of which fall into 56 municipalities in the Raritan Bay and Atlantic Coastal drainage basins.

The Metedeconk River, Toms River, Forked River, and Cedar Creek sub-watersheds are part of the larger Barnegat Bay Watershed Management Area (WMA-13). As indicated by the NJDEP Division of Watershed Management, the Toms River sub-watershed drains an area 124 square miles. It flows from western Ocean and Monmouth Counties southeast to Barnegat Bay at the town of Toms River, 11 miles north of Barnegat Inlet.

A discussion of the watershed management plans are included under Section X – Management Tools.

G. CATEGORY ONE (C-1) WATERS AND STORMWATER RULE AREAS

On February 2, 2004, the State of New Jersey adopted new stormwater rules to protect the State's drinking water supply and limit sprawl development. Two significant amendments involve the naming of additional Category One (C-1) waters throughout the State, and requiring a 300-foot buffer around these water bodies. While there are no mapped C-1 waters in Point Pleasant Beach Borough, portions of the Manasquan River in Howell, and its tributaries in Mill Run, Brick and Freehold are mapped as C-1 waters.

H. SHELLFISH HARVESTING AREAS

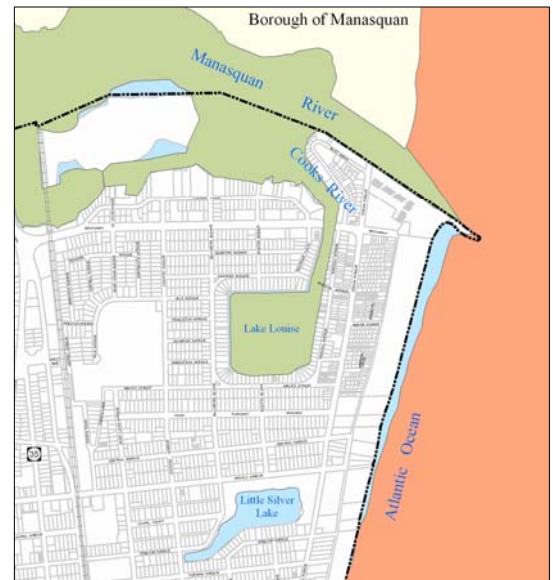
A shellfish harvesting areas map layer was created by NJDEP in 2004. The map defines coastal waters according to regulations of shellfish harvesting activities. As shown in Figure 6, there are four levels of harvesting regulations including: Approved, Prohibited, Special Restricted, and Seasonal.

"Approved" waters permit harvesting under any conditions. "Prohibited" waters, including the Atlantic Ocean, restrict harvesting under any conditions, and are shown in red in Figure 6. "Special Restricted" waters, which include the Manasquan Inlet and Lake Louise, require a special permit requiring further purification of the shellfish before sale. "Seasonal" waters restrict harvesting from November through April. There are no approved or seasonal waterways in Point Pleasant Beach.

It is likely that the waterways in and around the Borough are susceptible to shellfish, but the harvesting of shellfish is regulated so to conserve and properly manage the shellfish population.

As these harvesting areas are always changing, visit the New Jersey Department of Environmental Protection Geographic Information System Programs & Unit page to use the i-Map NJ NJDEP interactive mapping tool for up-to-date information: <http://www.state.nj.us/dep/gis>.

Figure 6. Shellfish Harvesting Areas



Source: NJDEP i-Map NJ

V. WETLANDS

Wetlands are identified by three positive indicators: hydric soils, hydric vegetation and hydrology. Under the New Jersey Freshwater Wetlands Protection Act, activities in wetlands and in buffer or transition areas are regulated and administered by the New Jersey Department of Environmental Protection (NJDEP).

*As noted in the 1992 Master Plan, the most limiting environmental constraints for building and infrastructure in the Borough relate to flooding and wetlands. As indicated on **MAP 9**, Gull Island Conservation Area is an undeveloped park on freshwater wetlands. Saltwater wetlands are located along the Borough's beach and river front. Wetland areas located on Lake of the Lillies and Little Silver Lake are "undetermined" and require field verification.*

Despite the Borough's fully-developed landscape, the 100-year floodplain covers nearly half of the Borough from the Atlantic Ocean west to the railroad tracks. The 500-year floodplain forms the western edge of the 100-year floodplain. It should be noted that the FEMA layer was created in 1996, and utilized regional methodology not at the parcel level, resulting in outdated and inaccurate information.

A. VERNAL HABITATS

Vernal Habitats are unique ecosystems that provide habitat for wildlife species. The NJDEP Division of Fish and Wildlife defines vernal pools as "confined wetland depressions, either natural or man-made, that hold water for at least two consecutive months out of the year and are devoid of breeding fish populations." Under the New Jersey Freshwater Wetlands Protection Act (1989) wetlands less than one acre are exempt from regulatory protection, however in 2002, New Jersey adopted legislation to protect vernal habitats.

There are no mapped vernal habitats in Point Pleasant Beach. For more information on vernal pools and vernal pool protection, visit NJDEP Division of Fish and Wildlife New Jersey's Vernal Pools webpage: <http://www.njfishandwildlife.com/ensp/vernalpool.htm>.

VI. LAND USE FACTORS

A. EXISTING LAND USE

The dominant land use in Point Pleasant Beach is single-family residential. Two-family dwellings are mixed in between single family homes and not as prevalent in the Borough as single-family residential uses. Apartments and multi-family buildings are mainly found at the southern tip of the Borough, at the inlet and boardwalk, and on Ocean Avenue between Atlantic and New Jersey Avenues. Despite the Borough's history as a place for boarders to stay,

motels/hotels, and rooming houses are limited in number and can be found along the Broadway, Arnold Avenue, and Ocean Avenue corridors.

Because there is no zoning district in the Borough that permits manufacturing and industrial uses, the amount of manufacturing and industrial land in the Borough is limited and exists mostly as non-conforming uses.

Commercial uses exist in many forms in the Borough including Marine Commercial, Resort Commercial, tourist commercial uses, neighborhood commercial, and highway retail. It wasn't until the 1988 Master Plan Update that Marine Commercial was designated as its own commercial type. Marine Commercial uses specifically serve the commercial fishery industry and are located near the Manasquan Inlet. Resort commercial uses, such as real estate offices, beaches and pavilions, retail shops, and motels/hotels are located along Ocean Avenue and the boardwalk. Commercial uses targeted at the tourist industry can be found along Broadway and Channel Drive and include marinas, restaurants and other non-retail uses. Neighborhood commercial uses are found within the Arnold Avenue business district. The Route 35 and Richmond Avenue corridors are lined with mostly retail businesses.

Major open space and parks in the Borough include Little Silver Lake, Lake of the Lillies, Lake Louise, Antrim Elementary School, Pleasure Park, Liberty Park, Arnold Avenue Recreation Fields, Point Pleasant Beach High School, Newark Avenue pocket park, Maryland Avenue public beach, the boardwalk, Loughran Point fishing area, and the Manasquan Inlet fishing area and observation platform.

VII. EXISTING AND PLANNED INFRASTRUCTURE

As recommended by the Association of New Jersey Environmental Commissions (ANJEC) resource paper entitled "The Environmental Resource Inventory: ERI" this Report includes a discussion on the existing and planned infrastructure (transportation, drinking water and sewage) in Point Pleasant Beach Borough as of 2006.

A. TRANSPORTATION

Point Pleasant Beach is traversed by State Highway Route 35, and County Routes including County Route 604 (Bay Avenue) and CR 633 (Arnold Avenue). As for public transportation, there is a NJ Transit Station located on Arnold Avenue that provides direct commuter access to Penn Station, New York via the North Jersey Coast Line, and buses carry passengers to several points within the Garden State, including Atlantic City, Lakewood, south to Philadelphia, and north to New York City.

There is one roadway project included in the 2006-2010 Fiscal Year TIP in Point Pleasant Beach Borough:

- *Manasquan River Bridge Rehabilitation – Under existing conditions, this movable structure carries four lanes of traffic. Rehabilitation includes rehabilitation of the deck, as well as work to the electrical and mechanical systems of the movable structure. This project, sponsored by New Jersey Department of Transportation, is expected to be complete in 2008, and is in Construction Phase currently. Total cost for this project is anticipated to be \$33 million.*

According to the Borough Engineer, there are no major transportation improvement projects planned for the Borough. Point Pleasant Beach received ISTEA funding to complete pedestrian and other traffic calming improvements as part of a 3-phased downtown revitalization project. Phases I and II are complete and included improvements such as new sidewalks and freshly painted crosswalks. Currently, funding is not available to complete Phase III.

B. WATER AND SEWER SYSTEMS

The entire Borough is served by public water and sewer. The Borough purchases all of its water from Brick Township Municipal Utilities Authority (BTMUA) through an annual contract.

Wastewater is treated by the Ocean County Utilities Authority (OCUA) plant located in Brick. The OCUA built and maintains two screw lifts located in the pumping station at Little Silver Lake and Ocean Avenue.

Ocean County undertook the following projects to replace infrastructure in the Borough.

- *A new stormwater pump station was constructed at the corner of Ocean Avenue and Route 35 on the south end of town, replacing the existing pump station.*
- *An associated outfall pipe was also reconstructed on the beach.*

Currently, there are no capacity issues with either the water or sewer system. The Borough has however, determined through testing that there is a problem with infiltration and inflow. The Borough is addressing the problem through a program made up of repairs, renovation, and replacement of defective and worn facilities.

VIII. REGIONAL RELATIONSHIPS

A. STATE DEVELOPMENT AND REDEVELOPMENT PLAN

In 2004, the State approved the release of the Preliminary SDRP and the Preliminary State Plan Policy Map for the third round of Cross Acceptance. The Map features Planning Areas, Centers and Environs, which are intended to help implement the goals and policies of the State Plan, and guide future growth and development in New Jersey.

Point Pleasant Beach is entirely within the Suburban Planning Area (PA2). The main intent of Suburban Planning Area (PA2) is to provide for much of the state's future development; promote

growth in Centers and other compact forms; protect the character of existing stable communities; protect natural resources; redesign areas of sprawl; reverse the current trend toward further sprawl; and revitalize cities and towns.

B. OCEAN COUNTY COMPREHENSIVE MASTER PLAN

The Ocean County Comprehensive Master Plan was prepared in 1988. The Master Plan splits the County into three different Development Regions - the Western Inlands, Bay Corridor and Coastal Beaches.

Point Pleasant Beach is within the Bay Corridor Region, excluding the tip of the Borough which is in the Coastal Beaches Region. Major development types in the Bay Corridor Region include housing, agriculture, and industry, especially extraction of sand and gravel. The Coastal Beaches Region contains primarily seasonal and year-round housing, commercial and commercial recreation uses.

Five Growth Area classifications were identified: maximum, high, moderate, low and restricted growth based on growth potential. Point Pleasant Beach is classified as a maximum growth area because it is serviced by existing infrastructure with sufficient capacity. Activities in a maximum growth area may include infill of vacant lands within existing developed areas, or redevelopment of existing developed areas.

Following a similar classification, a General Development Plan, which serves as the region's future land use plan element designates the entirety of Point Pleasant Beach Borough as Suburban Density (5+ units per acre), excluding the coast which is designated as Preservation. Suburban Density allows for a variety of housing types including apartments, condominiums and townhouses. The Borough's Suburban Density land use designation is consistent with the Borough's existing settlement pattern, and the preservation designation is consistent with the Borough's open space and recreation goals and activities.

C. OCEAN COUNTY OPEN SPACE PLAN AND RECREATION INVENTORY

The Ocean County Open Space Plan and Recreation Inventory was prepared in July of 2000 to assess open space and recreation needs of the County and to offer conclusions of how best to satisfy those needs considering the preservation and protection of the County's natural and economic resources.

The Natural Lands Trust Fund Program, a County acquisition program aimed at maintaining and acquiring lands that are environmentally sensitive, as well as natural areas, open spaces, and farmland, set the following goals for Ocean County recreation and open space needs:

- *Maintain the rural character of the County;*
- *Protect critical environmental resources of the County;*
- *Maintain and enhance active agriculture in the County; and*

- *Those buffer areas not suitable for development in the County.*

The major objectives of the Program are the protection of stream corridors, aquifer recharge areas, well head protection areas, natural lands, agricultural uses, buffer areas, as well as the restoration of disturbed areas and the acquisition of greenway linkages. These objectives are accomplished through the county acquisition of lands, the development of professional relationships with groups such as NJDEP and the US Fish and Wildlife service, as well as participation in the NJ Incentive Grant Program which gives grants for the preservation of natural lands.

There are no targeted areas for preservation as county open space in Point Pleasant Beach.

IX. ENVIRONMENTAL CONSTRAINED LANDS

*As recommended by the Association of New Jersey Environmental Commissions (ANJEC) resource paper entitled “The Environmental Resource Inventory: ERI” this Report concludes with a separate Environmentally Constrained Land map (**MAP 10**) that identifies critical environmental areas in the Borough. **MAP 10** was prepared in coordination with a final build-out analysis to help quantify the Borough’s remaining development potential.*

***MAP 10** identifies the Borough’s environmental features including waterbodies, wetlands, 100-year floodplains, and endangered/threatened species habitats that merit special consideration/protection when developing structures and/or infrastructure in the Borough. Nearly half of Point Pleasant Beach is in the 100-year floodplain. Not considering redevelopment potential, the Borough has almost reached its full build-out where only 0.6 percent of the land remains vacant, and has some form of development potential. At least half of that vacant land is covered by an environmental feature.*

X. MANAGEMENT TOOLS

The following section describes different types of management tools that can be used for the preservation and protection of the Point Pleasant Beach’s natural landscape.

A. ZONING

*Zone districts are applied in municipalities to organize development in terms of land uses, density, building height, setbacks, parking standards, signage, fencing and other site improvements, and more importantly to preserve the quality of life for its residents. As indicated in the table below and **MAP 11**, there are 12 districts in Point Pleasant Beach:*

<i>Residential Zoning Districts</i>
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<i>LR</i>	<i>Low Density Single Family Residential</i>
<i>SF-5</i>	<i>Moderate Density Single Family Residential</i>
<i>HR</i>	<i>High Density Residential</i>
<i>RR-1</i>	<i>Resort Residential – 1</i>
<i>RR-2</i>	<i>Resort Residential – 2</i>
<i>RR-3</i>	<i>Resort Residential – 3</i>
<i>Non-Residential Zoning Districts</i>	
<i>LC</i>	<i>Limited Commercial</i>
<i>GC</i>	<i>General Commercial</i>
<i>HC</i>	<i>Highway Commercial</i>
<i>RC</i>	<i>Resort Commercial</i>
<i>MC</i>	<i>Marine Commercial</i>
<i>Open Space Zoning District</i>	
<i>ROS</i>	<i>Recreation and Open Space</i>

The dominant zoning district in Point Pleasant Beach is Moderate Density Single Family Residential (SF-5), which requires a minimum lot size of 5,000 square feet. Resort Residential zoning districts are located along the beach front or just inland. The High Density Residential zoning district is located at the southern tip of the Borough, and near the Manasquan inlet.

General and Highway Commercial zones are strategically located around the Borough’s main corridors of Route 35 and Broadway, and west of the railroad tracks on either side of Arnold Avenue. The Highway Commercial zone permits uses such as retail sales, restaurants, banks, and offices. The General Commercial zone is similar to the Highway Commercial zone except that it does not permit residential above retail uses. Resort Commercial (RC) Zones are found along the coast, and permit beaches and bathing pavilions, retail sales, parking lots, and restaurants. Motels and hotels are permitted in the RC Zone as a conditional use. The Marine Commercial Zones are located along the Manasquan River, and permit retail sales, restaurants, bars, and marine and boat sales/services.

The ROS Zone covers the Borough’s, State, and County open space and recreation parcels such as Gull Island, Antrim Elementary School, Little Silver Lake, Lake of the Lillies, Rickover Park, Pleasure Park, Liberty Park, Arnold Avenue Recreation Fields, Point Pleasant Beach High School, Maryland Avenue public beach, the boardwalk, Loughran Park, Admiral Rickover Park, Lake Louise, and the Manasquan Inlet fishing area and observation platform.

B. CAFRA COASTAL AREA

The entire Borough is included under the jurisdiction of the Coastal Area Facilities Review Act (CAFRA). Development activity that falls under CAFRA review includes:

- *Any development located on a beach or dune;*
- *Any development within 150 feet of the mean-high water line¹;*

¹ Mean High Water Line is defined as the boundary line along navigable waters between submerged lands including the foreshore owned by the State in its sovereign capacity, and uplands subject to private ownership.

- *Where the proposed project is within 150 feet of the mean-high water line and there is existing development in between – residential developments with 3 or more units, commercial project with 5 or more parking spaces, and any public or industrial development fall under CAFRA review;*
- *Any residential development with 25 or more units;*
- *Any commercial project with 50 or more parking spaces; and*
- *Any public or industrial development.*

In February 2000, Coastal Centers were created to allow for a higher concentration of growth in areas with existing development and infrastructure. The center designations were limited to five years, and were set to expire on February 7, 2005.

In June 2005, NJDEP announced changes to the Coastal Zone Management Rules that addressed the development or reaffirmation of Coastal Centers. Today, the NJ DEP Coastal Center process does not exist. Center designation occurs now through the Office of Smart Growth Plan Endorsement Process.

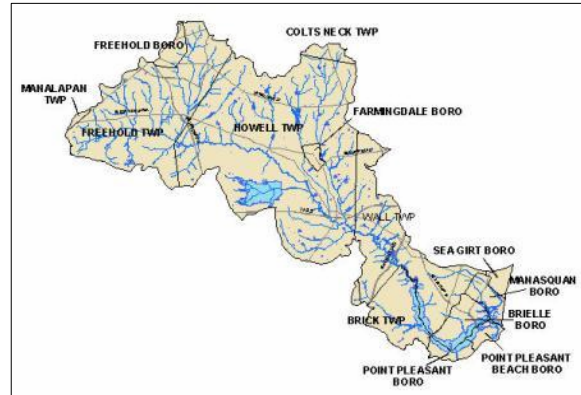
C. WATERSHED MANAGEMENT PLANS

*Point Pleasant Beach lies between two Watershed Management Areas (WMA): WMA 12-Monmouth (also known as Manasquan), and WMA 13-Barnegat Bay. WMA 12 covers the northern portion of the Borough, from Trenton Avenue diagonally and northeast to Broadway including Lake Louise. WMA 13 covers the remaining portion of the Borough (**MAP 8**). Below is a brief discussion on the watershed management plan for each area.*

WATERSHED MANAGEMENT AREA 12

The main objective of the Manasquan River Watershed Management Plan is to protect and restore the Manasquan River watershed. Specifically, the management plan establishes four action plans to address Fishery Management, Habitat Protection, Drinking Water Quantity and Quality, and Cultural Heritage. Each of the four action plans is guided by a main goal. Several strategies are established to achieve each Action Item goal.

Figure 7.
Watershed Management Area 12



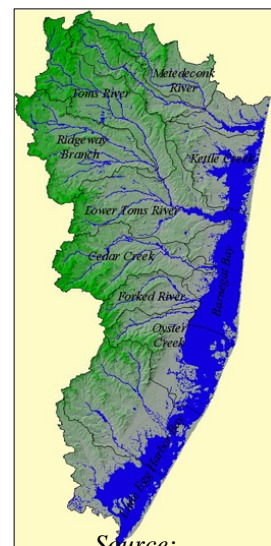
Source: Manasquan River Watershed Association

WATERSHED MANAGEMENT AREA 13

In 1995-6, Watershed Management Area 13, which includes a large portion of the Pinelands and the Barnegat Bay area was admitted into the National Estuary Program and recognized by the USEPA as an estuary of “national significance.” In 2002, the Barnegat Bay National Estuary Comprehensive Conservation and Management Plan was approved by the US Environmental Protection Agency. The Plan addresses all activities that would affect the restoration and maintenance of the chemical, physical, and biological integrity of the estuary.² The Plan is guided by the following principles:

- Encouraging and motivating residents and visitors to maintain an ethic of responsibility for the bay and watershed.
- Educating people about the cultural heritage, historic traditions and natural estuarine resources of the Barnegat Bay National Estuary Program (BBNEP) region for today.
- Implementing community-based environmental planning for an increased quality of life and economic viability for the region.
- Integrating scientific data to prioritize the focal issues of point and nonpoint sources of pollution, habitat loss/open space, water quality degradation, and the multiple interests in the watershed region.
- Promoting sustainable management of operative efforts of citizens, businesses, local, state, and federal governments and other stakeholders.

Figure 8.
Watershed Management Area 13



Source:

NJDEP Division of Watershed Management

² Barnegat Bay National Estuary Program main website

- *Acknowledging and planning for the rising population and increased uses of ground and surface water.*
- *Maintaining recreational and commercial fisheries through a healthy watershed.*

The Plan is divided into four major Action Plans that address water quality/water supply, habitat and living resources, human activities and competing uses, and public participation and education. It is the goal of the BBNEP to prioritize and implement each of the items in the Action Plan, integrate portions of the Plan into policies, plans, budgets, laws, and regulations, and to develop annual work plans and budgets so that the Plan is continually implemented. Each Action Plan is organized to address water pollution and supply issues in a comprehensive manner that does not follow municipal boundaries.

D. RECYCLING

The Borough services the town with regular trash pickups of biweekly trash pick-up, and weekly commingled recyclables pick-up. Recyclable items include plastics, glass, bimetal commingled, newspaper, junk mail, and corrugated cardboard. Recyclables are trucked to the Ocean County Materials Recycling Facility, and the trash is trucked to the Ocean County Landfill.

XI. OPEN SPACE COMMITTEE

In November of 2005, the voters of Point Pleasant Beach, by a margin of two-to-one, passed a public referendum to establish an Open Space Trust Fund in compliance with the NJDEP Green Acres program guidelines. This vote sent a clear signal that open space had become an important priority to residents.

Shortly after the referendum, in early 2006, Borough Council established the Open Space Committee.

The Point Pleasant Beach Open Space Committee mission is to assist the Borough in preserving natural resources and historic properties, enhancing recreational facilities and improving the access, use and protection of our numerous natural beaches and waterways. The Committee is the primary source of recommendations for open space protection and acquisition for the Borough.

The Open Space Committee is comprised of nine members representing a broad cross section of residents including those involved in current Borough activities as well as those with independent points of view. The membership is comprised of: two councilmen, three residents not serving on established committees or under the employ of the Borough, two high school student observers, and representatives from four established Borough committees (i.e. Planning Board, Recreation Committee, Historic Preservation Committee and the Environmental Commission).

The committee's first task after establishment was the development of an Open Space and Recreation Plan and Natural Resource Inventory. Both of these were completed by December of 2006 and adopted by the Planning Board.