



3.0 Natural Resources

3.0 NATURAL RESOURCES

MASTER PLAN RECOMMENDATION 3.1



Huber Woods, Middletown

Source: Brittany Ashman

3.1: Maintain and update inventories of the county’s natural features and systems and promote the protection of natural resources in conjunction with the Monmouth County Park System (MCPS).

Purpose

The Division of Planning will provide professional and technical assistance with the implementation of the Monmouth County Environmental Council’s (MCEC) update of the *Natural Features Study for Monmouth County (1975)* which will soon be replaced with the *Monmouth County Natural Resources Inventory*. This document will assist the MCPS in identifying, acquiring, and preserving significant natural and historic resources throughout the county, particularly as they related to improved community resiliency and sustainability.

Monmouth County Departments & Organizations Involvement

Division of Planning	Assist the MCEC and MCPS in the identification of significant natural and cultural resources; update the countywide <i>Natural Features Study for Monmouth County</i> .
Planning Board (MCPB)	Recognize the <i>Monmouth County Natural Resources Inventory</i> as a consultative and supporting document to the <i>Monmouth County Master Plan</i> .
MCEC	Review natural and historic feature research and documents prepared by Division of Planning staff; provide input on the upcoming <i>Monmouth County Natural Resources Inventory</i> .
MCPS	Identify, acquire, and preserve significant natural and historic resources; provide support, information, and review of the upcoming <i>Monmouth County Natural Resources Inventory</i> .

Other Project Stakeholder Involvement

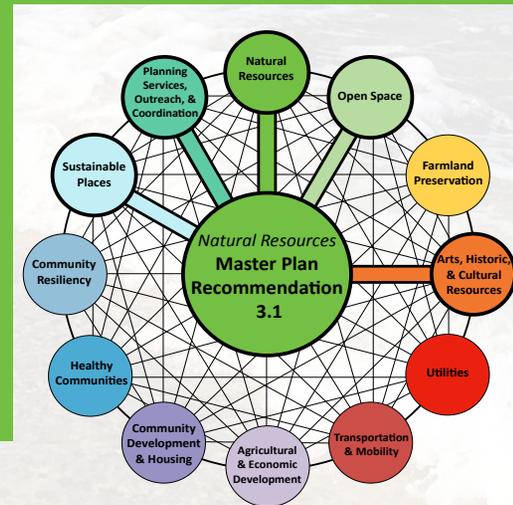
Municipalities	Provide input, review, and comment on the upcoming <i>Monmouth County Natural Resources Inventory</i> .
Nonprofits	Provide input, review, and comment on the upcoming <i>Monmouth County Natural Resources Inventory</i> .

Master Plan Goals, Principles, & Objectives (GPOs) Relating to 3.1

PRINCIPLES	GOAL 1			GOAL 2				GOAL 3						
	1.1	1.2	1.3	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	3.5	3.6	3.7
Comprehensive Planning	●													
Coordination		●												
Planning Approach			●											
Environmental Resources				●										
Farmland Preservation					●									
Arts, Culture, & Historic						●								
Preservation Investments														
Vibrant & Sustainable Communities								●						
Community Preservation									●					
Housing										●				
Economic Development											●			
Agricultural Development												●		
Recovery & Resiliency													●	
Growth Investments														●

Implementation Strategy

- Coordinate the data collection with the MCPS, MCEC, and municipal environmental commissions.
- Seek input from preservation partners and municipalities.
- Complete research and development of the *Monmouth County Natural Resources Inventory* and begin the process of approval by the MCEC.
- Reach out to all stakeholders for review and comment.
- Provide support to the county, nonprofits, and municipalities as they move forward with preservation efforts that support plan implementation.



Strongest Associated Master Plan Elements

3.0 NATURAL RESOURCES

MASTER PLAN RECOMMENDATION 3.2



Huber Woods, Middletown

Source: Brittany Ashman

3.2: Participate in initiatives that identify, target, and protect important resources, critical habitats, species of concern, and Areas of Significant Environmental Quality (ASEQ).

Purpose

The Monmouth County Environmental Council's (MCEC) mission directs the identification of ASEQ. The *Natural Features Study for Monmouth County (1975)* initially identified these areas and in 1978, the *Monmouth County Unique Areas Study* refined the list and summarized their importance. Over the years, the MCEC added more Unique Areas to the list, primarily through recommendation from municipalities and the Monmouth County Park System (MCPS), renaming the list to ASEQ (2007).

Monmouth County Departments & Organizations Involvement

Division of Planning	Work with stakeholders to provide support to the MCEC to update the ASEQ, as amended over time.
MCEC	Review the ASEQ and the updated <i>Monmouth County Unique Areas Study</i> prepared by the staff, providing input and recommendations; adopt the final products.
MCPS	Provide support, information, and review of the <i>Monmouth County Unique Areas Study</i> update.

Other Project Stakeholder Involvement

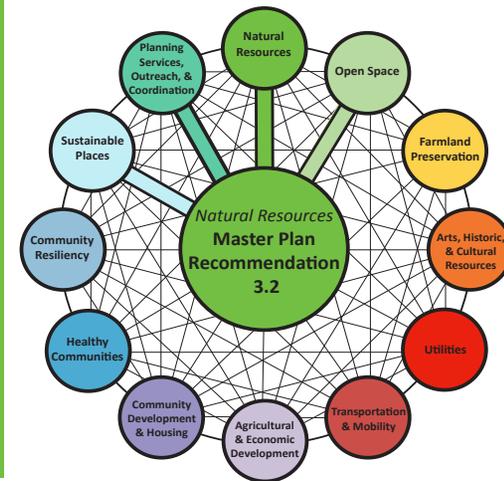
Municipalities	Recommend new ASEQs to the Division of Planning.
Nonprofits	Recommend new ASEQs to the Division of Planning.

Master Plan Goals, Principles, & Objectives (GPOs) Relating to 3.2

PRINCIPLES	GOAL 1			GOAL 2				GOAL 3						
	1.1	1.2	1.3	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	3.5	3.6	3.7
A. Comprehensive Planning	●													
B. Coordination		●												
C. Planning Approach			●											
D. Environmental Resources				●										
E. Farmland Preservation					●									
F. Arts, Culture, & Historic						●								
G. Preservation Investments							●							
H. Vibrant & Sustainable Communities								●						
I. Community Preservation									●					
J. Housing										●				
K. Economic Development											●			
L. Agricultural Development												●		
M. Recovery & Resiliency													●	
N. Growth Investments														●

Implementation Strategy

- Refine list of the ASEQ based on feedback from the MCPS, preservation partners, municipalities, and the MCEC.
- Seek review from other county agencies that might have concerns.
- Complete the research and development of the *Monmouth County Unique Areas Study* update.
- Reach out to all stakeholders for review and comment.
- Begin the formal process of approval by the MCEC.
- Provide support to county departments, nonprofits, and all levels of government as they move forward with preservation efforts that support plan implementation.



Strongest Associated Master Plan Elements

3.0 NATURAL RESOURCES

MASTER PLAN RECOMMENDATION 3.3



Huber Woods, Middletown

Source: Brittany Ashman

3.3: Encourage and support new and continuing partnerships for resource protection.

Purpose

Partnerships with the federal and state government, other counties, municipalities, as well as private and nonprofit stakeholders promote regional watershed protection and other regionally-based natural resource protection initiatives. The partnerships share a common vision, engage in collaborative planning efforts, leverage funding, and implement cooperative strategies.

Monmouth County Departments & Organizations Involvement

Division of Planning	Participate as the project lead or partner in natural resource related partnership efforts; support other county departments.
Various County Agencies	Participate as project lead or partner; offer direction, services, or support to lead agency.

Other Project Stakeholder Involvement

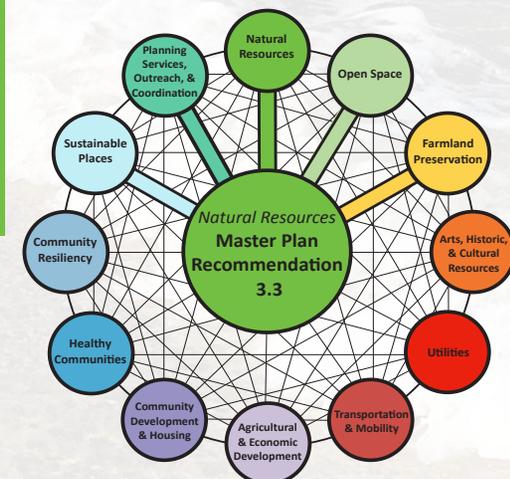
Municipalities and Other Counties	Serve as project partners; provide input, support, and feedback; assist in implementing local projects.
State of NJ and Federal Government Agencies	Serve as project partners; allocate funding when available; provide plan or project review for permits.
Academic Institutions and Utility Authorities	Serve as project lead or partners; provide data, support, and implementation and academic assistance.
Nonprofits	Participate as project partners; support partnership efforts through preservation, volunteerism, or outreach assistance, as appropriate.

Master Plan Goals, Principles, & Objectives (GPOs) Relating to 3.3

PRINCIPLES	GOAL 1			GOAL 2				GOAL 3						
	1.1	1.2	1.3	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	3.5	3.6	3.7
Comprehensive Planning														
Coordination														
Planning Approach														
Environmental Resources														
Farmland Preservation														
Arts, Culture, & Historic														
Preservation Investments														
Vibrant & Sustainable Communities														
Community Preservation														
Housing														
Economic Development														
Agricultural Development														
Recovery & Resiliency														
Growth Investments														

Implementation Strategy

- Identify appropriate partnerships and represent the Division of Planning where directed.
- Monitor partnership activities, participate in and help facilitate meetings, review documents, share data, and provide feedback.
- Assist in project implementation when possible.



Strongest Associated Master Plan Elements

3.0 NATURAL RESOURCES

MASTER PLAN RECOMMENDATION 3.4



Huber Woods, Middletown

Source: Brittany Ashman

3.4: Continue to educate the public on the county's valuable natural resources, environmental impact assessment procedures, and other important environmental issues.

Purpose

The Monmouth County Environmental Council's (MCEC) mission includes environmental education and outreach. Monmouth County Park System (MCPS) programming is also geared towards environmental education efforts and the Monmouth County Health Department (MCHD) educates the public on environmental health related issues. All three agencies host informational workshops and produce educational outreach materials on a variety of natural resource and environmental issues for municipalities, schools, community groups, and the general public. The Division of Planning annually hosts an AmeriCorps NJ Watershed Ambassador, administered by NJ Department of Environmental Protection (NJDEP), with the primary goal of watershed and water quality education and outreach.

Monmouth County Departments & Organizations Involvement

Division of Planning	Coordinate, support, and assist the MCEC, MCPS, and MCHD in environmental education and outreach efforts; prepare or assist in the preparation of environmental education related brochures and other documents; provide outreach to municipalities through roundtable events on topical environmental issues; provide educational programs to schools and community groups through the AmeriCorps NJ Watershed Ambassador Program.
MCEC	Hold roundtable events; recommend topics for educational programs and brochures; assist staff in the preparation; review or implement programs and documents.
MCPS	Continue to provide educational programs and documents on a wide variety of environmental and natural resource topics.
MCHD	Continue to provide educational programs and documents on a wide variety of environmental health related topics.
Brookdale Community College (BCC)	Potential partner for educational outreach; include county workshops in their publications and website; promote to student community.

Other Project Stakeholder Involvement

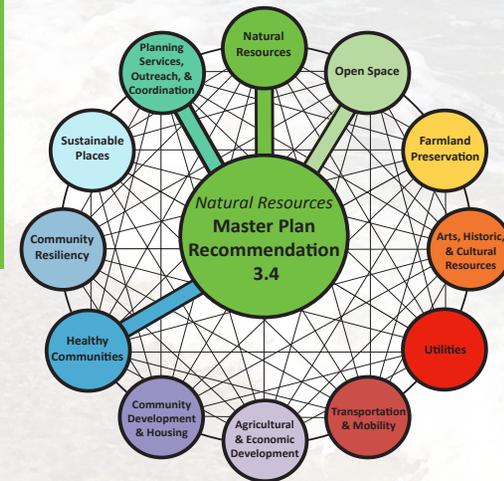
Municipalities	Suggest topics of interest; participate in outreach programs; provide venues for events.
Academic Institutions and Community Groups	Participate in educational programs; offer support through speakers, data, and venues.
Resident and Local Businesses	Participate in educational programs.

Master Plan Goals, Principles, & Objectives (GPOs) Relating to 3.4

PRINCIPLES	GOAL 1			GOAL 2				GOAL 3						
	1.1	1.2	1.3	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	3.5	3.6	3.7
Comprehensive Planning														
Coordination		●												
Planning Approach			●											
Environmental Resources				●										
Farmland Preservation					●									
Arts, Culture, & Historic						●								
Preservation Investments														
Vibrant & Sustainable Communities								●						
Community Preservation									●					
Housing										●				
Economic Development											●			
Agricultural Development												●		
Recovery & Resiliency													●	
Growth Investments														●

Implementation Strategy

- Coordinate educational program offerings with the MCEC, MCPS, MCHD, academic institutions, and other stakeholder groups.
- Update current brochures and prepare new educational materials, taking advantage of evolving technologies.
- Seek grant funding to facilitate production of educational materials and programming.



Strongest Associated Master Plan Elements

3.0 NATURAL RESOURCES

MASTER PLAN RECOMMENDATION 3.5



Huber Woods, Middletown

Source: Brittany Ashman

3.5: Assist municipalities with floodplain management and planning initiatives that improve community resiliency and/or advance their standing in the National Flood Insurance Program (NFIP) Community Rating System (CRS) program.

Purpose

The NFIP administers the CRS program and scores towns on their effectiveness in dealing with the mitigation of flood hazard events. Earning CRS points lowers flood insurance premiums for homeowners and businesses located in Special Flood Hazard Areas (SFHAs) in participating towns. CRS points are awarded to towns that leverage their natural resources to increase community resiliency through activities such as preserving natural open spaces and installing natural shoreline protections.

Monmouth County Departments & Organizations Involvement

Division of Planning	Encourage municipalities to participate in the Monmouth County CRS Users Group to advance knowledge and understanding of the NFIP CRS program; provide technical, geographic information system (GIS) mapping (e.g. open space mapping), and professional assistance to municipalities, in accordance with county guidelines.
Office of Emergency Management (OEM)	Encourage municipalities to participate in the Monmouth County CRS Users Group; continue to disseminate information and updates from the Federal Emergency Management Agency (FEMA), NFIP, and CRS program to Monmouth County municipalities and stakeholders; provide technical and professional assistance to municipalities, in accordance with county guidelines.

Other Project Stakeholder Involvement

Municipalities	Voluntarily participate in the Monmouth County CRS Users Group meetings and events to share information, ideas, and concepts that will assist other partners in gaining CRS points, receive assistance from the county, in accordance with county guidelines.
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Master Plan Goals, Principles, & Objectives (GPOs) Relating to 3.5

PRINCIPLES	GOAL 1			GOAL 2				GOAL 3						
	1.1	1.2	1.3	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	3.5	3.6	3.7
A. Comprehensive Planning														
B. Coordination	●	●	●								●			
C. Planning Approach	●		●										●	
D. Environmental Resources		●	●										●	
E. Farmland Preservation	●	●	●										●	
F. Arts, Culture, & Historic														
G. Preservation Investments														
H. Vibrant & Sustainable Communities														
I. Community Preservation														
J. Housing														
K. Economic Development														
L. Agricultural Development														
M. Recovery & Resiliency														
N. Growth Investments														

Implementation Strategy

- Encourage municipal participation in NFIP's CRS program.
- Through the Monmouth County CRS Assistance Program, provide professional and technical assistance for towns seeking participation or advancement in NFIP's CRS program.
- Leverage efficiencies of scale that result in cost effective, shared services by providing towns with baseline data, information, and mapping support.
- Assist municipalities in lowering costs for NFIP policyholders (residents and business owners) in SFHAs.
- Promote mitigation preparedness and activities in SFHAs.
- Assist towns in the preparation of their floodplain management plans and ordinances.
- Provide peer support and access to professional assistance from county, state, and federal agencies through the Monmouth County CRS Users Group.



Strongest Associated Master Plan Elements

3.0 Natural Resources

3.1 Introduction

The location of Monmouth County provides for an array of unique natural resources, critical habitats, and species of concern. This county essentially provides a microcosm of the state in that it has natural and developed beaches; offers river, bay, and ocean boating and fishing opportunities; encompasses large and small lakes, rivers, and reservoirs; and includes highlands, lowlands, forests, farms and developed areas. The variety and quantity of preserved natural land ensures that the county will continue to provide some level of land use diversity for many years to come. It is important, to continue to preserve natural lands for what they provide to the sustainability of the county: drinking water, food, pollution control, and opportunities for recreation, just to name a few.

The Goals, Principles, and Objectives (GPOs) related to the Natural Resources Element focus on identifying and protecting the county’s natural resources along with educating the public, enhancing partnerships, supporting preservation efforts and assisting with resource managing projects, such as floodplain management initiatives. *Master Plan* Goal #2 states: “promote the protection and conservation of natural and cultural resources to help guarantee our long-term sustainability.” Principle 2.1 specifies the value of natural resources as life-supporting infrastructure imperative to the built environment. As development in the county continues, important natural resources must be preserved in order to maintain a sustainable balance and retain the high quality-of-life to which Monmouth County residents have become accustomed.

3.2 Existing Conditions

3.2.1 Physical Geography and Natural Features

Monmouth County is comprised of 472 square miles located in eastern

central NJ and is the state’s sixth largest county. There are 27 miles of coastline along the Atlantic Ocean and 22 miles of shoreline along Raritan Bay. The county features four major coastal rivers: Manasquan, Shark, Navesink, and Shrewsbury. [Figure 3.1: Physical Geography Map, 2016](#), shows the physical geography of the county in terms of both the natural and built environment.

Elevations in the county range from sea level at the coast to 391 feet above sea level at Crawford’s Hill in Holmdel. There is a prominent, crescent shaped ridge known as the Mount Pleasant Hills spanning from the Highlands in the northeast to Freehold in the county’s center. This ridge essentially follows the divide between the Inner and Outer Coastal Plain Physiographic Provinces. Together they form the Atlantic Coastal Plain Physiographic Province. Other than the relatively less prominent Hominy Hills, which stretch from Colts Neck toward Eatontown, the rest of the county is largely comprised of lowlands.

The county features a wide variety of soils, with 43 agronomic soil series and 114 different types or subtypes recognized by the Soil Conservation



Manasquan River

Source: Linda J. Brennan



Figure 3.1: Physical Geography Map, 2016



FIGURE 3.1
Physical Geography Map

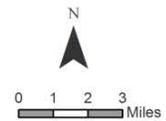
Monmouth County
Master Plan

May 2016

- Agriculture
- Built-Up Lands
- Barren
- Forest
- Water
- Wetlands
- Recreational Lands

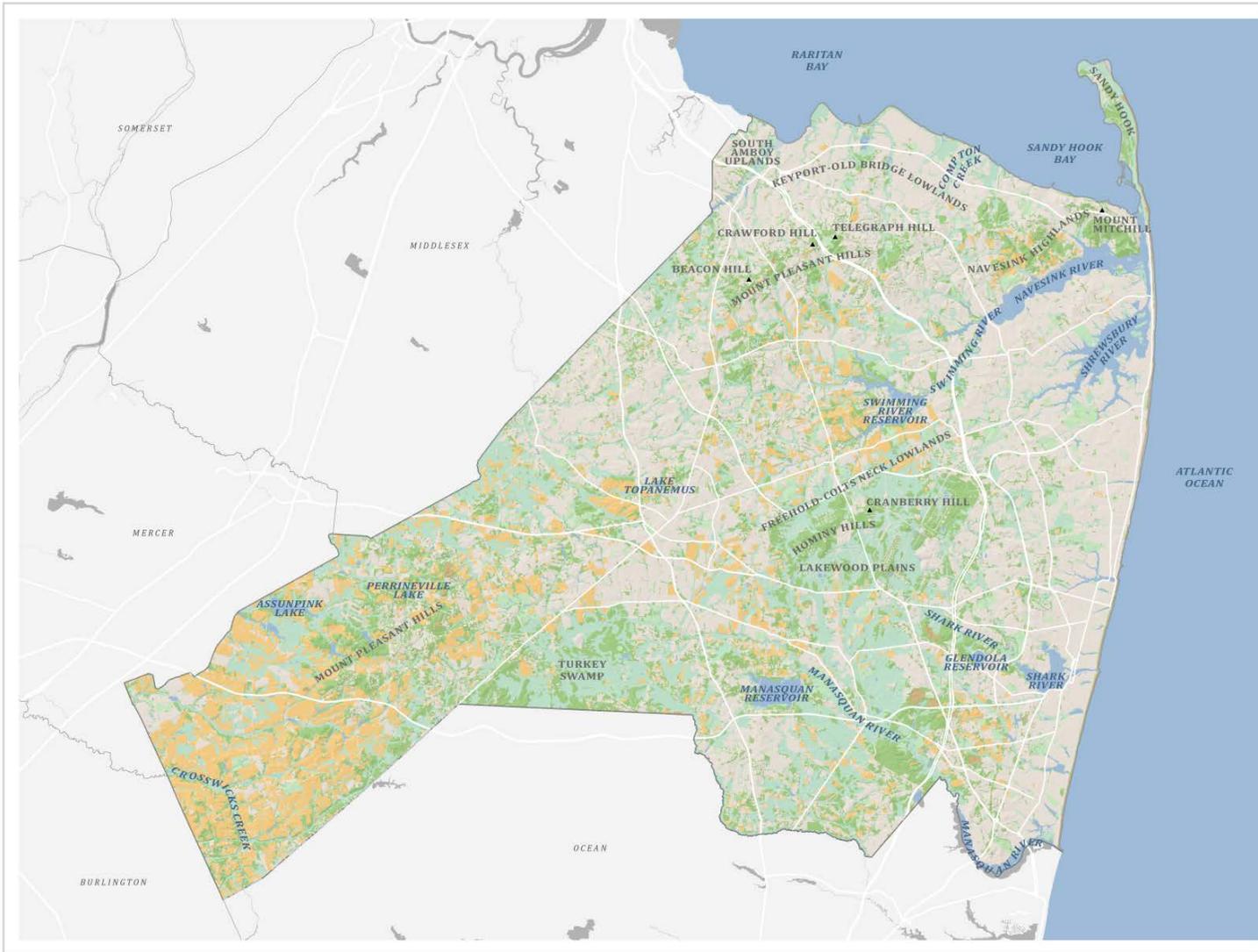
This map was developed using Monmouth County Digital Data from the Monmouth County Division of Planning GIS Section, and the New Jersey Office of GIS. Land Use classifications were derived from the NJDEP 2012 Land Use/Land Cover Dataset.

Additional sources: USDA Bureau of Chemistry and Soils "Soil Survey of The Freehold Area, New Jersey" (1927), and USGS topographic quadrangle maps.



This map was created using GIS digital data supplied by county and external resources. Data accuracy is limited by the accuracy and scale of the original source. The digital data herein is for consultative and deliberative purposes only. Site specific conditions should be verified.

This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.



Service (SCS). Soil types are important because their mineral or organic matter is an essential determinant in plant growth and agriculture. Their hydraulic conductivity, the ability to hold and drain water, is also an important factor in building and development as well as agricultural. Soil types give rise to different ecological habitats as well as different suitability for land uses. The degree of land slope affects the drainage, runoff, and erosion potential of soil. Ninety percent of the land in Monmouth County features a less than 10% slope, while 75% of Monmouth County has a less than 5% slope. Areas of less than 2% slope are considered “poorly drained”.

As seen in [Figure 3.2: Generalized Soils Map of Monmouth County, 2016](#), the county’s 43 agronomic soil series can be categorized into 8 generalized map units. These map units have been delineated by the United States Department of Agriculture (USDA) as part of the Digital General Soil Map of the United States (STATSGO2). According to the USDA, these general map units are designed with a level of detail useful for broad planning and management practices.

Freehold-Collington-Adelphia: This map unit comprises much of the county from Upper Freehold through Millstone, Freehold Township, Freehold Borough, Manalapan, Colts Neck, Marlboro Holmdel, and many of the municipalities in the Navesink and Swimming River watersheds. Surface soils are mixes of different levels of sand and loam. Along the western border of this map unit, from Upper Freehold to Marlboro and Holmdel and traveling east to Colts Neck, soils are nearly level to moderately steep and well drained, providing much of the county’s farmland suitable for common field crops, hay, sod, vegetables, nursery stock, and horse farms; some other undeveloped areas are wooded. Land bordering Middlesex County in Manalapan and Millstone south to Roosevelt are suitable for pastureland and orchards in addition to nursery stock and common field crops. Land immediately surrounding the Navesink and Shrewsbury Rivers, from Atlantic Highlands to West Long

Branch, are nearly level to steep, well drained, and loamy but have been significantly urbanized.

Keyport-Elkton: Soils of this map unit, found primarily in Aberdeen and Matawan, feature loam and sandy loam. Soils are nearly level, poorly to moderately well drained on uplands, low divides, broad flats, and depressional areas. Soil permeability is generally low with high water availability; surface muck is present in some areas surrounding waters and wetlands draining to Raritan Bay. Most acreage is wooded, with some areas suitable for pastureland. In areas of best drainage, common field crops, hay, and vegetables may be farmed.

Klej-Galestown-Evesboro-Downer: This map unit composes the majority of Monmouth County’s southern coastal municipalities, from Southern Long Branch to Brielle, westward into Ocean Township, Tinton Falls, Wall, and Howell. A separate band exists from Marlboro through Aberdeen to Middletown, along the northern border of the Mount Pleasant Hills. Soils of this map unit are loamy sands and sands moderately well to well drained. Their low organic matter content and low water capacity make these areas poor choices for crop production. Some areas are wooded, while others may be suited for pastureland. They are found primarily in depressional areas and low divides.

Lakewood-Lakehurst-Evesboro-Atsion: Soil of this map unit is comprised mainly of loamy sands or sands. Most areas are nearly level and range from excessively drained to poorly drained, found in depressions and broad flats. This unit is found mainly in southern Tinton Falls, Howell, Farmingdale, northern Wall, and southern Freehold Township. This map unit is generally wooded and poorly suited for farming, but properly managed areas can be suitable for specialty crops such as blueberries and cranberries.



Figure 3.2: Generalized Soils Map of Monmouth County, 2016

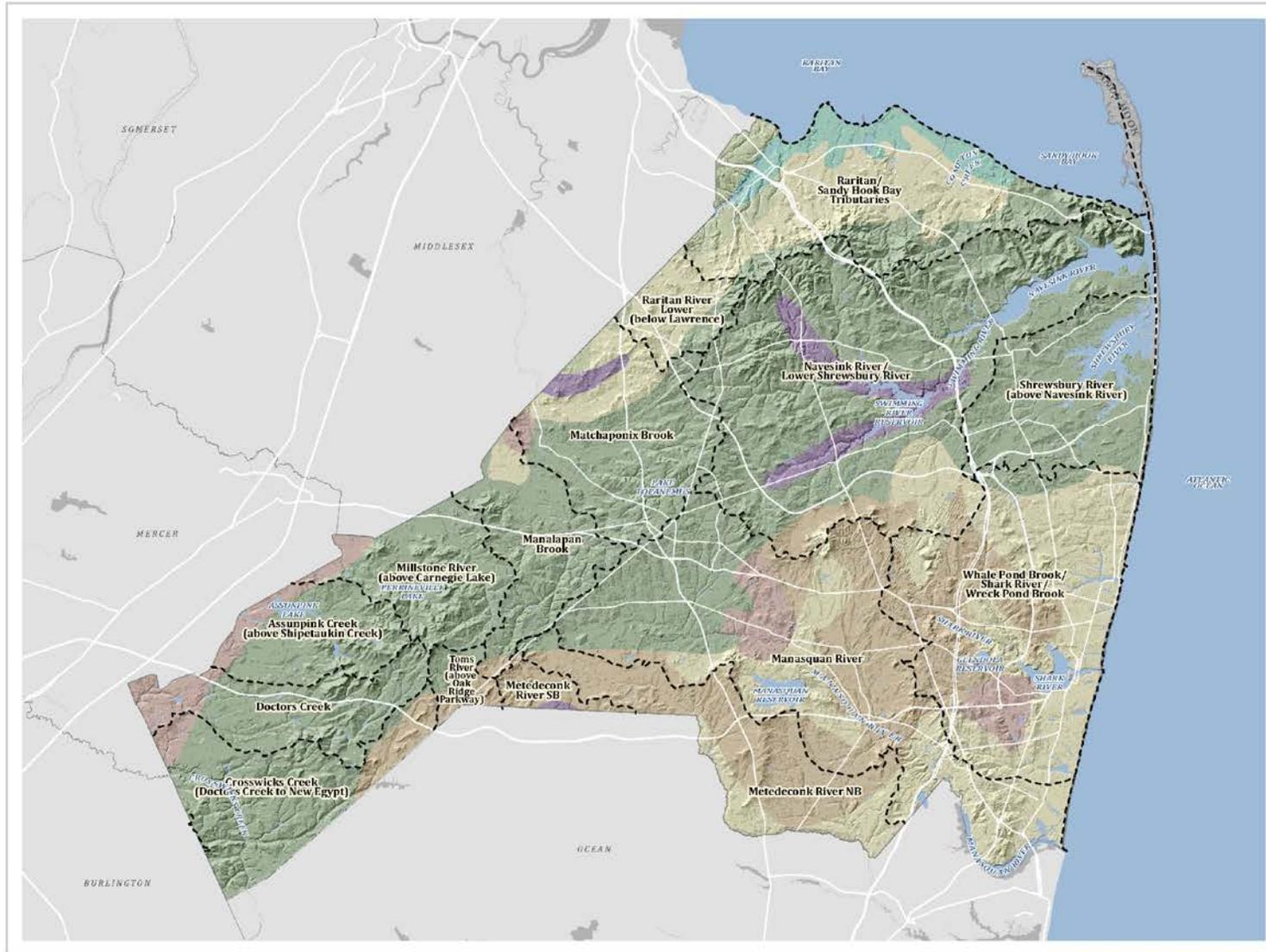


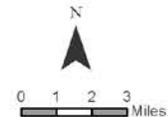
FIGURE 3.2
Generalized Soils Map
of Monmouth County

Monmouth County
Master Plan
October 2016

- HUC11 Watershed
- Freehold-Collington-Adelphia
- Keypoint-Elkton
- Kleij-Galestown-Evesboro-Downer
- Lakewood-Lakehurst-Evesboro-Atsion
- Manahawkin-Lakehurst-Berryland-Atsion
- Sassafras-Downer
- Udorhents-Sullaquents
- Udorhents-Pasaments-Hooksan

This map was developed using Monmouth County Digital Data from the Monmouth County Division of Planning GIS Section, and the New Jersey Office of GIS. Soil classifications were derived by generalizing the more detailed SSURGO soil survey maps by Soil Survey Staff at the Natural Resources Conservation Service Division of the United States Department of Agriculture.

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.



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This map was developed using United States Department of Agriculture Geographic Information System digital data, but this secondary product has not been verified by USDA and is not state-authorized.



Manahawkin-Lakehurst-Berryland-Atsion: This map unit surrounds rivers and streams throughout Monmouth County and is generally associated with freshwater wetlands. Areas of considerable size include lands surrounding Pine Brook in Manalapan, as well as the areas comprising the Swimming River Reservoir. These areas are generally wooded and are unsuitable for most uses due to a seasonal high water table and frequent flooding. The land is somewhat to very poorly drained. The soils feature mucky and sandy characteristics and are found on floodplains, broad flats, and lowlands.

Sassafras-Downer: This map unit composes land in Allentown and Upper Freehold bordering Middlesex County, as well as small pockets around western Englishtown, northwestern Howell, and central Wall. This nearly level to steep unit features well drained to moderately well drained land found on divides, side slopes, depressions, swales, and low divides. The surface soil features different mixtures of loam including sand, gravel, and clay. Most of this area is suitable for common field crops, vegetables, and horse farms. Some areas are considered urban.

Udorthents-Sulfaquents: Areas of this map unit, clustered around the Bayshore from Keyport to Keansburg and Middletown, are characterized by poorly drained to very poorly drained soils typical of marshes and estuaries. The soil features a high water capacity and undeveloped lands are generally used for wildlife habitat. Also included as part of this map unit are areas altered by excavating or filling such as old sand or gravel pits, typically in urbanized areas.

Hooksan-Psamments-Udorthents: Most land of this map unit, found in areas of Sea Bright and Monmouth Beach, have been highly developed over loose, sandy soils formed from past coastal dunes. Soils of the nearly level land are excessively drained to poorly drained depending upon the mix of sand and sediment. The low

water capacity of the soil mixed with the high wind energy of the area restricts vegetative growth to plants that can withstand salt spray and drought condition, typical of coastal maritime forests, such as Sandy Hook.

Monmouth County holds approximately 59 square miles of surface water all of which are important for drinking, stormwater collection, farming, and recreation according to the [Natural and Cultural Features of Monmouth County \(2010\)](#) report. Surface water designated for drinking is stored in the county's four reservoirs: Swimming River, Glendola, Manasquan, and the Brick Reservoir, which is partially in Monmouth County and partially in Ocean County. Numerous small lakes and ponds are found throughout the county, both natural and manmade.

The Monmouth County Health Department (MCHD) monitors water quality throughout the county. The MCHD participates in the New Jersey Department of Environmental Protection (NJDEP) Cooperative Coastal Monitoring Program. The MCHD also samples select unguarded bay and river beaches on a weekly basis during the beach bathing season. The MCHD issues beach advisories and closures as necessary based upon their monitoring results. The majority of Monmouth County Beach Advisories and/or closures are caused by stormwater runoff. The quality of Monmouth County's surface waters can experience rapid degradation in the hours following a large storm event.

The county has three major drainage basins: the Atlantic Coastal, the Raritan, and the Delaware. These are delineated on [Figure 3.3: Watersheds of Monmouth County Map, 2016](#). Drainage basins can be further divided into watersheds, which are all of the land that drains to one water body such as a river, lake, stream or bay. These land areas are separated by divides of high ground, where each side drains to a different body of water and the watersheds are generally named for the drainage endpoint.



Figure 3.3: Watersheds of Monmouth County Map, 2016

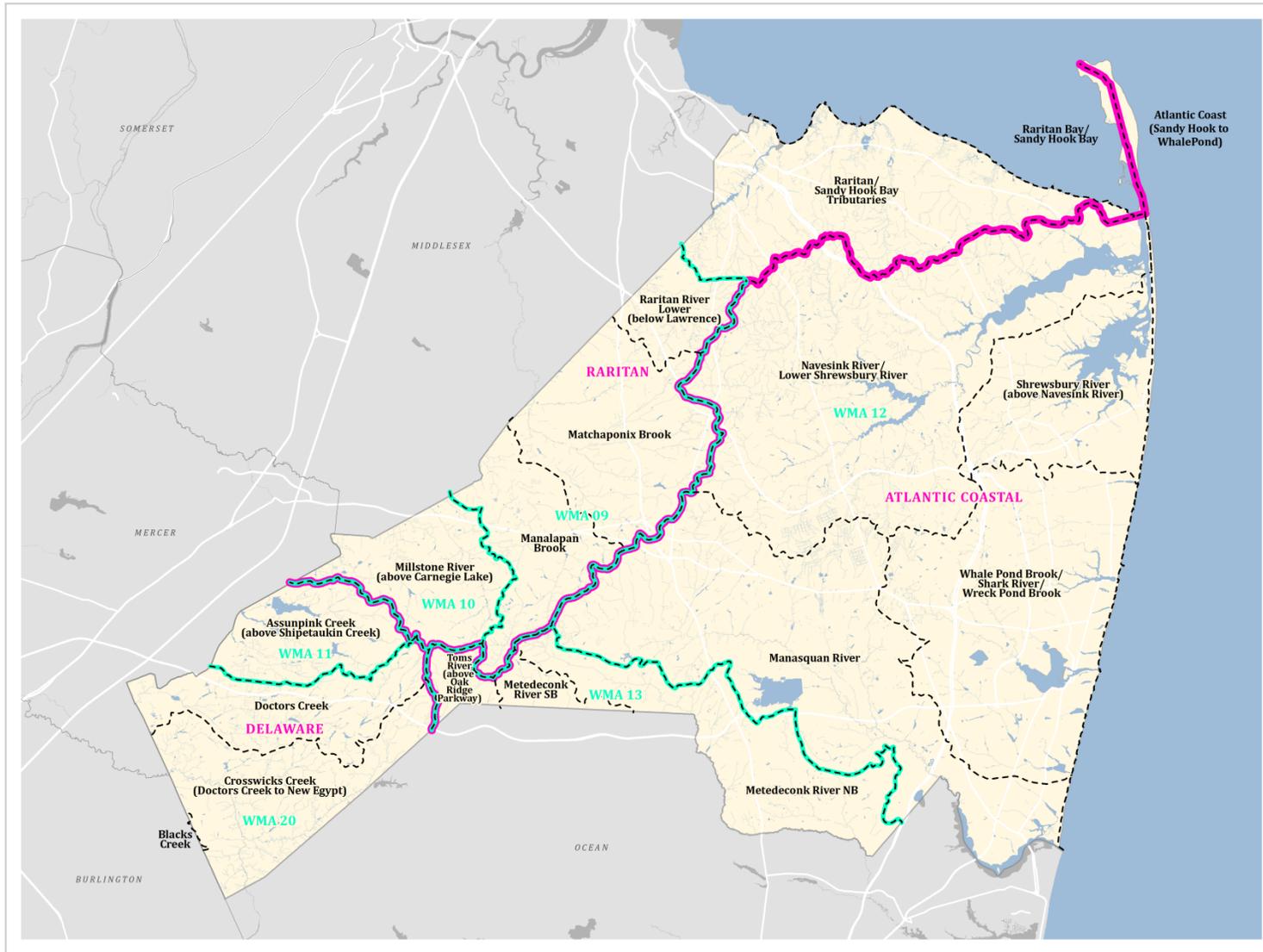
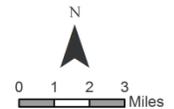


FIGURE 3.3
Watersheds of
Monmouth County Map
Monmouth County
Master Plan
 May 2016

- Major Drainage Basin
- Watershed Management Area
- - - HUC11 Watershed

This map was developed using Monmouth County Digital Data from the Monmouth County Division of Planning GIS Section, New Jersey Office of GIS, and the NJDEP.



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The United States Geologic Survey (USGS) divides all land by Hydrologic Units. Each Hydrologic Unit is further subdivided into smaller and smaller units and classified by the 14 digit Hydrologic Unit Codes (HUCs). There are 21 major regions in the U.S. The first two numbers in the HUC reference the region. All of NJ is within the second region and therefore all HUCs within the state begin with '02'. NJ is further divided into two subregions which provide the third and fourth digit of all HUCs within the state: '03' for Lower Hudson and '04' for Delaware. Monmouth County has drainage units in both subregions. Additional digits are added to the codes as the units are further subdivided. NJDEP primarily uses the HUC 11 divisions. New Jersey's HUC 11s range in size from 3 to 349 square miles, with an average size of 60 square miles. Figure 3.3: delineates the HUC 11 watersheds within Monmouth County. NJDEP aggregates the HUC 11s in the state into 21 Watershed Management Areas (WMA). Monmouth County has land within six of these WMAs. [Figure 3.3: Watersheds of Monmouth County Map](#) provides the WMA boundaries.

Quality, quantity, and drainage patterns of water in a watershed are affected by human land use and development. Impervious surfaces, such as paved roads and buildings, can interrupt the natural flow of stormwater into streams or groundwater percolation and aquifer recharge. Storms can wash chemical residue, litter, and organic debris into surface water contributing to flooding and impairing water quality.

Plans can be generated to improve water resources through effective management of land use/land cover activities. Best watershed management practices, such as the re-vegetation of a bulkheaded lake or retrofitting storm drains to remove sediments from stormwater, can be key components of a watershed management program.

This discussion of physiography, soils, and water resources is just a small summary of the significant natural resources found in Monmouth County. Inventories of the local natural and cultural resources have

been prepared over the years by the county and most municipalities. Those inventories provide a much more in-depth analysis of the resources, their value, protection efforts, and stewardship needs.

3.2.2 Advisory Committees

Monmouth County Environmental Council (MCEC): The Monmouth County Board of Chosen Freeholders formed the MCEC by resolution in 1972. The mission of the MCEC is to advise the Monmouth County Planning Board on matters relating to conservation and the environment. Among its duties, the council is charged with inventorying and evaluating the physical and natural features of the county; establishing priorities for preservation; reviewing proposed environmental legislation; educating the public on related issues; and furthering the environmental preservation, protection, and interests of the county. Over the years, the MCEC has received a number of grants to fund specific projects such as the construction of a rain garden at Brookdale Community College. MCEC members also act as liaisons to local municipal environmental commissions and regional groups related to watershed, environmental, sustainability, and natural resource initiatives. The Division of Planning provides staff support to the MCEC.

Municipal Environmental Commissions: In 1968, the NJ State Legislature passed N.J.S.A. 40:56A authorizing municipalities to create by ordinance a municipal conservation commission "...for the protection, development or use of natural resources, including water resources, located within its territorial limits." In 1972, the legislature amended that law, changing the name to environmental commissions while expanding their responsibilities to include pollution prevention and solid waste management. The 1972 amendment also allowed the establishment of joint commissions consisting of two or more municipalities. Subsequent amendments in 1975 and 1989 further refined membership and duties of these commissions. In Monmouth County, 35 municipalities have commissions formed under N.J.S.A. 40:56A. A number of other municipalities have formed similar groups



with somewhat different responsibilities, calling them such things as an environmental advisory committee. Still other municipalities have joined additional duties, such as those that might typically be associated with shade tree commissions. The vast majority of municipalities in Monmouth County have some form of environmental advisory body. Figure 3.4: Municipal Environmental Groups provides the name of groups charged with monitoring municipal environmental matters, and when known, the year they were formed.

NJ Department of Agriculture - State Soil Conservation Committee (SSCC): The SSCC, established by statute in 1937, administers the state natural resource conservation program. SSCC membership includes the Secretary of Agriculture, the Commissioner of the NJDEP, the Director of Rutgers Cooperative Extension, the Dean of Cook College, an appointee of the Governor, and six local soil conservation district supervisors. Under the NJ Natural Resources Program, there are 15 local soil conservation districts.

Freehold Soil Conservation District: The local conservation district responsible for Monmouth County is the Freehold Soil Conservation District. The first of its kind in NJ, this district was incorporated in June 1938. Middlesex County is also under its jurisdiction. The district's mission is to "promote sound soil and water conservation practices on the land in order to protect our topsoil and water resources." Any land disturbance projects greater than 5,000 square feet on commercial, subdivided residential, mining, storage, landfill, or utility sites are required to submit a soil erosion control plan to the district for review and approval under the NJ Soil Erosion and Sediment Control Act.

State Agencies: The NJDEP has multiple divisions tasked with protecting New Jersey's, and therefore Monmouth County's, natural resources. These sections include the Division of Parks and Forestry, the Division of Fish and Wildlife, the Office of Coastal and Land Use Planning, the Division of Water Quality, and the Division of Water Supply and

Geoscience. These divisions oversee natural resource management on state owned land and also regulate the usage of natural resources by private landowners.

The NJDEP offers many programs to aid landowners, such as the [NJ Forest Stewardship Program](#), [NJ Farmland Assessment Program](#), and [Environmental Quality Incentives Program](#).

Federal Agencies: Under the direction of the U.S. Department of Agriculture (USDA), the [Natural Resources Conservation Service](#), formerly the Soil Conservation Service, provides technical assistance on natural resource use and conservation matters to private landowners, farmers, local conservation districts, government agencies, tribes, and other groups interested in conserving natural resources. They also offer a number of [financial assistance programs](#) such as Agricultural Management Assistance, Conservation Stewardship, and Environmental Quality Incentives. The U.S. Forest Service, also under the USDA, manages and protects the national forests and grasslands. Their mission is "to sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations." The U.S. Forest Service also works with the NJDEP Forest Service on many projects sustaining healthy woodlands throughout the state.

3.2.3 Supportive Reports and Guiding Documents

Monmouth County Division of Planning

The Division of Planning assists the MCEC and the Monmouth County Planning Board (MCPB) in the preparation of numerous studies, reports, white papers, and brochures.



Figure 3.4: Municipal Environmental Groups

Municipality	Name	Year Formed
Aberdeen	Environmental & Shade Tree Advisory Board	1973
Allenhurst	none (1)	
Allentown	Environmental Commission	1975
Asbury Park	Environmental/Shade Tree Commission	2000
Atlantic Highlands	Environmental Commission	1998
Avon-by-the-Sea	Environmental Commission	1992
Belmar	Environmental Commission	
Bradley Beach	Environmental Commission	
Brielle	Environmental Commission	1972
Colts Neck	Environmental Commission	1973
Deal	none (1)	
Eatontown	Environmental Commission	1974
Englishtown	none (1)	
Fair Haven	Environmental Commission	1970 (2)
Farmingdale	Environmental Advisory Committee (1)	
Freehold Borough	none (1)	
Freehold Township	Environmental Commission	1971
Hazlet	Environmental Commission	1982
Highlands	Environmental Advisory Committee	
Holmdel	Environmental Commission	1973
Howell	Environmental Commission	
Interlaken	Borough Council serves the function (1)	
Keansburg	none (1)	
Keyport	Environmental Commission	
Lake Como	Environmental Commission	
Little Silver	Environmental Commission	1972 (2)
Loch Arbour	none (1)	
Long Branch	Environmental Commission	1972
Manalapan	Environmental Commission	1993
Manasquan	Environmental Commission	1972



Figure 3.4: Municipal Environmental Groups (continued)

Municipality	Name	Year Formed
Marlboro	Environmental Commission	
Matawan	Environmental Commission	1971
Middletown	Environmental Commission	1969 (2)
Millstone	Environmental Commission	1971
Monmouth Beach	Environmental Commission	1972
Neptune City	Environmental Committee	
Neptune Township	Environmental/Shade Commission	
Ocean	Environmental Commission	1971 (2)
Oceanport	Environmental Commission	
Red Bank	Environmental Commission	1971 (2)
Roosevelt	Environmental Commission	
Rumson	Environmental Commission	1969
Sea Bright	Environmental Partnership Committee	1972 (2)
Sea Girt	Environmental Commission	
Shrewsbury Borough	Environmental Commission	1970 (2)
Shrewsbury Township	none (1)	
Spring Lake	Environmental Commission	1991
Spring Lake Heights	Environmental Commission	2003
Tinton Falls	Environmental Commission	1989
Union Beach	none (1)	
Upper Freehold	Environmental Advisory Committee	2004
Wall	Environmental Advisory Committee	1978
West Long Branch	Environmental Commission	1983

Sources: Municipal ordinances and websites unless otherwise noted as follows: (1) MCEC records or (2) Association of New Jersey Environmental Commissions website

Natural Features Study for Monmouth County (1975) and Associated Background or Focused Documents: The MCEC was formed by the Board of Chosen Freeholders with an acknowledgement of the importance and sensitivity of the county’s

natural resources along with the need to protect them. One of the original priorities given to the MCEC was to inventory the natural features of Monmouth County. Its response was to immediately begin preparation of an Environmental Quality Index (published in



1973) and Development Suitability Map (1974). These components paved way for the *Natural Features Study for Monmouth County (1975)*. The first part of the *Natural Features Study* was a complete inventory of natural features and resources, intended to provide a sound environmental basis for future planning. Chapters include geography (physical location, topography, drainage patterns, and climate), geology (general geology, stratigraphy, soils, slope, and acid soil), water resources (watersheds and streamflow, ponds and lakes, reservoirs, and groundwater), ecology (vegetation, wetlands, and unique areas), and development suitability (floodplains, watershed areas, aquifer recharge, wetlands, poorly drained soils, steep slopes, agricultural lands, coastal beaches, suitability by planning area, and recommendations). Composite maps showing levels of development suitability were provided in the 1975 printing. Due to the study's popularity, it was reprinted in November 1976 and again in January 1988. The third and final printing in 1988 removed the then outdated Development Suitability Chapter and referred readers instead to the [Monmouth County Growth Management Guide \(1982\)](#). The 1988 printing also referred readers to the *Monmouth County Open Space Guide (1983)*, [Bayshore Waterfront Access Plan \(1987\)](#), [Land Use in the Swimming and Manasquan Reservoir Watersheds \(1985\)](#), *Growth Management Techniques (1987)*, an updated *Monmouth County Environmental Quality Index (1980)*, *Monmouth County Historic Sites Inventory (1986)*, and the *Monmouth County Historic Preservation Guide (1987)*. In the final printing, changes were also made to the "Unique Areas" section of the ecology chapter pertinent to the adoption of the *Monmouth County Unique Areas Study (1978)*.

Following the adoption of the *Monmouth County Master Plan (2016)*, the MCEC and Division of Planning staff will complete an update to the countywide *Natural Features Study*, which is tentatively titled the *Monmouth County Natural Resources Inventory*. Once approved by the MCEC and accepted by the MCPB,

this new document will be considered a supportive and consultative document to the *Master Plan* and posted on the county website.

Regional Ecological Resource Inventories: Three regional Ecological Resource Inventories were prepared as regional updates to the earlier countywide *Natural Features Study (1975)*, the *South Coast Environmental Planning Region Ecological Resource Inventory (1996)*, *North Coast Environmental Planning Region Ecological Resource Inventory (1999)*, and *Mid-Coast Environmental Planning Region Ecological Resource Inventory (2000)*. With the preparation of each of these documents the regional lists of unique areas and historic resources, as well as the existing land use chapters, saw the most significant revisions.

Monmouth County Unique Areas Study (1978) and Areas of Significant Environmental Quality (ASEQ): The *Monmouth County Unique Areas Study* fulfilled the MCEC's initial goal of producing a study of exceptional sites of environmental or ecological significance in the county. It was intended to generate an awareness of and respect for the environmentally aesthetic areas and important natural resources. The 1978 study was expanded from a chapter in the *Natural Features Study (1975)* and, after careful analysis, modified the list of sites. The flora, fauna, and a simple ecosystem analysis consisting of community type, successional stage, soil type, characteristics, and other pertinent facts (historical or archeological significance) of each unique area was documented in the 1978 study. The areas are categorized as bogs, marshes, and swamps; waterways; coastal wetlands; lakes, ponds, and reservoirs; meadows, parks, and forests; and archeological and geological areas. As the purpose of the *Unique Areas Study* was to identify, survey, and report on the county's unique areas to encourage preservation, it has proven to be successful. Over the years, a number of these sites have been permanently preserved.



From Unique Area to County Park: Perrineville Lake

The *Natural Features Study for Monmouth County (1975)*, prepared by the Monmouth County Environmental Council (MCEC), selected 43 Unique Areas, most of which were also identified as part of a 1973 Monmouth County Park System (MCPS) natural lands survey. These sites were recognized by both groups as having unique natural value. The MCEC's *Monmouth County Unique Areas Study (1978)* further refined the list and provided more detailed descriptions and classifications for each site. The stated intent was to "generate awareness of and respect for (these areas)" and encourage efforts toward "preserving our forests, waters, wetlands and wildlife from needless destruction."



Perrineville Lake
Source: Linda Brennen

Perrineville Lake, located in Millstone, was cited on the original 1975 list for its scenic qualities. The lake, associated wetlands, and surrounding hills were recognized in the 1978 study as providing abundant opportunities for food and cover for smaller mammals, amphibians, reptiles, waterfowl, and songbirds. The *Monmouth County Park, Recreation, and Open Space Plan (1991)* identified an area of roughly 500 acres surrounding Perrineville Lake as a recommended acquisition site for a regional park. The varied landscape was considered suitable for possible active recreation, preservation and a future linkage to an existing recreational site in Roosevelt Borough.

In 1999, the MCPS was afforded the opportunity to acquire the first two parcels totaling just over 90 acres, including the 16-acre lake. Within ten years, Perrineville Lake Park grew to over 900 acres. Today the park encompasses 1,236 acres and is now the third largest park in the MCPS system. The nearly five miles of multi-use trails wander the interior of the park and connect to both New Jersey's Assunpink Wildlife Management Area and the Borough of Roosevelt. Fishing, boating, walking, birding, and picnicking are among the favorite pastimes of roughly 12,000 annual visitors to this scenic mix of fields, woods, and wetlands.

Perrineville Lake Park is just one example of permanent preservation that has resulted from the early MCPS and MCEC work to identify the county's valuable natural resource.

While the literal definition of unique is *one of a kind*, even the earliest county reports, while being selective, included more than one waterway, wetland, and forest. Therefore, in 2007 the Unique Areas were renamed Areas of Significant Environmental Quality (ASEQ), although the study was not formally updated to reflect the new name. The MCEC continues to work with municipalities and the Monmouth County Park System (MCPS) to nominate additional worthy sites. Division of Planning staff, in conjunction with MCEC, continues the identification, nomination, and evaluation of ASEQs. Development of a new updated ASEQ study is being coordinated with the update to the *Natural Features Study*.

Eco-Tips Brochures: In an effort to educate the public on the important local natural features and environmental issues, the MCEC published a series of [Eco-Tips Brochures](#). Topics include: Coastal Dunes; Lawns & Gardens; Managing Plant Invaders; Problem Geese; Stream Corridor Protection; Tree Preservation; What is a Watershed?; Energy for the Future; Building a Rain Garden; and Stormwater Management.

Monmouth County Park System (MCPS)

The MCPS is a longstanding and indispensable partner of the Division of Planning. The MCPS produces many documents, a number of which are discussed in the 4.0 Open Space Element of this *Master Plan*. Several MCPS publications are focused on the county’s natural features in general or on the flora and fauna of specific sites.

Natural Resources Management: The MCPS has developed a series of [objectives and strategies](#) for natural resources management including public utilization and appreciation, forest health, field management, and invasive species management. They have also completed various studies and prepared a number of educational documents including: Select Forest Communities of Monmouth County Parks, Protecting the Open Space Landscapes

of Monmouth County, [Field Management in Monmouth County Parks](#), [Visual Report on the Impacts of White Tailed Deer on Monmouth County Park Lands](#), and [Tips for Planting a Rain Garden](#).

Nature Series: The MCPS has produced a series of [brochures](#) on the birds, snakes, turtles, amphibians, mammals, marine mammals, fish, seashells, insects, trees, and invasive species found in Monmouth County.

Park Brochures: MCPS has brochures prepared for each of their park sites. These brochures typically provide a map and summary of the facilities and sometimes they include a discussion of the natural environment. They are available at the parks and on the [MCPS website](#) accessible from the individual page provided for each park property.



ASEQ Estuarine Pond (Border between Neptune and Wall Townships)
Source: Linda J. Brennen



Monmouth County Health Department (MCHD)

The MCHD is another significant partner to the Division of Planning. MCHD works “to empower county residents to achieve optimum health by providing public health services.” MCHD administers an array of natural resource related projects, especially through its [Environmental Health Program](#). In addition to providing comprehensive [Annual Reports](#), the MCHD generates [memos, presentations, and reports](#) on the county’s air quality, algae, coastal waters, geographic information system (GIS) reports, hazmat, historical information, household hazardous waste, and watershed and water quality management. MCHD is an active member in NJDEP’s [Cooperative Coastal Monitoring Program \(CCMP\)](#), which monitors recreational beach water quality. CCMP provides information regarding [current beach status](#), water quality sample results, reports of beach advisories, and beach closings. MCHD also prepared a study entitled [Natural and Cultural Features of Monmouth County \(2013\)](#) as background reading for environmental health investigations.

New Jersey Department of Environmental Protection (NJDEP)

An imperative asset to the state and county’s natural resource protection efforts is the NJ Division of Fish and Wildlife’s Endangered and Nongame Species Program’s [Landscape Project](#). In 1994, the program developed a landscape level approach to the protection of species that are endangered, threatened, or of special concern. The Landscape Project overlays land use/land cover (LU/LC) data with documented species location data in

GIS. The goal of the Landscape Project is “to protect New Jersey’s biological diversity by maintaining and enhancing imperiled wildlife populations within healthy, functioning ecosystems.” Dividing the state into landscape regions based on plant and animal communities, this project identifies and maps imperiled species. GIS maps contain data on species location, LU/LC, and life history for endangered, threatened, and special concern wildlife species throughout the state. The Landscape Project is updated periodically to reflect changes in LU/LC, additional species, and species status changes. The county regularly uses these maps, along with local decision makers, municipal planners, state agencies, and the general public. The NJDEP’s Division of Fish and Wildlife generated the [2005 State Wildlife Action Plan](#) which is currently being updated and maintains [lists of New Jersey’s Endangered and Threatened Species](#). Staff of the Endangered and Nongame Species Program has developed a variety of [documents](#) related to studies they have performed.



Seals resting on Skeleton Hill Island in Sandy Hook Bay

Source Linda J. Brennen

Municipal Natural Resource Inventories

Many municipalities in Monmouth County have been proactive with natural resource protection and identification. Through the creation and maintenance of an Ecological or Natural Resource Inventory, municipalities gain a comprehensive catalog of resources in their community along with providing a foundation for land use and conservation planning decisions. These inventories offer a vital educational resource to residents and public officials. Often compiled by municipal environmental commissions, these reports typically consist of an introduction and



municipal profile followed by chapters on climate, geology, geography/topography, soils, hydrology, vegetation, critical areas, existing land use, open space, habitats, contaminated sites, air quality, and historic resources. Figure 3.5: Municipal Natural Resource Inventories lists the names and dates of the known municipal resource inventories. Links to available online inventories is also provided.

3.3 Emerging Issues and Long Range Challenges

3.3.1 Water Conservation: Meeting the summer outdoor water need is a significant challenge in our area. Water purveyors are looking at enhancing reservoir capacity by decreasing sedimentation. Other options may possibly include the addition of tariffs; limiting outdoor use to odd/even days; and applying tiered water rates

3.3.2 Energy: The use of natural resources for energy is not, in and of itself, an emerging issue. However, under the category of nonrenewable resource extraction and transport, several newer technologies have come to the forefront in the past decade which could impact our area in the years to come. Some of the more recent newsworthy issues include the hydraulic fracturing (“hydro-fracking” or “fracking”) method of natural gas extraction, transport of liquid natural gas, and the proposal of new rights-of-way for pipelines and electricity. Energy conservation efforts also continue to result in emerging technologies which could reduce the per capita consumption of nonrenewable energy related resources.

3.3.3 Natural Resource Protection and Sustainability: It is vitally important that the use of valuable natural resources does not outpace the ability to replace those resources or that in order to use a certain resource, other resources are not damaged. Employing sound stewardship methods and implementing conservation measures are necessary to ensure that sufficient resources will be available for the generations that follow.

3.3.4 Public-Private Partnerships: As project funding dwindles, the need for additional and more innovative partnerships increases. These partnerships might be for research, preservation, or stewardship. More governmental agencies are reaching out to academia, corporations, nonprofits, and volunteer groups in order to share resources and stretch dollars.

3.3.5 Long Range Challenges

- Various NJ State plans, rules, and regulations that are aimed at protecting natural resources have become outdated and are in need of review and updating in order to remain effective in a changing world.
- Funding for protection and conservation projects remains limited (e.g. grants and low-interest loans).
- The increasing number of invasive species in NJ threatens our natural and agricultural heritage.
- Development continues to encroach on the county’s environmentally sensitive and critical lands, devaluing the integrity of existing natural systems, and removing the last vestiges of natural lands.
- Disaster preparedness planning needs to incorporate natural resource protection and planning for potential environmental changes, such as sea level rise.
- University research for natural resource management funding is in short supply.
- Sea level rise continues to impact coastal resources. Beaches and wetlands are drowning; the saline influence in coastal waterways is shifting; and maritime forests and coastal vegetation are at risk.

It is important that these challenges be monitored and that efforts be made, where possible, to work with partners and stakeholders to protect and maintain the county’s natural resources.



Figure 3.5: Municipal Natural Resource Inventories

Municipality	Resource Inventory	Date
Aberdeen	Natural Resource Inventory	2002
Allentown	Natural Resource Inventory	2002
Atlantic Highlands	Our Town's Environment	2000
Belmar	Belmar: A Natural & Historic Treasure	2008
Brielle	Natural Resource Inventory	1978
Colts Neck	Natural Resource Inventory	1983
Fair Haven	Environmental Resource Inventory	1991
Highlands	Phase I Natural Resource Inventory	1992
Howell	Environmental Resource Inventory	2008
Keyport	Natural Resource Inventory	2007
Lake Como	Natural Resources Inventory: Borough of South Belmar	1995
Little Silver	Environmental Resource Inventory	2008
Long Branch	Environmental Resource Inventory	2011
Manalapan	Natural Resource Inventory	1976
	Natural Resource Inventory Addendum and Supplement	1992
	Natural Resource Inventory, Phase 2	1993
Manasquan	Natural Resource Inventory	1992
	Natural Resource Inventory, Phase II, Volume II	1993
Marlboro	Green Buildings & Environmental Sustainability Plan Element	2013
Millstone	Natural Resource Inventory - Phase I	1991
	Natural Resource Inventory Update Phase II	1993
Neptune Township	Environmental Resource Inventory	2003
Oceanport	Environmental Resource Inventory	undated
Red Bank	Environmental Resource Inventory, Final Report Phase I	1994
	Environmental Resource Inventory, Phase Two	1995
Roosevelt	Natural Resources Inventory: Phase I	1991
	Natural Resources Inventory: Phases II and III	1993
Shrewsbury Borough	Environmental Resource Inventory	2011
West Long Branch	Natural Resources Inventory	1995

Sources: Municipal websites, direct communication, and Rutgers University Community Repository



3.4 Natural Resources Stakeholder Actions and Efforts

3.4.1 Monmouth County Actions and Efforts

In addition to the current efforts to update the countywide *Natural Features Study* and report on Areas of Significant Environmental Quality (ASEQ), the MCEC hosts annual environmental roundtable events to bring to the forefront issues of concern to Monmouth County. One of the earliest roundtables, held in 1992, introduced the concept of regional planning on a watershed basis. Recent programs have focused on such natural resource related topics as building rain gardens for stormwater capture, energy initiatives, and community gardening.

The MCPS preserves important natural resources through land acquisition and strives to maintain or enhance the biodiversity of land holdings in areas that are not specifically focused on active recreation. Most holdings have undergone an analysis of flora and fauna along with habitat suitability and diversity that are considered in planning for future park facilities, trails, and habitat maintenance, preservation, or enhancement. The MCPS has also dedicated resources to environmental education including the development of Environmental Centers at the Manasquan Reservoir and Huber Woods. They offer a great variety of nature oriented programming including: [Environmental Education Programs for Groups](#), [Scout Troop Activities](#), [Nature Adventures Patch Collectors](#), [Outdoor Adventures Program](#), and a ten park Scavenger Hunt called [Rockin’ the Trails](#). Preserved lands, whether held by the MCPS, state, or Federal Government, are depicted on [Figure 3.6: Environmental Regulatory Features Map, 2016](#).

3.4.2 State Efforts

Federal actions are, at times, passed to the individual states for enforcement and implementation. States also have the ability to develop additional policies, laws, and regulations for use within their jurisdictions. Figure 3.7: Significant State Environmental Laws lists

Figure 3.7: Significant State Environmental Laws

Citation	NJ Environmental Acts, Rules, and Regulations
N.J.A.C. 7:1H	County Environmental Health Act
N.J.A.C. 7:5A	Natural Areas and the Natural System
N.J.A.C. 7:7	Coastal Permit Program Rules
N.J.A.C. 7:7A / N.J.S.A. 13:9B	Freshwater Wetlands Protection Act and Rules
N.J.A.C. 7:7E	Coastal Zone Management Rules
N.J.A.C. 7:8	Stormwater Management Rules
N.J.A.C. 7:10	Safe Drinking Water Act
N.J.A.C. 7:13 / N.J.S.A. 58:16A	Flood Hazard Area Control Act and Rules
N.J.A.C. 7:15	Water Quality Management Planning Act
N.J.A.C. 7:27	Air Pollution Control Act
N.J.S.A. 12:3	Tidelands Act
N.J.S.A. 12:5-3	Waterfront Development Act
N.J.S.A. 13:19	Coastal Area Facility Review Act
N.J.S.A. 13:9A	Wetlands Act of 1970
N.J.S.A. 58:10A	Water Pollution Control Act

several significant NJ environmental acts, rules, and regulations in place.

NJ also preserves land for resource protection. The NJDEP has been tasked since 1970 with the management of natural resources within the state. This is done through a number of methods including direct land preservation, issuing permits for resource use, and enforcement of



Figure 3.6: Environmental Regulatory Features Map, 2016

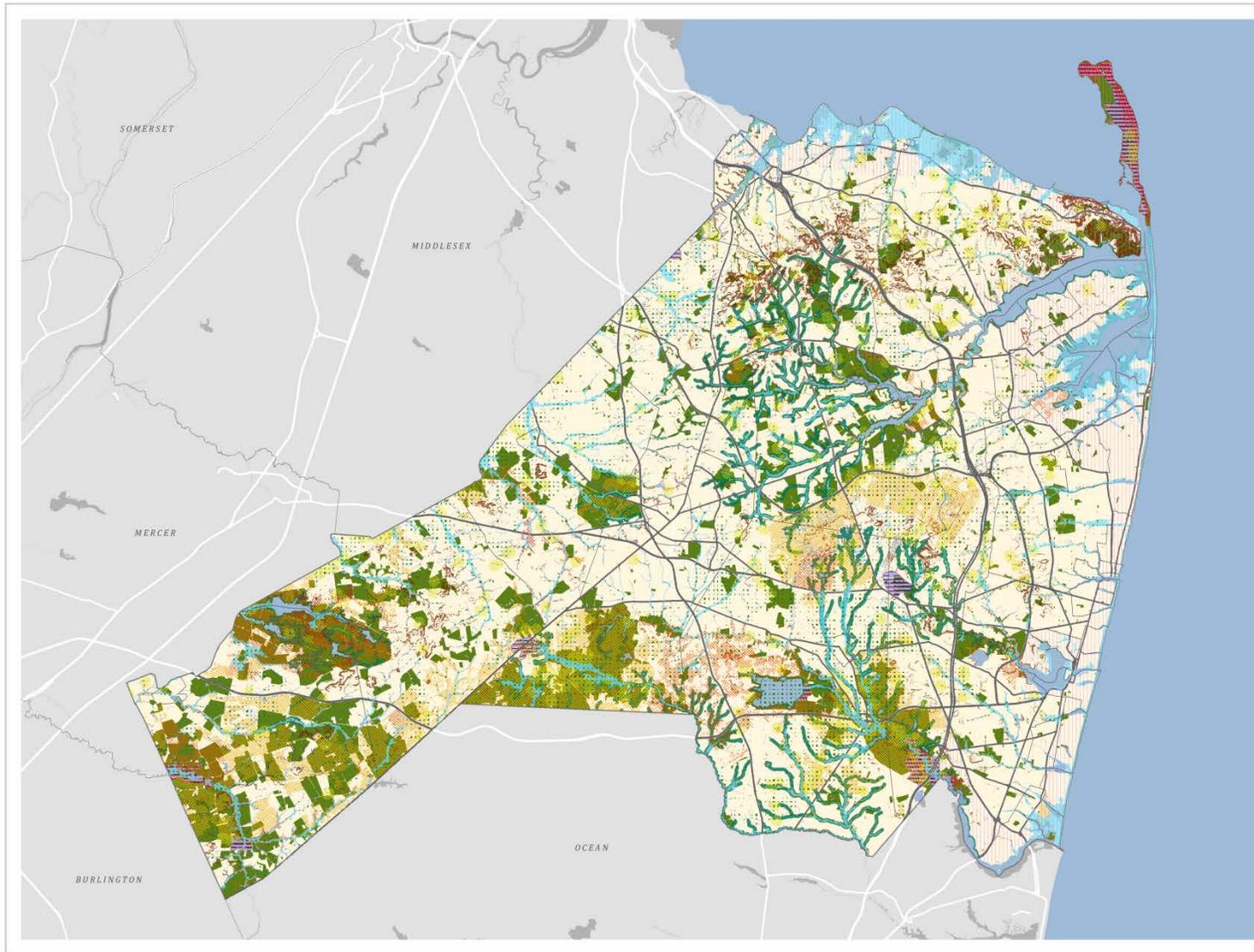


FIGURE 3.6
Environmental Regulatory
Features Map

**Monmouth County
Master Plan**

May 2016

- NJDEP Wetlands
- Coastal Areas Facilities Review Act (CAFRA) Boundary
- Vernal & Potential Vernal Habitat
- State Threatened Species Habitat
- State Endangered Species Habitat
- Federal Listed Species Habitat
- NJDEP Natural Heritage Sites
- Category 1 Stream Buffer (300')
- Preserved Land
- Flood Insurance Risk Zones**
- 0.2% Annual Chance
- 1% Annual Chance

This map was developed using Monmouth County Digital Data from the Monmouth County Division of Planning GIS Section, New Jersey Office of GIS, Monmouth Conservation Foundation, FEMA, and the National Park Service. The municipal open space dataset is for planning purposes and may be missing properties or contain inaccuracies. The County GIS parcel data layer is intended for informational purposes only and is not intended to replace any legal record.



This map was created using GIS digital data supplied by county and external resources. Data accuracy is limited by the accuracy and scale of the original source. The digital data herein is for consultative and deliberative purposes only. Site specific conditions should be verified.

This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.



environmental laws and regulations. NJDEP also promotes resource protection through grants and environmental education.

Some regulations apply to specific geographic areas, such as the Coastal Area Facilities Review Act (CAFRA) delineated CAFRA zone, wherein certain development activities require a permit. To protect the water quality of water bodies of significant importance, the NJDEP delineates Stream Buffers on Category 1 Waters. These buffers are vegetated areas adjacent to significant waterways (Category 1 Streams), which provide habitat, water quality, and flood protection to individual waterways. Any development or other disturbance in the buffer must be approved by through a NJDEP Division of Land Use Permit.

NJDEP's [Endangered and Nongame Species Program](#) designates state-level Threatened and Endangered Species in order to preserve the biological diversity of NJ. Habitats of these species are critical to their survival and these habitats are mapped by the NJDEP. [Natural Heritage Sites](#) are other areas of significant natural or biological diversity and mapped throughout the NJDEP's Landscape Project. Freshwater and coastal wetlands have also been mapped statewide by the NJDEP and are protected due to their high value as water retention basins, water filtration, coastal buffers, ecological habitat, and other ecosystem services.

Vernal pools are confined wetland areas which do not feature breeding fish populations. Vernal pools are inundated with water at least two months of the year and either dry out completely or to a very shallow water level at other points of the year. Certain amphibian species, known as "obligate vernal pool breeders", depend upon vernal pools for survival. Vernal pools, wetlands, Natural Heritage Areas, and Endangered Species habitat are given special management considerations during land use and other permit review processes, during which the NJDEP Division of Land Use Regulation may require any development application to be altered or denied in order to protect

these significant areas. [Figure 3.6: Environmental Regulatory Features Map](#) illustrates a graphic representation of these regulatory features and protected areas. The Environmental Regulatory Features Map also depicts preserved lands in Monmouth County including parcels held by the MCPS, NJDEP state parks, municipal land preserves, preserved farmland, and conservation easements.

3.4.3 Federal Actions

The Doctrine of Public Trust is defined as the historic principle that government holds resources in trust for public use. The development of environmental laws, rules, and regulations is an extension of the Public Trust Doctrine. The U.S. Congress has enacted numerous environmental laws and policies aimed at natural resource protection. Figure 3.8: Significant Federal Environmental Acts lists a few of the key federal acts that shape the current environmental laws and regulations.

To further resource protection efforts at the federal level, a number of governmental departments were created to oversee environmental and natural resource management. Over time, additional agencies were formed. Some of the key federal agencies involved in natural resource protection include: [United States Coast Guard](#) (1790), [Department of the Interior](#) (1849), [Department of Agriculture](#) (1862), [National Park Service](#) (1916), [Natural Resources Conservation Service](#) (1935), [Environmental Protection Agency](#) (1970), [Nuclear Regulatory Commission](#) (1975), and [Department of Energy](#) (1977). The Federal Government preserves large tracts of land, provides money for local resource protection, and controls the use or extraction of natural resources on federal lands through leases. The Federal Emergency Management Agency (FEMA) responds to natural disasters and oversees the National Flood Insurance Program. This program manages floodplain development, sets flood insurance regulations for property owners, and creates Flood Insurance Risk Maps (FIRM). Depending upon their mortgage, property owners within the mapped floodplain may be required to purchase flood insurance through the National Flood



Insurance Program. Monmouth County’s 0.2% and 1.0% annual Flood Risk Zones (the 500-year and 100-year floodplains, respectively) are delineated in [Figure 3.6: Environmental Regulatory Features Map](#).

3.4.4 Partnership Efforts

Monmouth County has participated in numerous partnership efforts to positively influence the preservation of natural resources in Monmouth County or to improve the quality of those resources. Past regional partnerships led to the designation of [Federal No Discharge Zones](#) in Monmouth County waters. Today the Manasquan, Shark, Navesink, and Shrewsbury Rivers hold that designation to prevent boats from discharging their waste. The county continues to monitor or be involved in multi-municipality or multi-county partnership efforts aimed at resource protection, management, or preservation.

Wreck Pond Brook Watershed Regional Stormwater Management Plan: Wreck Pond is a coastal lake in southern Monmouth County. The Wreck Pond Brook Watershed includes land within Spring Lake, Spring Lake Heights, Sea Girt, and Wall Township. High bacteria counts, following even small rainfall events, led to the closing of area beaches. Sedimentation contributed to eutrophication of ponds within the watershed and caused flooding. The Wreck Pond Brook Watershed Regional Stormwater Management Plan Committee was formed and grants from the NJDEP were secured to analyze the issues and begin to implement solutions. A number of studies have been prepared related to this effort including the [Wreck Pond Brook Watershed Regional Stormwater Management Plan \(2008\)](#), [Watershed - Based Implementation Plan \(2011\)](#), [Wreck Pond Brook Watershed Restoration Plan for Impaired Waters \(2015\)](#), and [Final Environmental Assessment: Restoring Wreck Pond Inlet \(2015\)](#).

U.S. Naval Weapons Station (NWS) Earle: NWS Earle was commissioned in 1943 as a U.S. Navy Base comprised of four sections. Mainside is the largest section consisting of 11,851 acres. It is located

Figure 3.8: Significant Federal Environmental Acts

Citation	Federal Environmental Act
16 U.S.C. §1431 et seq. and 33 U.S.C. §1401 et seq.	Marine Protection, Research, and Sanctuaries Act
16 U.S.C. §1531 et seq.	Endangered Species Act
16 U.S.C. §1451 et seq.	Coastal Zone Management Act
33 U.S.C. §1251 et seq.	Clean Water Act
33 U.S.C. §2601 et seq.	Shore Protection Act
33 U.S.C. §401 et seq.	Rivers and Harbors Act
42 U.S.C. §4321 et seq.	National Environmental Policy Act
42 U.S.C. §13201 et seq.	Energy Policy Act
42 U.S.C. §6901 et seq.	Resource Conservation and Recovery Act
42 U.S.C. §7401 et seq.	Clean Air Act
42 U.S.C. §9601 et seq.	Comprehensive Environmental Response, Compensation, and Liability Act (<i>Superfund</i>)

across parts of Colts Neck, Howell, Wall, and Tinton Falls. The 17-mile long federal Normandy Road/Rail Corridor connects Mainside to the 705-acre Waterfront Area, located in Middletown. The fourth section of Earle is the Pier Complex, which juts 2.2 miles offshore and is typically considered the division between Raritan Bay and the Sandy Hook Bay. Earle is the largest weapons station on the east coast and with its many wooded acres, the setting has been noted as one of the most serene and beautiful Naval installations in the country. NWS Earle has a history of working with the state, county, and surrounding municipalities in



efforts to enhance the local environment. Examples include assisting with the replacement of old mosquito ditches in the Pier Complex area that alleviated flooding in an adjacent neighborhood and providing a secure test location of the NY/NJ Baykeeper's oyster reef habitat restoration project. The U.S. Department of Defense (DOD) Office of Economic Adjustment promotes cooperative planning efforts between military installations and the surrounding communities. The DOD offers a grant program for the preparation of Joint Land Use Studies (JLUS) to assist the military and surrounding communities to identify compatible land use issues and seek ways to work together to reduce conflicts. Monmouth County has applied for a JLUS grant in coordination with NWS Earle.

Gateway National Recreation Area: The Sandy Hook Unit of Gateway National Park is currently working with stakeholders, including representation by the Board of Chosen Freeholders, to develop a vision for balanced redevelopment of the Fort Hancock area. The initiative is called [Fort Hancock 21st Century](#). Much of Sandy Hook has been left in a natural state with dunes and coastal wetlands. The National Park Service (NPS) and several other groups housed at Sandy Hook offer a number of nature based and environmental education programs onsite. The NPS posts a [calendar of events](#) on their website.

New York-New Jersey Harbor and Estuary Program: The Hudson River, Raritan River, the Arthur Kill, and numerous smaller rivers converge to form the New York-New Jersey Harbor Estuary. The Harbor and Estuary Program (HEP) was established in 1987 to protect this Estuary of National Significance. HEP is a partnership of federal, state, and local governments; scientists; civic and environmental advocates; the fishing community; business and labor leaders; and educators. The partnership produced a comprehensive *Conservation and Management Plan* in 1996 and the *2011 Action Plan*, which is being updated in 2016. During May 2016, the MCEC hosted a HEP Action Plan update forum in Atlantic Highlands as one of the council's regular community roundtables on

environmental issues.

Sustainable Raritan River Initiative: Numerous Monmouth County watersheds drain to the Raritan River or the Raritan Bay. The Sustainable Raritan River Initiative is a joint program between Rutgers University's Edward J. Bloustein School of Planning and Public Policy and the School of Environmental and Biological Science. The initiative in turn partners with the Sustainable Raritan River Collaborative, a network of over 130 organizations, governmental entities, and businesses in the Raritan region. All of these stakeholders work together in balancing the economic, social, and environmental objectives while pursuing the common goal of restoring the Raritan River, its tributaries, and its estuary. The five primary areas of concern for this initiative are:

1. Site remediation, rehabilitation, and reuse of abandoned and underutilized properties
2. Public access to and recreational use of the river
3. Stewardship, habitat restoration, and protection
4. Improved water quality and management of water quantity including stormwater
5. Balanced redevelopment for both economic growth and environmental quality

Their steering committee and staff members host topical workshops and an annual conference, provide technical assistance, assist with anchor projects, and manage communication and outreach, including monthly e-newsletters.

Barnegat Bay Partnership: The southernmost Atlantic Coastal watersheds of Monmouth County drain to the Barnegat Bay via the Toms River and the Metedeconk River watersheds. The Manasquan River Watershed is also hydrologically connected through the Intercostal Waterway that has its northern terminus on the southern bank of the Manasquan River.



The Barnegat Bay National Estuary Program (BBNEP) was founded in 1997 in an effort to protect the natural, cultural, and economic resources of the Bay. The *BBNEP Comprehensive Conservation and Management Plan* was approved by the partnership in 2002. The *Strategic Plan* was developed in 2008 to identify key issues, priorities, and tasks. In 2010, the group was renamed the Barnegat Bay Partnership (BBP). Updates to the *BBP Strategic Plan* have been completed in 2012 and 2016.

Metedeconk River Watershed Partnership: The Metedeconk Watershed encompasses about 90 square miles of southern Monmouth and northern Ocean Counties. The four Monmouth County municipalities within the watershed are Freehold Township, Howell, Millstone, and Wall. The river is potable water supply for parts of municipalities in both counties. The water supply facilities are operated by the Brick Township Municipal Utilities Authority (BTMUA). In January 2010, the BTMUA formed a bi-county/multi-municipality steering committee for the development of the *Metedeconk River Watershed Protection and Restoration Plan*, which was completed in May 2013. The steering committee continues to meet as needed to facilitate plan implementation.

3.5 Additional Resources and Funding Opportunities

Federal

- [Centers for Disease Control and Prevention \(CDC\)](#)
 - [Division of Community Health: Environmental Change](#)
 - [National Center for Environmental Health](#)
- [National Oceanic and Atmospheric Administration \(NOAA\)](#)
 - [NOAA Fisheries](#)
- [U.S. Department of Agriculture](#)
 - [Natural Resources Conservation Service](#)
 - [U.S. Forest Service](#)
- [U.S. Department of the Interior](#)
 - [Bureau of Land Management](#)

- [National Park Service \(NPS\)](#)
- [U.S. Geological Survey](#)
- [U.S. Fish and Wildlife Service](#)
 - [Endangered Species Program](#)
 - [National Wildlife Refuge System](#)
- U.S. Department of Transportation Federal Highway Administration
 - [Recreational Trails Program](#)
- [U.S. Environmental Protection Agency \(EPA\)](#)
 - [Clean Water Rule](#)
 - [Climate Change](#)
 - [Community Action for a Renewed Environment \(CARE\) Resource Guide](#)
 - [EJSCREEN: Environmental Justice Screening and Mapping Tool](#)
 - [Land and Cleanup](#)
 - [National Aquatic Resource Surveys](#)
 - Resource Conservation
 - [WaterSense](#)
 - [Water Infrastructure and Resiliency Finance Center](#)
 - [State and Local Climate and Energy Program Resources](#)
 - [Waste Information Resources](#)

State

- [New Jersey Department of Environmental Protection\(NJDEP\)](#)
 - [Bureau of GIS--Landscape Project Data](#)
 - [Data Miner](#)
 - [DEP Bulletin](#)
 - [DEP Online Business Portal](#)
 - [Division of Fish and Wildlife’s Endangered and Nongame Species Program](#)
 - [Electronic Compendium of Selected Environmental Standards](#)
 - [The Official Guide for NJ Fishing, Hunting and Wildlife App](#)
 - [Environmental Research Library](#)
 - [Grant and Loan Programs](#)
 - [NJ-GeoWeb](#)
 - [Office of Natural Resource Restoration](#)



- [Public Records \(OPRA\)](#)
- [The State Environmental Education Directory \(SEEDs\)](#)
- [State of New Jersey Department of Agriculture](#)
 - [Conservation Districts in NJ](#)
 - [Conservation Education](#)
 - [Natural Resources Conservation](#)
 - [NJDEP Construction Stormwater Permit Phase II](#)
 - [NJ Erosion Control Standards](#)
 - [Policies and Rules](#)
 - [Soil and Water Conservation](#)
 - [Technical Resources](#) (Soil Erosion Control Technical Bulletins, New Product Approvals, USDA Natural Resources Conservation Service, Chapter 251, GIS data, etc.)

County and Local

- [Monmouth County Division of Planning Environmental and Sustainability Section](#)
 - [Monmouth County Eco-Tip Brochures](#)
- [Monmouth County Division of Shade Tree](#)
- [Monmouth County Environmental Council \(MCEC\)](#)
- [Monmouth County Green Table](#)
- [Monmouth County Health Department Environmental Health Program](#)
- [Monmouth County Mosquito Control Commission](#)
- [Monmouth County Park System \(MCPS\)](#)
- [Monmouth County Wastewater Management Plan Map Viewer](#)

Nonprofits, Research Centers, and Other Stakeholders

- [Alliance for a Living Ocean](#)
- [Alliance for NJ Environmental Education](#)
- [American Littoral Society](#)
- [Association of NJ Environmental Commissions \(ANJEC\)](#)
- [Clean Ocean Action](#)
- [Clean Water Fund of New Jersey](#)
- [Clearwater of NJ](#) (formerly Monmouth County Friends of Clearwater)

- [Conserve Wildlife Foundation](#)
 - [New Jersey Endangered and Threatened Species Field Guide](#)
- [Earth Share New Jersey](#)
- [Ecological Society of America](#)
- [Garden State Earth Institute](#)
- [INFORM, Inc.](#)
- [Manasquan River Watershed Association](#)
- [Monmouth Conservation Foundation](#)
- Municipal Environmental Commissions (see Figure 3.4)
- Municipal Ecological Resource Inventories or Natural Resource Inventories (see Figure 3.5)
- [Native Plant Society of New Jersey](#)
- [Nature Conservancy](#)
 - [A Guide for Incorporating Ecosystem Service Valuation into Coastal Restoration Projects](#)
- [Natural Resources Defense Council](#)
 - [Link to Environmental Groups](#)
- [NatureServe](#)
- [Navesink Maritime Heritage Association](#)
- [New Jersey Audubon Society](#)
- [New Jersey Conservation Foundation](#)
- [New Jersey State Mosquito Control Commission](#)
- [New Jersey Recreation and Park Association](#)
- [New Jersey School of Conservation](#)
- [New Jersey Chapter Sierra Club](#)
- [New Jersey Work Environment Council](#)
- [NJ Coast Anglers Association](#)
- [NJ Environmental Federation](#)
- [NJ Water Environment Association](#)
- [NJ Water Resources Institute](#)
- [Sustainable Jersey](#)
- [The Land Conservancy of NJ](#)
- [Wetlands Institute](#)



3.6 Master Plan Recommendations and Stakeholder Strategies

Meetings and conversations with the MCEC, various county departments, and *Master Plan* Environmental Working Group stakeholders resulted in the development of five *Master Plan* Recommendations and numerous Stakeholder Strategies related to natural resources.

Master Plan Recommendations

Recommendation 3.1: Maintain and update inventories of the county's natural features and systems and promote the protection of natural resources in conjunction with the Monmouth County Park System (MCPS). The mission of the Monmouth County Environmental Council (MCEC) calls for inventories of the county's natural and cultural features. The MCPS mission also directs the MCEC to identify significant natural and historic resources in the county, preserving them when feasible through acquisition and stewardship. The Division of Planning staff is directed to support both the MCEC and the MCPS in these joint efforts, particularly as they relate to improved resiliency and sustainability for the county. The Division of Planning staff is currently working to update the *Natural Features Study (1975)*. Once approved by the MCEC and accepted by the MCPB, this new document will be considered a supportive and consultative document to the *Master Plan* and posted on the county website.

Recommendation 3.2: Participate in initiatives that identify, target, and protect important resources, critical habitats, species of concern, and Areas of Significant Environmental Quality (ASEQ). The Monmouth County Environmental Council (MCEC) mission directs the identification of ASEQs. Division of Planning staff from the Environmental and Sustainability Section will continue to provide support to the MCEC to update both the *Natural Features Study (1975)* and the *Monmouth County Unique Areas Study (1978)* with the development of two new documents and continue to coordinate these efforts with the Monmouth County Park System (MCPS) and interested municipalities.

Recommendation 3.3: Encourage and support new and continuing partnerships for resource protection. The Division of Planning staff is directed to continue supporting partnerships between the public and private sectors, nonprofit organizations, and community stakeholders that promote regionally-based watershed and natural resource protection initiatives when those partnerships share a common vision to engage in collaborative planning efforts, leverage funding, and implement cooperative strategies.

Recommendation 3.4: Continue to educate the public on the county's valuable natural resources, environmental impact assessment procedures, and other important environmental issues. The Monmouth County Environmental Council (MCEC) mission includes environmental education and outreach initiatives. The Monmouth County Park System (MCPS) and the Monmouth County Health Department (MCHD) also engage in environmental education. All three hold workshops and produce documents related to natural resource and environmental issues. The Division of Planning annually hosts a New Jersey Department of Environmental Protection (NJDEP) Watershed Ambassador with the primary goal of watershed and water quality education and outreach. Division of Planning staff is directed to continue to support these efforts and to work with other stakeholder groups to encourage additional outreach efforts on environmental and sustainability initiatives.

Recommendation 3.5: Assist municipalities with floodplain management and planning initiatives that improve community resiliency and/or advance their standing in the National Flood Insurance Program (NFIP) Community Rating System (CRS) program. Division of Planning staff is directed to continue supporting municipal efforts related to the CRS program that will lower flood insurance premiums for homeowners and businesses located in Special Flood Hazard Areas (SFHAs) of participating towns.



Stakeholder Strategies

General

- Encourage the use of buffers to protect environmentally critical lands from encroaching land uses.
- Support efforts to acquire grant funding to further environmentally proactive projects that benefit Monmouth County.
- Support efforts to preserve, restore, and enhance wetlands and stream corridors or mitigate the impacts when disturbance is the only option.
- Encourage the creation, protection, and conservation of coastal and freshwater wetlands, habitats, and functions that provide for pollution control, flood control, hazard mitigation, groundwater recharge, and other environmental, social, and economic benefits.
- Support legislation that furthers the protection of vital natural resources from contamination, degradation, or depletion.
- Encourage coordination between all levels of government for regional natural resource planning, protection, and management.
- Promote the preservation of upland forests, which provide benefits for stormwater retention, water quality preservation, and the increase of groundwater recharge, particularly in critical aquifers.
- Work with Monmouth County Department of Public Works and Engineering and Monmouth County Shade Tree Commission to create, promote, and provide examples for sustainable, healthy, and safe community forests throughout Monmouth County, and to influence proper tree care and stewardship in New Jersey.

Open Space

- Support efforts at all governmental levels to create greenways, linear parks, trails, and buffered stream corridors that provide wildlife passages, critical habitats, and opportunities for public interaction with the natural environment without detriment to our natural systems.
- Promote the preservation of both upland and wetland forests,

particularly century forests.

- Promote the safe eradication of invasive species and the mitigation of their negative impacts.
- Promote the preservation of a variety of habitats to support species diversity.
- Provide for limited access to publicly owned environmentally sensitive lands in ways that will not adversely affect resource quality.
- Encourage the provision of public recreational lands that also serve to preserve and protect natural resources.
- Support the MCPS’ extensive recreational programs and special events.
- Support land stewardship and restoration efforts of the MCPS and similar agencies.

Farmland Preservation

- Promote the use of sound agricultural Best Management Practices (BMPs) that protect sensitive land.
- Encourage farming practices and the use of BMPs that conserve natural resources such as soil and water.
- Preserve the county’s remaining critical agricultural lands for farming.
- Encourage a whole-systems approach to the design and management of sustainable agrarian ecosystems.

Arts, Historic, & Cultural Resources

- Encourage public art that celebrates the natural world and brings awareness of the importance of our limited and valuable natural treasures.
- Support efforts that combine to preserve historic locales or structures and valuable natural resources.
- Encourage the preservation of natural habitats and ecosystems as examples of the living natural history of Monmouth County.



Utilities

- Encourage the integration of water resource planning into land use planning.
- Where feasible incorporate the preservation of natural systems, such as wetlands and stormwater management, into development and redevelopment projects.
- Promote the preservation and improvement of water supply resources through the implementation of BMPs that ensure a high quality of water and the conservation of all water resources.
- Support the use of renewable energy resources that work in concert with natural systems without degrading or diminishing natural resources.
- Promote green infrastructure initiatives to better manage stormwater runoff while preserving or improving natural systems.

Transportation & Mobility

- Promote air quality improvement through improved transit and transportation systems that relieve congestion.
- Encourage more pedestrian, bicycle, and equestrian trails that serve to reduce vehicle miles traveled while improving air quality.
- Encourage walkable communities, accessibility to transit, and the use of alternative-fueled vehicles in efforts that strive to preserve natural resources and reduce our dependence on nonrenewable energy resources.

Agricultural & Economic Development

- Acknowledge the economic value of protecting and enhancing our natural resources.
- Encourage ecotourism and agritourism opportunities throughout the county in ways that promote and protect important natural resources.

Community Development & Housing

- Encourage towns to develop ordinances that have a *de minimus*

effect on natural systems, including those that promote adaptive reuse, redevelopment, clustering, and density transfers that accommodate growth while providing additional resource protection measures.

- Promote municipal land use policies that protect sensitive environmental and natural resources.
- Encourage policies that support reforestation and the planting of shade trees, as well as ecological restoration and management in disturbed areas.
- Encourage municipalities to adopt green building standards to create more energy efficient buildings and reduce impacts on natural resources.

Healthy Communities

- Provide technical assistance to municipal partners in developing environmental impact assessment procedures and reports.
- Encourage daylighting of piped streams in an effort to reduce runoff pollution, mitigate flooding, and improve livability in the built environment.
- Support multi-jurisdictional cooperation in the management and restoration of coastal lakes and ponds, the beaches affected by their discharge, their watersheds, and associated wetlands.
- Promote initiatives that provide community benefits while encouraging time spent in nature, such as developing and maintaining nature trails, establishing community gardens, and creating dog parks.
- Acknowledge the links between healthy ecosystems and human health, including air quality and water quality and quality-of-life within a community.

Community Resiliency

- Assist in the protection of community resources through the permanent preservation of shorelines, floodplains, wetlands, and buffer areas, especially in Special Flood Hazard Areas that are



susceptible to the effects of sea level rise. This can be achieved through either the acquisition of land or conservation easements.

- Promote shoreline stabilization and protection through the creation and maintenance of native dune vegetation.
- Promote the restoration and maintenance of maritime forests and coastal wetlands.
- Encourage hazard mitigation planning in locations prone to wildfires.
- Sustainable Places
- Encourage the use of BMPs that protect and conserve our natural resources, such as waste management, sustainable design, and Green Infrastructure.
- Promote the use of living shorelines and wetland restoration measures that protect stream corridors and reduce erosion.
- Consider natural, nonstructural techniques, low-impact design methods, and BMPs for resource protection and restoration, particularly in the management of stormwater runoff from developed areas.
- Encourage creative land use planning and design to accommodate future growth while enhancing sustainability.
- Use native tree species for landscaping and treescaping projects that are most suitable for the environment and intended use.

Sustainable Places

- Encourage the use of BMPs that protect and conserve our natural resources, such as waste management, sustainable design, and Green Infrastructure.
- Promote the use of living shorelines and wetland restoration measures that protect stream corridors and reduce erosion.
- Consider natural, nonstructural techniques, low-impact design methods, and BMPs for resource protection and restoration, particularly in the management of stormwater runoff from developed areas.
- Encourage creative land use planning and design to accommodate

future growth while enhancing sustainability.

- Use native tree species for landscaping and treescaping projects that are most suitable for the environment and intended use.

Planning Services, Outreach, & Coordination

- Continue to provide resource conservation and environmental educational resources to schools and community organizations, as requested.
- Encourage local and regional educational institutions to incorporate environmental education throughout all aspects of their curriculum.
- Support municipal involvement in the Sustainable Jersey certification program (including Municipal Green Teams) and similar initiatives that promote a local awareness of environmental issues, conservation, and the need for resource protection.
- Use our environment and natural systems as outdoor classrooms and laboratories for student lessons and public education.



