

# Executive Summary to the 2015 Master Plan Reexamination Report and Master Plan Amendments

Berkeley Township  
Ocean County, New Jersey

# Executive Summary to the 2015 Master Plan Reexamination Report and Master Plan Amendments June 2015

**Prepared for:**  
Berkeley Township  
Ocean County, New Jersey

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## Acknowledgements

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## Introduction

The New Jersey Municipal Land Use Law (MLUL) requires that each municipality in the state undertake a periodic review and reexamination of its local master plan. The purpose of the reexamination report is to review and evaluate the master plan and municipal development regulations on a regular basis in order to determine the need for updates and revisions. The reexamination report also reviews the progress of the Township in achieving its planning objectives, and considers the need for changes in order to ensure that the municipal master plan is current and meets the needs of the Township. The Berkeley Township Planning Board is responsible for completing the reexamination, and preparing and adopting by resolution a report on same.

Berkeley Township received grant funding under the state's Post Sandy Planning Assistance Grants program to assist with the long-term planning and recovery process. This Master Plan Reexamination Report is one component of several planning projects in Berkeley funded by this grant program and is the Township's response to Hurricane Sandy's impacts. It therefore places special emphasis on facilitating recovery from Hurricane Sandy, as well as promoting resiliency to future storm impacts and other potential natural hazards.

Berkeley Township adopted its comprehensive master plan in 1997. The original 1997 Berkeley Township Master Plan, and the reexamination reports that followed in 2003 and 2008 laid the groundwork for Berkeley's extensive redevelopment and density transfer plans, designed to foster new development in areas with existing utilities and infrastructure, while preserving hundreds of acres of natural lands. The current document (hereinafter referred to as the 2015 Master Plan Reexamination Report) streamlines, refines, and clarifies this existing framework, offering opportunities for community resiliency and ensuring that the recovery efforts meet the needs of residents, visitors, businesses and investors today and well into the future.

To achieve this, the 2015 Master Plan Reexamination Report recommends several updates and revisions to the municipal master plan. These changes have been compiled into a master plan amendment. Additionally, the master plan amendment compiles, updates and adds to the master plan goals and objectives. The amendment also updates the Land Use Plan Element, Community Facilities and Resiliency Plan Element, circulation plan element, and Housing Plan Element by incorporating discussion of promoting resiliency in the Township.



## Impacts of Hurricane Sandy

Hurricane Sandy struck the coast of New Jersey on October 29, 2012, causing extensive damage throughout Berkeley Township. The storm's destructive winds, flooding and storm surge disrupted everyday life for many in the community, damaging critical infrastructure, community facilities, public and private property. Falling trees, branches and power lines resulted in over 32,000 reported power outages throughout the township, sometimes causing damage to nearby buildings. While many properties experienced some degree of damage, 252 properties were substantially damaged. The extensive beach and soil erosion caused by the storm has the potential to put even more people at risk in the event of a future storm event.

The long-term impacts of Hurricane Sandy will be affected by a variety of factors including insurance payouts, flood insurance regulations,

as well as the ability for residents, businesses, and the Township to rebuild. Despite the extent of damages that Berkeley Township sustained from Hurricane Sandy, existing land use patterns and prevailing land uses are not anticipated to substantially change. While Hurricane Sandy exposed several of the Township's vulnerabilities, the Township's existing extensive planning framework has laid a significant part of the groundwork needed for a resilient recovery.

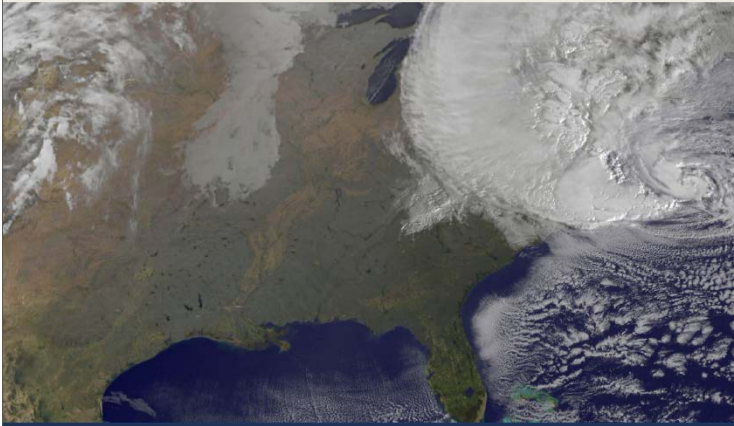
Rather than a dramatic overhaul, the 2015 Reexamination Report recommends minor changes that fine-tune and synthesize the Township's existing planning framework in order to meet the needs of residents, visitors, businesses and investors today and well into the future.

The lessons learned from this rebuilding and recovery process is providing the municipality and its residents with the opportunity to reexamine what is needed to ensure its long-term viability. As a result, a central focus of the 2015 Master Plan Reexamination Report is to promote land use and development goals that will make Berkeley more resilient in order to withstand future storm events.



## The Local and Regional Reaction to Hurricane Sandy

### Berkeley Township



### Strategic Recovery Planning Report

### Strategic Recovery Planning Report

As a response to Hurricane Sandy, Berkeley Township adopted a Strategic Recovery Planning Report (SRPR) in June 2014. The purpose of the SRPR is to outline a recommended set of actions to guide the Township in promoting recovery from the impacts of Hurricane Sandy and resiliency to future storms. The actions recommended by the SRPR have been incorporated and described in detail in the master plan reexamination report.

In addition to the 2015 Master Plan Reexamination and Master Plan Amendments, the Post Sandy Planning Assistance Grants Program, is allowing the Township to implement several action items from the SRPR including:

- *Automating and updating the Township's system for processing zoning and construction permits*
- *Developing a Geographic Information System (GIS) to increase resiliency and improve operations.*
- *Updating the Township's Emergency Operating Plan*
- *Preparing a Debris Management Plan*
- *Installing a town-wide Supervisory Control and Data Acquisition (SCADA) system.*
- *Preparing a Capital Improvement Plan*
- *Preparing a Floodplain Management Plan*

### Review of Building Height and Base Flood Elevations

As a response to Hurricane Sandy, the Township revised its Flood Damage ordinances. This required new residential construction and substantial improvements to comply with municipal flood hazard rules in which the lowest habitable floor, along with attendant utilities and sanitary facilities, to be above the base flood elevation. Nonresidential development would follow a similar standard or be floodproofed in accordance with specific standards. The Township is taking a conservative approach to building elevation requirements by requiring that the lowest finished floor be at least one foot above the best available flood hazard data.

### 2014 Ocean County Multi-Jurisdictional All Hazard Mitigation Plan

The 2014 Multi-Jurisdictional All Hazard Mitigation Plan (HMP) is intended to provide a blueprint for saving lives and reducing property damage from the effects of natural and man-made disasters in Ocean County, as well as to improve community resiliency following disastrous events. The HMP is also intended to fulfill state and federal legislative requirements related to local hazard mitigation planning, and facilitate access

to pre- and post-disaster grant funding. The HMP is comprehensive in its scope and hazard mitigation strategy.

To support the implementation of the 2014 Multi-Jurisdictional All Hazard Mitigation Plan in Berkeley Township, the Plan recommends that the Township use it to implement township-specific mitigation strategies and actions as outlined in the Plan. These strategies and actions include:

- *Acquiring and/or elevating flood-prone residential properties*
- *Demolish and reconstruct residential properties*
- *Adopting Advisory Base Flood Elevation maps and continuing to enforce building codes*
- *Continuing to participate in the National Flood Insurance Program (NFIP)*
- *Developing and implementing shelter management plans and generator-related actions*
- *Maintain Emergency Operations and Flood Mitigation Plans, and implementing erosion control related projects*
- *Implementing flood control and flood proofing related projects*
- *Joining, maintaining, or increasing rating for CRS program*
- *Maintaining, improving, and expanding education and awareness programs*
- *Maintain and improve dunes through plantings, restoration projects and beach replenishment*
- *Improve evacuation plans with alternative routes and/or re-entry guidance*
- *Support and share information on grant programs that support residential, business and natural resource mitigation projects with appropriate local stakeholders*
- *Dredge in appropriate locations to mitigate flooding and/or maintain lagoon access*
- *Increase regulation for storage of Hazardous Materials in ordinance*

Enactment of the recommendations made in Ocean County's Multi-Jurisdictional All Hazard Mitigation Plan by Berkeley Township will promote recovery from and resiliency to future storms and all other types of hazards. The 2015 Master Plan Reexamination Report and resulting master plan amendments, incorporate goals to support and enact many of these actions.

### **Additional Planning Efforts**

Berkeley Township's recent planning efforts also emphasize smart growth principles, as well as sustainability and resiliency. The Township reaffirms its previous planning framework and overall land use plan, which concentrates future development in centers and preserves land in environmentally sensitive areas.

In 2012 Berkeley Township received Plan Endorsement from the New Jersey State Planning Commission for its Transfer of Development Rights Program. The Plan Endorsement permitted the designation of the Beachwood Plaza (Town Center) redevelopment area, a second town center, and a light industrial node. These three sites in addition to another corridor node, have been designated as receiving areas where additional development would be permitted in exchange for the preservation of lands elsewhere in the Township. This designation legitimized over a decade of planning in Berkeley Township to establish vibrant new mixed-use centers. Amendments to the



zoning ordinance have complemented this effort with standards in these districts that incorporate the use of green infrastructure.

## Recommended Changes to the Master Plan and Development Regulations

To promote recovery from Hurricane Sandy and resiliency to future storms and other hazards over the long-term, the 2015 Master Plan Reexamination Report recommends a number of changes to the Township's municipal master plan and development regulations. This can be done through the application of green building techniques, storm resilient infrastructure, and protecting clear lines of communication. By promoting the resiliency of community facilities and critical infrastructure, the Township is not only protecting its investments, but also sets an important example for others to follow and increases its overall sustainability and resiliency.

### Changes to the Master Plan

The 2015 Master Plan Reexamination Report recommends the compilation, consolidation and revision of the Township's goals and objectives for continued relevancy and to incorporate storm resiliency into future land use. The Master Plan Amendment incorporates these revised objectives with new resiliency objectives intended to promote recovery and resiliency. The new resiliency objectives are outlined below:

- *Plan for new development to minimize risk from natural hazards.*
- *Promote public awareness of hazard mitigation and resiliency issues.*
- *Focus public agencies on community vulnerabilities to hazards such as flooding.*
- *Encourage future capital projects to be located outside flood hazard areas.*
- *Encourage renovations and modifications that are resilient to flood- and storm-related impacts.*
- *Encourage municipal efforts and initiatives in FEMA's Community Rating System (CRS).*
- *Encourage regional solutions to flood- and storm-related impacts.*



**Rain Gardens (Source: EPA)**

The 2015 Master Plan Reexamination Report recommends the following actions to aid the Township in promoting local recovery and in building resiliency:

- *Adopt a land use plan amendment that facilitates changes to zoning and development regulations recommended in the master plan reexamination and incorporates resiliency through green building and infrastructure techniques. The land use plan amendment should also incorporate the previously adopted Manitou Park Rehabilitation Plan, Well Head Protection ordinance and Riparian Buffer ordinance.*
- *Update the Circulation Plan Element to promote the development of bicycle and pedestrian connections as well as address evacuation routes in the Township.*



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- *Revise the Community Facilities Plan to provide current mapping of public facilities and other critical infrastructure within the Township in order to promote resiliency.*
- *Explore opportunities for open space preservation and promote green infrastructure strategies to aid in storm resiliency and mitigate possible storm impacts.*
- *Amend the Stormwater Management Plan and Stormwater Management Plan to address green infrastructure techniques that will promote resiliency in the Township.*
- *Amend the Housing Element and Fair Share Plan to encourage elevating single-family homes and locating future affordable housing outside of flood hazard areas.*
- *Adopt a green buildings and environmental sustainability element.*
- *Update the Capital Improvement Plan to focus municipal capital investments on public facilities and equipment to build community resiliency.*
- *Consider an economic plan element to explore opportunities for new ratables.*

To reflect the recommendations of the 2015 Master Plan Reexamination Report, the amended Master Plan contains the following components:

- *A comprehensive listing of goals and objectives from previous planning elements and reexamination reports.*
- *A Community Facilities and Resiliency Plan Element incorporating current mapping of public facilities and other critical infrastructure within the Township, as well as promoting resiliency at these facilities and infrastructure.*
- *A Circulation Plan Element addressing evacuation routes and bicycle circulation.*
- *A Land Use Plan Amendment incorporating green building and infrastructure techniques to aid the Township to build resiliency through development regulations.*
- *An amended Housing Plan Element addressing the need to encourage the elevation of single-family homes and the need to locate affordable housing outside of flood hazard areas.*

The Township should incorporate findings from these elements and other reports developed in response to Hurricane Sandy that encourage resilient development.

### Changes to Development Regulations

In addition to the proposed changes to the Township's Master Plan, the 2015 Master Plan Reexamination Report recommends a number of changes to the Township's development regulations which seek to promote recovery and resiliency to future storms, including:

- *Simplify, clarify, and organize the official zoning map and zoning ordinances so that they are easier to understand and to remove inconsistencies, such as:*
  - *Address the existing conflict between lot coverage and impervious coverage requirements in the Highway Business Zone.*
  - *Revise standards for permitted, conditional and prohibited uses in zone districts for the clear and uniform application of the zoning ordinance.*
  - *Revisit districts, such as the R-MF and R-60 zones, which include standards for "sub-districts" that are currently missing on the zoning map.*
- *Reconcile zoning district regulations in the ordinance with the zoning map.*
- *Reconcile the boundaries of the Corridor Node C with the 2012 TDR Plan Element.*
- *Remove residential uses as a permitted use in the Highway Business zone to redirect growth and development toward nodes to limit sprawl and improve resiliency.*



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- *Reduce barriers to green Infrastructure and resiliency, and encouraging development incentives for projects that incorporate resiliency or green infrastructure.*

In addition to these changes, the Township will continue to evaluate its ordinances in order to ensure continuing efforts in facilitating resiliency to storm events.

### Other Recommendations

The 2015 Master Plan Reexamination Report also recommends the following:

- *The Township should continue to emphasize to the state and county the importance of a Route 9 management plan and the construction of the Western Boulevard extension that will provide emergency evacuation routes, in addition to bicycle and pedestrian linkages.*
- *The Township should pursue actions that expand access to grant funding and cost savings, whether it is Sustainable Jersey certification, a Complete Streets policy, or enhanced participation in the CRS program.*
- *The Township should consider a Community Vulnerability Analysis to evaluate the number of structures that may be exposed to potential flood and storm surge risks. Findings from this assessment could help to guide future preservation of key areas to provide a natural buffer from future storms and flood events.*
- *Completion of the remaining administrative steps required to activate the Township's TDR program will enable the Township to direct future growth toward resilient town center districts, preserve lands, and limit the costly expansion of infrastructure to undeveloped areas.*

### Summary

Hurricane Sandy caused extensive damage in Berkeley Township and exposed many vulnerabilities. While much has been done to promote recovery, additional work is needed. Furthermore, it is important to ensure that the Township's master plan helps the Township to build resiliency to future storms and other potential natural disasters. The 2015 Master Plan Reexamination Report and Amendments will help the Township to meet these needs.





# 2015 Master Plan Reexamination Report

Berkeley Township  
Ocean County, New Jersey



# Master Plan Reexamination Report and Amendment

MAY 2015

ADOPTED: AUGUST 6, 2015

**Prepared for:**  
Berkeley Township  
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**Prepared by:**



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John Bacchione, Class III Member (Council Liaison)  
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## Introduction

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The New Jersey Municipal Land Use Law requires each of the state's 565 municipalities to reexamine their Master Plans every 10 years.<sup>1</sup> A reexamination encourages municipalities to take a critical look at the long-term goals, objectives and recommendations outlined in the original Master Plan to understand what has been achieved, but also to assess the continued relevancy of these original aspirations. In addition, the preparation of a statutorily compliant Reexamination Report provides a legal presumption of validity of the municipal zoning ordinance. This report constitutes the Master Plan Reexamination Report for Berkeley Township as required by the Municipal Land Use Law at NJSA 40:55D-89.

Berkeley Township adopted its last comprehensive master plan in 1997. The Township's last reexamination report was adopted in 2008. The current document (hereinafter referred to as the 2015 Master Plan Reexamination Report) serves as a reexamination of the 1997 Master Plan, as supplemented by 2000, 2003, and 2008 Master Plan Reexamination Reports. Other significant planning documents in Berkeley Township include:

- 1997 Township Master Plan
- 2001 Berkeley Township Pinelands Area Master Plan Amendment
- 2005 Route 9 Corridor Master Plan for Ocean County
- 2003 Vision Statement for the Year 2020
- 2003 Township Master Plan Re-examination Report
- 2008 Township Master Plan Re-examination Report
- 2008 Township Housing Element & Fair Share Plan
- 2008 Land Use and Circulation Element
- 2009 Town Center Redevelopment Plan
- 2009 Manitou Park Neighborhood Redevelopment Plan
- 2012 TDR Development Transfer Plan Element
- 2012 Utility Services Element & Capital Improvement Plan
- 2014 Strategic Recovery Planning Report

Development of the 2015 Berkeley Township Master Plan Reexamination Report was guided by the input from an appointed Master Plan Reexamination Subcommittee, consisting of three members of the Berkeley Township Planning Board, the Zoning Officer, and the Township Administrator.

While the 2015 Master Plan Reexamination Report is broad in scope, it places special emphasis on facilitating recovery from Hurricane Sandy's impacts, as well as promoting resiliency to future storm impacts and other potential natural hazards. To achieve this, the 2015 Master Plan Reexamination Report recommends a number of updates and revisions to the 1997 Master Plan and its subsequent reexamination reports in 2003 and 2008. These changes have been compiled into a master plan amendment, which is appended to this document.

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<sup>1</sup> In 2011, amendments to the MLUL revised the maximum time between reexamination reports from six to ten years.





## Requirements of the Reexamination Report

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The Municipal Land Use Law requires that Berkeley Township provide for the reexamination of the municipal master plan and development regulations at least once every ten years. A master plan reexamination gives the Township the opportunity to review the progress it has made in achieving its planning objectives, and to consider the need for changes in order to ensure that the municipal plan remains up-to-date and reflects the needs of the Township. The municipal planning board is responsible for completing the reexamination, as well as the preparation and adoption by resolution of a report on the findings of the reexamination.

The Municipal Land Use Law requires that the reexamination report state the following:

- The major problems and objectives relating to land development in the municipality at the time of the adoption of the last reexamination report;
- The extent to which such problems and objectives have been reduced or have increased subsequent to such date;
- The extent to which there have been significant changes in the assumptions, policies and objectives forming the basis for the master plan or development regulations as last revised, with particular regard to the density and distribution of population and land uses, housing conditions, circulation, conservation of natural resources, energy conservation, collection, disposition and recycling of designated recyclable materials, and changes in state, county and municipal policies and objectives;
- The specific changes recommended for the master plan or development regulations, if any, including underlying objectives, policies and standards, or whether a new plan or regulations should be prepared; and,
- The recommendations of the planning board concerning the incorporation of redevelopment plans adopted pursuant to the Local Redevelopment and Housing Law (NJSA 40A:12A-1 et seq.) into the land use plan element of the municipal master plan, and recommended changes, if any, in the local development regulations necessary to effectuate the redevelopment plans of the municipality.

The 2015 Master Plan Reexamination Report addresses each of these statutory requirements.



## Major Problems and Objectives in 2008

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The Berkeley Township Comprehensive Master Plan (hereinafter identified as the Master Plan), first adopted in 1997 set forth specific goals, objectives and policies for the future development of the Township of Berkeley. Six years later in 2003, the Township adopted the *2020 Vision Statement and Municipal Profile* for Berkeley's "Eastern Mainland," the area of the municipality located to the east of the Garden State Parkway and west of Barnegat Bay. The visioning process served to identify long-range goals to guide future land use and development for the community. That same year, as per the Municipal Land Use Law, Berkeley Township conducted a reexamination of its Master Plan. Berkeley reexamined its Master Plan again in 2008.

### Berkeley Township Master Plan (1997)

Between 1980 and 1990 Berkeley Township experienced considerable population growth, increasing by 65% from 23,151 people to 37,319 people. This population surge followed the development of large-scale retirement communities in the western section of the town during the 1970s. At the time of the development and subsequent adoption of the Master Plan in 1997, long-term projections suggested that Berkeley Township would continue to welcome more residents, albeit at a less dramatic pace than seen in the previous two decades, when many of Berkeley's seasonal inhabitants transitioned to full-time residency. The impacts from this rapid change in Berkeley and its surrounding communities was typified by the changing experience along US Route 9, the principal commercial highway in Berkeley. As the highway served to meet the needs of residents, tourists and commuters, the ensuing land use patterns that appeared around the highway in the form of strip-style development served to offer the appearance of uncontrollable suburban sprawl while the mix of traffic demands strained the highway's capacity.

Berkeley Township's Comprehensive Master Plan was adopted by the Berkeley Township Planning Board on December 4, 1997. The Plan assesses existing land use in the Township and its future development potential in the context of zoning, environmental constraints and existing infrastructure capacity. The Plan also identifies areas east of the Garden State Parkway as most likely to be developed despite CAFRA regulations.

### Goals and Objectives

The 1997 Master Plan outlined the following goals and objectives:

*Goal A: Cohesive neighborhoods free from visual clutter in front yards and streetscapes:*

- *Develop property maintenance program inclusive of ordinance regulations to deal with outdoor storage, parking in the front yard, outdoor storage of disabled or unregistered vehicles, recreational vehicles and boats over a specified size.*
- *Develop a policy on the installation of curb and sidewalk improvements to separate front yards from the street, facilitate pedestrian movement and establish a more organized streetscape.*

*Goal B: Elimination of onsite well and septic systems through the extension of Township utilities to all existing residential neighborhoods.*

- *Continue program of systematic extension of Township water and sewer lines to existing occupied residences in established neighborhoods.*

*Goal C: New residential development that meets or exceeds applicable design standards and where sewer and water infrastructure is either available or is provided by the developer.*



# 2015 Master Plan Reexamination Report

## Berkeley Township, Ocean County, New Jersey

- Continue to apply modern site improvement standards in new residential development.
- Pursue inclusion of water and sewer lines by developers of major subdivisions as part of development review and approval.

Goal D: Rehabilitated housing stock within the older planned retirement communities, Manitou Park and older subdivisions.

- Support and encourage continued involvement by Township residents in the Ocean County Housing Rehabilitation Program.
- Utilize the Berkeley Township Affordable Housing Trust Fund as stable source of funding for continued rehabilitation of existing affordable housing if and when the County's program funding runs out.

Goal E: Affordable housing for families and seniors, created pursuant to the Mount Laurel Fair Share Housing Plan.

- Complete the process of obtaining certification of the Township Fair Share Housing Plan Addendum and implementation of the Lifetime Homes and Foxmoor settlement agreements to construct new twin homes in Manitou Park (Lifetime) and 15 new affordable homes in Foxmoor.
- Expand housing opportunities for seniors through inclusion of a provision for planned life care communities on large tracts as a permitted use option in the area currently zoned General Industry, but only after the arterial link between Route 9 and the Garden State Parkway is created.

Goal F: Attractive office and retail development along the Route 166/Route 9 corridor to replace obsolete and unsightly small lot highway strip commercial uses, such as auto repair garages, bars and nightclubs, used car sales, stand-alone fast food restaurants, etc. All new retail and office development should meet uniform signage criteria that controls visual clutter along the corridor through reasonable restrictions on the number and size of identification signage and the prohibition of new advertising (billboard) signage.

- Amend Land Development Ordinance to provide for large tract minimum lot size requirements and large site uses where possible along the Route 166/9 corridor. Provide for limited small site stand alone uses as Conditional Uses in the Business Highway Zone.
- Amend Land Development Ordinance to provide for more comprehensive aesthetic and maintenance controls for commercial signage.
- Institute property maintenance code requirements for maintenance of existing commercial properties, including control of high grass and weeds, maintenance of building exteriors, fences, paved areas, etc.

Goal G: A new employment center to be accessed through the construction of a new arterial road by Ocean County linking Route 9 to a new exit ramp built by the State on the Garden State Parkway. The employment center will be developed on large consolidated tracts in the area currently zoned General Industrial located south of Route 9 and east of the Borough of Beachwood. Uses will integrate retail, office and distribution within planned commercial developments and will include provisions for integrated health services such as a planned hospital, clinic and life-care facilities.

- Pursue policy of persistent advocacy of construction of new exit ramp on the Garden State Parkway and a County arterial road to connect the new ramp to Route 9 through the lands now zoned for General Industry.
- Replace current General Industry zoning provisions with a "PC – Planned Commercial" zone that includes performance standards for the development of retail, office and distribution uses, or integrated health service uses, within planned campus centers analogous to Carnegie Center on Route One in Princeton.

Overall, the goals and objectives outlined in the 1997 Master Plan were intended to address issues in Berkeley Township that would help make it both visually attractive and welcoming to new and existing residents.



## Berkeley Township Master Plan Reexamination (2003)

The first reexamination report in 2003 reaffirmed the original goals and objectives of the 1997 Master Plan. The reexamination process offered the planning board the opportunity to adopt the 2020 Vision Statement and Municipal Profile, completed in 2003, as an amendment to the Master Plan, which included a list of 21 additional goals and objectives and served to refine the original goals of the Master Plan. The goals from the 2020 Vision Statement proposed a future Berkeley where future growth would be directed away from undisturbed natural areas and toward areas where development already existed, as a way to reduce congestion, sprawl and the costly expansion of infrastructure. In addition, the 2003 report recommended that at the time of its next revision, the Township Master Plan be completely updated and amended to address the issues detailed in the 2003 report.

The 2003 reexamination report recommended that the township pursue the goals outlined in the 2020 Vision Statement. These goals, as reported in the 2008 Master Plan Reexamination Report include the following:

### *Development and Redevelopment*

- *Provide a healthy balance of land uses that preserves the residential character of the community while providing convenient opportunities to acquire essential goods and services.*
- *Direct most new development to a well planned, compact, mixed use Town Center.*
- *Redevelop existing commercial centers into accessible, compact and well-defined nodes with linkages to the surrounding neighborhoods.*
- *Complete the planned build-out of existing residential neighborhoods and maintain them as attractive high quality areas that will serve both existing and new residents*

### *Recreation and Open Space*

- *Create a comprehensive recreation system that provides indoor and outdoor, active and passive recreation opportunities for all age groups and ability levels; and that meets or exceeds state and national performance and safety standards.*
- *Create a comprehensive open space system that provides passive and active recreation opportunities, preserves sensitive lands, creates connected green and blue ways, provides environmental education opportunities, and establishes greenbelts around existing and planned development.*
- *Continue aggressive open space preservation efforts with funding shared among Berkeley Township, Ocean County, the State and federal governments and non-profit groups.*

### *Transportation and Circulation*

- *Provide connections between residential areas, commercial nodes, community facilities and the Town Center through an attractive, free flowing, community circulation system.*
- *Provide opportunities for residents and visitors to access multiple modes of transportation including public transportation, bikeways and pedestrian ways.*
- *Provide an alternate route for north-south through traffic that enhances rather than detracts from the community; and supports the development of a Town Center as opposed to a strip sprawl development pattern.*
- *Strategically complete the residential street grids to ensure connectivity within and between neighborhoods.*
- *Improve the level of service along the Route 9 corridor through the implementation of creative engineering, land use and design techniques.*

### *Public Facilities and Services*



# 2015 Master Plan Reexamination Report

## Berkeley Township, Ocean County, New Jersey

- Concentrate new community facilities such as a post office, police substation, fire station and governmental offices in a new Town Center.
- Ensure efficient delivery of public services through interlocal agreements and regionalized services.
- Strategically extend public water and sewer service to existing neighborhoods, infill development, identified commercial nodes and the Town Center based on cost effectiveness, the need to address health issues, and consistency with the Township's growth management policies.

### Economic Development

- Foster economic development in the Town Center and in commercial nodes along Route 9 to primarily service a local market and a limited regional market.

### Community Design

- Promote aesthetically pleasing human scale development that recognizes the character of traditional New Jersey bay front towns.
- Encourage traditional neighborhood elements such as sidewalks, alleys, front porches, public spaces, green spaces, street grids, street trees, and mixed uses that support pedestrian activity, human interaction, public safety, mass transit, and easy access to goods and services.
- Encourage commercial development and retrofitting that emphasizes quality architecture, shared access and parking, transit friendly facilities, pedestrian circulation, appropriate intensification of buildings, and extensive landscaping especially in parking areas; and avoids blank or windowless walls, oversized parking areas, light pollution, multiple and uncontrolled highway access points.

### Housing

- Maintain a balanced stock of housing that accommodates diverse lifestyles and age groups.
- Ensure proper maintenance of the existing housing stock.

Furthermore, the 2003 Reexamination recommended changes to the zoning code that would reduce the impact of development and protect natural areas with along the Barnegat Bay through the adoption of the Public Preservation Conservation and Conservation Residential Zones. This measure was accompanied by a movement to encourage redevelopment in areas around Berkeley Township that were already suited for development; where access to roads, water, sewer and power infrastructure did not require costly extensions that would also fragment the critical natural infrastructure that was both key to protecting the water quality of Barnegat Bay and providing a natural buffer that could curb the impacts of coastal flooding to nearby communities.

## Berkeley Township Master Plan Reexamination (2008)

The second and most recent reexamination to the 1997 Master Plan took place in 2008. This Report outlined changes in Berkeley's demographics as well as relevant State policies that impacted land use in the Township. At the time of the original 1997 Master Plan, Berkeley projected that its population (an estimate from building permit activity in 1996 suggested that the Township had 41,297 residents) would reach 54,166 by 2010. These numbers were tempered when the 2000 US Census determined Berkeley Township's population to be 39,990 (a 7% increase from the 1990 Census count of 37,319), with a projection from the North Jersey Transportation Planning Authority that the 2010 municipal population would reach 46,870 persons, eventually climbing to a population of 57,440 by 2030.

The 2008 Reexamination Report reiterated the goals from the 2020 Vision Statement, and placed special emphasis on: development of a Town Center through redevelopment; implementation of the 2004 Open Space and Recreation Plan to preserve and maintain open space for the purposes



of preservation, conservation and recreation; and implementation of the Route 9 Corridor Master Plan principles as a way to improve connections throughout town and optimize capacity with the understanding that land use and transportation design are inextricably linked. In addition, the reexamination report recommended the adoption of a redevelopment plan for the Berkeley Town Center, and the need for a redevelopment plan for the Manitou Park section of the township following its designation as an area in need of rehabilitation.

The 2008 Reexamination Report carried forward the following recommendations from the 2003 Master Plan Reexamination.

- *The Land Use Plan should be revised to incorporate the 2020 Vision Statement.*
- *The Route 9 Corridor improvements proposed in the NJDOT Route 9 Corridor Master Plan should be pursued.*
- *An NJDOT Highway Access Management Plan for the entire Route 9 Corridor should be completed.*
- *A Redevelopment Plan should be prepared for the Beachwood Plaza redevelopment area, scattered site redevelopment areas and the rehabilitation areas.*
- *The Western Boulevard extension should be retained as a Master Plan road.*
- *A land use study should be prepared for the Barrier Island section of the Township (south Seaside Park section of Berkeley) to analyze and review existing zoning in this area. The existing zone plan in this area does not adequately reflect established land use patterns to the extent that there are areas zoned for multi-family (two, three and four family units) and townhouses where single-family dwelling units and/or commercial and retail uses currently exist.*

The 2008 Reexamination Report added the following new recommendations:

- *The Berkeley Town Center Plan should be completed and adopted as a supplement to the Land Use Plan as well as be finalized and adopted as a redevelopment plan that would enable a redeveloper agreement to be executed between the redeveloper and the Township Council, acting as the redevelopment entity.*
- *The TDR program should be completed and incorporated into the master plan in accordance with the Municipal Land Use Law.*
- *A redevelopment plan should be prepared for the Manitou Park rehabilitation area and made part of the Land Use Plan.*
- *New master plan land use and circulation elements should be prepared to ensure that they support and complement each other. For example, the municipal road system should be evaluated to determine where streets should be improved and completed and where rights-of-way should be vacated in support of the Township's open space preservation goals, the local TDR program, and efficient extension of infrastructure.*
- *The Township should plan for future telecommunications infrastructure and guide such facilities to Township-owned property. The Township should also investigate the possibility of "micro-sites" in parks and other properties with existing structures that offer locations for wireless communications equipment.*
- *The Township should continue to monitor the COAH rules and requirements and revise its Third Round Housing Plan as appropriate.*
- *The Township should consider adding a sustainability and green buildings component to its open space and conservation element.*

In addition, the report recommended the following zoning ordinance revisions, but also noted the need for further revisions following the development of Berkeley Township's new land use element, which would not be adopted until six months later in March 2009:

- *Simplify outmoded zoning districts particularly those with multiple overlays.*



## 2015 Master Plan Reexamination Report Berkeley Township, Ocean County, New Jersey

- *Simplify and clarify the official zoning map to remove inconsistencies and to be more user-friendly.*
- *Reconcile zoning district regulations in the ordinance with the zoning map.*
- *Develop new zoning districts for mixed-use nodes identified in 2020 vision plan and municipal self-assessment report. Consideration should be given to providing for larger tracts, diversity of uses, pedestrian orientation, TDR receiving areas, sanitary sewer service, and connections to existing neighborhoods.*
- *Bring the zoning ordinance and map into conformance with the new land use element.*

The recommendations outlined in the 2008 Reexamination Report served to refine the goals, objectives and recommendations from 2003. This meant continuing the process of directing growth into established communities throughout Berkeley Township, through the development of a TDR program, and the redevelopment of the vacant and underutilized Beachwood Plaza mall. At the same time, the Township recognized the importance of improving the level and quality of service of Route 9, the main thoroughfare serving Berkeley. The Township's proposal to cluster future development also included design elements that would increase access to goods and services for people of all ages and abilities by reducing the need for an automobile to accomplish everyday tasks, and limiting the potential for unsightly suburban sprawl, traffic congestion and a diminished quality of life.



## The Extent to Which Such Problems and Objectives Have Been Reduced or Increased

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### Status of 2008 Objectives and Assumptions

Master Plan reexaminations that followed the 1997 Master Plan have carried forward several of the original problems and objectives, while adding the vision statement goals developed as part of the 2003 Vision 2020 process.

The framework of the 2008 Reexamination Report, to improve and build upon existing development, has yet to be fully realized. The adoption of the report coincided with the collapse of the real estate market and financial downturn, throttling the pace of development in Berkeley. This lull in activity permitted Berkeley Township to develop and finalize the plans and ordinances necessary for the Township to meet the goals and objectives from 2008 while the real estate market continued to recover. And while Hurricane Sandy caused considerable damages to parts of Berkeley and throughout New Jersey, the Township has already prepared a significant portion of the groundwork required to recover and rebuild in a way that makes it more resilient to weather future storms, both financial and meteorological.

This section states the vision statement goals, as described in the 2008 Master Plan Reexamination Report, with commentary concerning the extent that the objective has been reduced or increased. The commentary is in **bold** text.

### Development and Redevelopment

- *Provide a healthy balance of land uses that preserves the residential character of the community while providing convenient opportunities to acquire essential goods and services.*  
**This is an ongoing priority of the Township. Berkeley Township's 2008 Land Use Plan continues to provide a balanced mix of land uses.**
- *Direct most new development to a well planned, compact, mixed use Town Center.*  
**Recently adopted in 2013, Berkeley Township's Transfer of Development Rights program (TDR) will provide the opportunity to guide future development into three designated receiving districts. The Township also received plan endorsement from the State Planning Commission for two Town Center districts, which it has incorporated into its development regulations, for a Town Center I and Town Center II.**
- *Redevelop existing commercial centers into accessible, compact and well-defined nodes with linkages to the surrounding neighborhoods.*  
**The Township received Plan Endorsement from the State Planning Commission in 2012 for the creation of two Town Center districts and a Light Industrial Node. Through the recently adopted TDR Program, Berkeley Township also designated a third receiving area with a Corridor Node-C overlay.**
- *Complete the planned build-out of existing residential neighborhoods and maintain them as attractive high quality areas that will serve both existing and new residents.*  
**While the overall pace of development has slowed since its peak in the late 1990s, the Township's planning framework and development standards encourage high quality development and redevelopment.**





## Transportation and Circulation

- *Provide connections between residential areas, commercial nodes, community facilities and the Town Center through an attractive, free flowing, community circulation system.*  
**This is an ongoing goal of the Township. Future roadway development in the designated Receiving Areas under Berkeley Township's TDR program will permit the connections to, or alignment with, the rights-of-way of abutting street grids.**
- *Provide opportunities for residents and visitors to access multiple modes of transportation including public transportation, bikeways and pedestrian ways.*  
**This is an ongoing goal of the Township. Portions of the County-owned Barnegat Branch Trail have been built through Berkeley Township. Construction of the project's Phase VI, through Berkeley Township began in Spring 2014. In addition, the Planning Board recommends that new developments have pedestrian elements, including sidewalks as a way to gradually increase accessibility across the Township.**
- *Provide an alternate route for north-south through traffic that enhances rather than detracts from the community; and supports the development of a Town Center as opposed to a strip sprawl development pattern.*  
**The Garden State Parkway has been widened through Berkeley Township to provide one additional lane in each direction. Unlike Route 9, this road is not a local thoroughfare for the Berkeley Township community. A proposed "Western Boulevard Extension" that has been recommended in previous planning documents and would provide an alternate north-south route continues to remain an ongoing priority for the Township.**
- *Strategically complete the residential street grids to ensure connectivity within and between neighborhoods.*  
**This continues to be an ongoing goal and objective of the township. Future roadway development in the designated Receiving Areas under Berkeley Township's TDR program will connect to, or align with, the rights-of-way of abutting street grids.**
- *Improve the level of service along the Route 9 corridor through the implementation of creative engineering, land use and design techniques.*  
**In 2011, local ordinances were updated to update the landscaping requirements for the Route 9 highway edge to reflect recommendations in the Route 9 Corridor Study.**

## Economic Development

- *Foster economic development in the Town Center and in commercial nodes along Route 9 to primarily service a local market and a limited regional market.*  
**Berkeley Township adopted its redevelopment plan for the Town Center in August 2009. The New Jersey State Planning Commission voted to approve Berkeley Township's petition for Plan Endorsement in July 2012, which includes the designation of two Town Centers, a mixed-use development node and a light-industrial node.**

## Housing

- *Maintain a balanced stock of housing that accommodates diverse lifestyles and age groups.*  
**From 2009 through the end of 2013, Berkeley Township approved a total of 320 residential building permits, 97% of which were for single family housing units. Hurricane Sandy caused substantial damage to 252 properties within Berkeley Township. Most of the senior communities are located in the western portion of the town and did not receive much damage. However, it is important to ensure homes on the barrier island and along the Bayfront remain affordable for a variety of lifestyles and age groups.**



- *Ensure proper maintenance of the existing housing stock.*  
**Within Berkeley Township, 252 properties were substantially damaged by Hurricane Sandy. The rebuilding process will take time, during which homes may be in various states of repair and livability.**

## Recreation and Open Space

- *Create a comprehensive recreation system that provides indoor and outdoor, active and passive recreation opportunities for all age groups and ability levels; and that meets or exceeds state and national performance and safety standards.*  
**Berkeley Township provides many opportunities for active and passive recreation including White Sands Beach, Double Trouble State Park, the Barnegat Branch Trail, and the off-leash dog park at the R.J. Miller Airpark. The Township maintains a list of local municipal, county and state parks on their website. In addition, the Township's TDR program will create additional opportunities for public and private open space.**
- *Create a comprehensive open space system that provides passive and active recreation opportunities, preserves sensitive lands, creates connected green and blue ways, provides environmental education opportunities, and establishes greenbelts around existing and planned development.*  
**Same as above.**
- *Continue aggressive open space preservation efforts with funding shared among Berkeley Township, Ocean County, the State and federal governments and non-profit groups.*  
**Berkeley Township continues to partner with the County, State, and federal governments and non-profit groups for open space preservation. Since 2008, four (4) properties have been preserved in Berkeley Township through the Ocean County Natural Lands Trust Fund. Additional properties have been preserved by the municipality and through the assistance of non-profit groups.**

## Public Facilities and Services

- *Concentrate new community facilities such as a post office, police substation, fire station and governmental offices in a new Town Center.*  
**This remains an ongoing goal for the Township, especially in order to reduce the exposure of community facilities to the threats from storms like Hurricane Sandy and ensure that clear lines of communication exist to safeguard the continuity of services following such storms.**
- *Ensure efficient delivery of public services through interlocal agreements and regionalized services.*  
**Interlocal agreements and shared services have been utilized by the town such as with the use of fire and rescue services on Pelican Island and South Seaside Park.**
- *Strategically extend public water and sewer service to existing neighborhoods, infill development, identified commercial nodes and the Town Center based on cost-effectiveness, the need to address health issues, and consistency with the Township's growth management policies.*  
**Berkeley Township's TDR program is anticipated to limit the extension of water and sewer utilities toward existing neighborhoods. Hurricane Sandy caused damage to the municipal sewer pump system, releasing sewage into Barnegat Bay. Future consideration toward more resilient approaches to sewage infrastructure in high-risk flood areas may help to reduce these threats while maintaining service.**



## Community Design

- *Promote aesthetically pleasing human scale development that recognizes the character of traditional New Jersey bay front towns.*  
**Berkeley's Transfer of Development Rights program (TDR) is anticipated to help guide future development into three designated receiving districts that are oriented towards pedestrian activity. The recent revisions to Berkeley's zoning ordinances and adoption of the Town Center Redevelopment Plan will promote future development and redevelopment that is aesthetically pleasing and pedestrian oriented.**
- *Encourage traditional neighborhood elements such as sidewalks, alleys, front porches, public spaces, green spaces, street grids, street trees, and mixed uses that support pedestrian activity, human interaction, public safety, mass transit, and easy access to goods and services.*  
**In 2010, the median age of Berkeley Township residents was 61, and nearly 70% of residents are either considered part of the Baby Boomer Generation or older. This goal remains an ongoing priority for the township as the need for compact, pedestrian-oriented development becomes more and more important. The recent revisions to Berkeley's zoning ordinance is anticipated to promote the installation of traditional neighborhood elements that support pedestrian activity for all ages and abilities. In addition, the Planning Board recommends that all new developments have pedestrian elements including sidewalks as a way to gradually increase pedestrian connectivity across the Township.**
- *Encourage commercial development and retrofitting that emphasizes quality architecture, shared access and parking, transit friendly facilities, pedestrian circulation, appropriate intensification of buildings, and extensive landscaping especially in parking areas; and avoids blank or windowless walls, oversized parking areas, light pollution, multiple and uncontrolled highway access points.*  
**The recent revisions to Berkeley's zoning ordinance promotes development that emphasizes quality design, stormwater management through the use of aesthetically-pleasing green infrastructure, and compact development to encourage future demand for public transportation.**

## Recommendations from the 2008 Reexamination Report

The 2008 Master Plan Reexamination Report also highlighted six master planning recommendations that the township addressed in its 2003 reexamination report. The 2008 Reexamination Report stated that these issues should be carried forward. They are as follows:

- *The Land Use Plan should be revised to incorporate the 2020 Vision Statement.*  
**The 2008 Land Use and Circulation Elements incorporated the 2020 Vision Statement as part of its Goals and Objectives chapter.**
- *The Route 9 Corridor improvements proposed in the NJDOT Route 9 Corridor Master Plan should be pursued.*  
**Berkeley Township revised its Highway Business Zone and created overlay zones for its Town Center and Corridor Nodes that incorporate traditional neighborhood development features in 2011. In addition, the Township updated the landscaping requirements for the Route 9 corridor to reflect recommendations in the Route 9 Corridor Study.**
- *An NJDOT Highway Access Management Plan for the entire Route 9 Corridor should be completed.*  
**To date, NJDOT has not prepared this plan, however this remains an ongoing priority.**
- *A Redevelopment Plan should be prepared for the Beachwood Plaza redevelopment area, scattered site redevelopment areas and the rehabilitation areas.*



**The Town Center Redevelopment Plan for the Beachwood Plaza redevelopment area was adopted by ordinance by the Township Council in August 2009, and the Redevelopment Plan for the Manitou Park neighborhood was adopted in December 2009.**

- *The Western Boulevard extension should be retained as a Master Plan road.*  
**This remains an ongoing priority for the Township, especially as the Township pursues opportunities to become more resilient to future storm events. The 2012 Utility Service and Capital Improvement Plan identify the extension of Western Boulevard as a “critical link between the Pinewald and Bayville sections of Berkeley Township.”**
- *A land use study should be prepared for the Barrier Island section of the Township (south Seaside Park section of Berkeley) to analyze and review existing zoning in this area. The existing zone plan in this area does not adequately reflect established land use patterns to the extent that there are areas zoned for multi-family (two, three and four family units) and townhouses where single-family dwelling units and/or commercial and retail uses currently exist.*  
**The 2008 Land Use and Circulation Element revised the Land Use Plan Map to reflect several changes. In addition to the Town Center districts, and Nodes A-C, the map was revised on the Barrier Island to “provide context sensitive residential and commercial standards for this unique island neighborhood.” While the plan recommends that the zoning ordinance is revised to reflect these land use districts, which would replace the existing districts with island-specific zones, additional study is recommended to ensure that any changes including approaches to improve storm resiliency, be designed in a manner that is context-sensitive to south Seaside Park’s community character.**

## Recommendations of the 2008 Reexamination Report

The 2008 Reexamination Report recommended the addition of several new recommendations to the Master Plan:

- *The Berkeley Town Center Plan should be completed and adopted as a supplement to the Land Use Plan as well as be finalized and adopted as a redevelopment plan that would enable a redeveloper agreement to be executed between the redeveloper and the Township Council, acting as the redevelopment entity.*

**The Township completed and adopted the Town Center Redevelopment Plan. Town Centers I and II and Corridor Nodes A-C were included in the 2008 Land Use Plan. Agreements between the redeveloper and the Township are currently nearing completion and final approval.**

- *The TDR program should be completed and incorporated into the master plan in accordance with the Municipal Land Use Law.*  
**A TDR Element was completed by the township and adopted by the Planning Board in December 2012.**
- *A redevelopment plan should be prepared for the Manitou Park rehabilitation area and made part of the Land Use Plan.*  
**Berkeley Township adopted the Manitou Park Neighborhood Redevelopment Plan in December 2009.**
- *New master plan land use and circulation elements should be prepared to ensure that they support and complement each other. For example, the municipal road system should be evaluated to determine where streets should be improved and completed and where rights-of-way should be vacated in support of the Township’s open space preservation goals, the local TDR program, and efficient extension of infrastructure.*  
**Berkley Township adopted its 2008 Land Use & Circulation Elements in March 2009.**



- *The Township should plan for future telecommunications infrastructure and guide such facilities to Township-owned property. The Township should also investigate the possibility of “micro-sites” in parks and other properties with existing structures that offer locations for wireless communications equipment.*  
**This goal is no longer a priority, as improvements in telecommunications technology have made the location of infrastructure less of a concern, especially as coverage has expanded throughout the Township.**
- *The Township should continue to monitor the COAH rules and requirements and revise its Third Round Housing Plan as appropriate.*  
**Berkeley Township filed a plan with the Council on Affordable Housing (COAH), but the plan has not been certified, therefore the Township is classified as having a “participating” status before COAH. A decision by the New Jersey Supreme Court on March 10, 2015 established a transitional process in which the Township will be able to file a declaratory action judgment immediately upon the March 10 decision becoming effective on June 8, 2015. The Township is currently preparing a response to address its compliance with the affordable housing obligation.**
- *The Township should consider adding a sustainability and green buildings component to its open space and conservation element.*  
**This continues to remain a recommendation of this report.**

## Recommended Land Development Ordinance Changes

In addition, the 2008 Reexamination Report recommended the following zoning and land development ordinance changes. The status of these recommendations is provided below:

- *Simplify outmoded zoning districts particularly those with multiple overlays.*  
**This continues to remain a recommendation of this report. This includes the R-MF (Multifamily) zone and the R-60 (Residential), where the ordinance refers to subdistricts that are presently excluded from the zoning map. Other issues include the inconsistencies between impervious coverage and lot coverage requirements in the HB (Highway Business) district, as well as the Residential Two Family (R-2F) zone, which appears to only function as a conditional use of the R-100 district. The Township should continue to look at ways to simplify and clarify the ordinance language to make it more understandable and better organized.**
- *Simplify and clarify the official zoning map to remove inconsistencies and to be more user-friendly.*  
**Same as above.**
- *Reconcile zoning district regulations in the ordinance with the zoning map.*  
**Same as above. In addition to the comments mentioned above, other recommendations include the revision of the Corridor Node “C” district to reflect the recommendations of the Township’s TDR Plan Element.**
- *Develop new zoning districts for mixed-use nodes identified in 2020 vision plan and municipal self-assessment report. Consideration should be given to providing for larger tracts, diversity of uses, pedestrian orientation, TDR receiving areas, sanitary sewer service, and connections to existing neighborhoods.*  
**This was completed as part of the plan endorsement process.**
- *Bring the zoning ordinance and map into conformance with the new land use element.*  
**The Township has begun the process of implementing this recommendation. Following Plan Endorsement by the State Planning Commission, the Township adopted its TDR program in 2013, and revisions to the zoning ordinance and development regulations that encourage aesthetically-pleasing development and redevelopment have been adopted.**



## The Extent to Which There Have Been Significant Changes in the Assumptions, Policies and Objectives

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The following changes in the assumptions, policies and objectives relating to land use and development in Berkeley Township are noted:

### Changes at the Local Level

As indicated in the following subsections, there have been considerable changes at the local level since the adoption of the 2008 Master Plan Reexamination Report.

#### Hurricane Sandy

Hurricane Sandy struck the coast of New Jersey on October 29, 2012, causing extensive damage throughout Berkeley Township. The storm's destructive winds, flooding and storm surge disrupted everyday life for many in the community, damaging critical infrastructure, community facilities, public and private property, as well as extensive beach and soil erosion. Falling trees, branches and power lines resulted in over 32,000 reported power outages throughout the township, sometimes also causing damage to nearby buildings. Many properties experienced some degree of minor damage, while 252 properties were substantially damaged. Critical infrastructure, including seven of the Township's sewage pump stations went offline, preventing the backflow of raw sewage into streets and Barnegat Bay. Public facilities, including the public works building, administration building, police building, parks and recreation building and salt shed building all sustained varying degrees of damage. In addition, the extensive beach and soil erosion caused by the storm has the potential to put even more people at risk in the event of a future storm event.



The lessons learned from this rebuilding and recovery process is providing the municipality and its residents with the opportunity to reexamine what is needed to ensure its long-term viability. As a result, a central focus of the 2015 Master Plan Reexamination Report is to promote land use and development goals that will make Berkeley more resilient in order to withstand future storm events.

## Strategic Recovery Planning Report

Berkeley Township adopted a Strategic Recovery Planning Report in June 2014 that recommended a set of actions to guide the Township in promoting recovery from the impacts of Hurricane Sandy and resiliency to future storms.

The actions recommended by the Strategic Recovery Planning Report are as follows:

- *Reexamine the Township's Master Plan Elements to address post-Sandy strategies and policies related to hazard mitigation, community resiliency, and forecasted sea level rise and its impacts. This should involve amending the goals and objectives, incorporating areas of redevelopment, and up-to-date mapping of current land uses, new FEMA floodplain and wetland mapping, critical community facilities, and important natural resources areas.*
- *Adopt a Floodplain Management Plan as part of the Master Plan Reexamination.*
- *Automate, update, and expedite the Township's system for processing zoning and construction permits, including allowing inspectors to receive and manage permits with state of the art technology such as laptops and electronic tablets.*
- *Install a town-wide Supervisory Control and Data Acquisition (SCADA) system in conjunction with the Township's owned and operated facilities (including the Municipal Building and Police Department, fire houses, etc.) to communicate critical alarms to a centralized location or operational personnel.*
- *Update the Township Hazards Mitigation Plan and Emergency Operating Plan to incorporate updates and revisions based on key lessons learned from Sandy and post-storm response efforts.*
- *Create a Township Debris Management Plan including such components as allocating debris removal sites, collection strategies, and debris reduction methods.*
- *Prepare a beach-dune system susceptibility assessment to identify weaknesses in the dune system and to highlight areas that may be vulnerable to storm damage (such as erosion, overwash, or breach).*
- *Prepare a Capital Improvement Plan identifying needed capital improvements to improve local resiliency.*
- *Update the Township's GIS database and user interface to catalog and inventory all infrastructure owned by the Township, including roadways, and its stormwater and sanitary sewer collection systems. This will include up-to-date GPS mapping of the utility infrastructure, as well as inventory and classification of the road network to build a Township-wide capital improvement plan.*
- *Continue to increase Township participation in FEMA's Community Rating System (CRS), including a resiliency survey or assessment.*

Implementation of the recommendations that have been listed above will promote recovery from Hurricane Sandy and increased resiliency to future storms. It should be noted that the development of this 2015 Master Plan Reexamination Report, and the proposed amendments to the Master Plan Elements in Appendix A are part of this process, providing the Township with the steps necessary to promote land use and development goals that will make it more resilient toward future storm events.

## Demographic Changes

During the decade from 2000 to 2010 there was an increase in both the total population (+3%) and housing units (+7%) in Berkeley Township. The 2010 Census shows that the median age in Berkeley dropped from 66 to 61, however Figure 1 and Figure 2 illustrates that the age distribution is still skewed towards older adults. In addition, Berkeley's 2008 Housing Element and Fair Share Plan reported the dramatic increase in year-round residences over the past few decades while seasonal housing has declined.



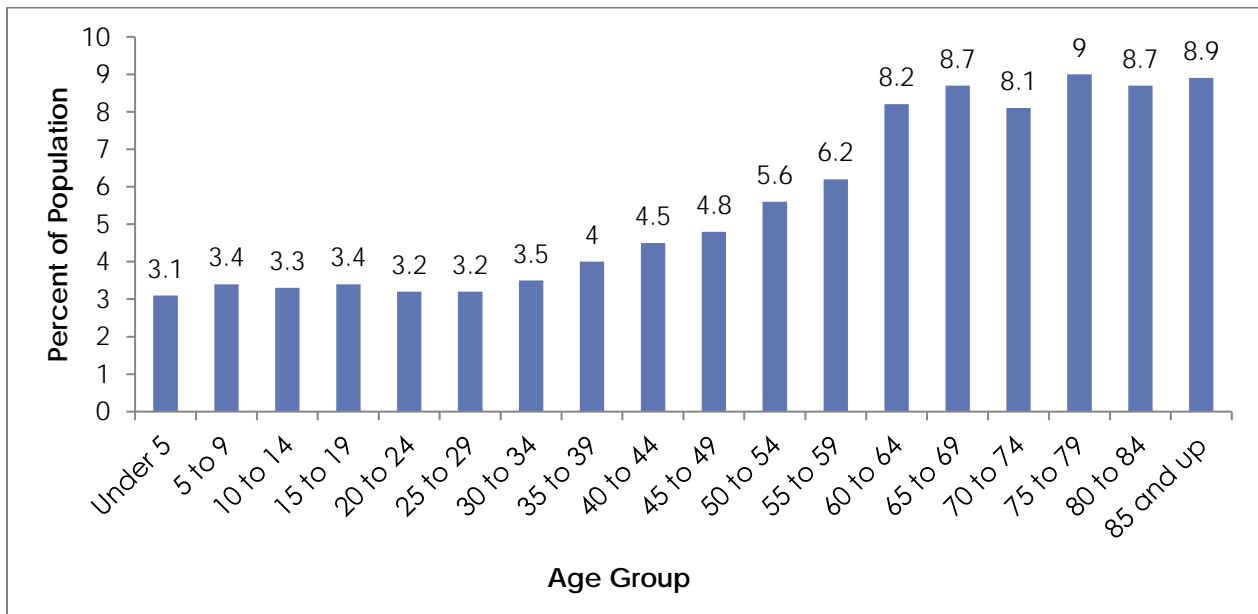
Some population and housing characteristics from the 2000 and 2010 Censuses are provided below:

**Table 1: Population and Housing Characteristics**

	2000	2010
<b>Total Population</b>	39,991	41,255
Male	17,765	18,531
Female	22,226	22,724
<b>Median Age</b>	66.3	61.1
<b>Race</b>		
White	97.1%	94.8%
Black	1.3%	1.8%
Asian and other	1.6%	3.3%
Hispanic or Latino	2.3%	4.9%
<b>Households</b>		
Family	12,175 (61.4%)	11,547 (56.7%)
Non-Family	7,653 (38.6%)	8,802 (43.3%)
Total	19,828	20,349
<b>Housing Occupancy</b>		
Total Units	22,288	23,818
Occupied Units	19,828	20,349
Vacant and Seasonal Use (units)	2,460	3,469
<b>Housing Tenure</b>		
Total Occupied Units	19,828	20,349
Owner Occupied Units	18,423	18,086
Renter Occupied Units	1,405	2,263

Source: U.S. Census Bureau, 2000 & 2010 Census Data

**Figure 1: Age Distribution**

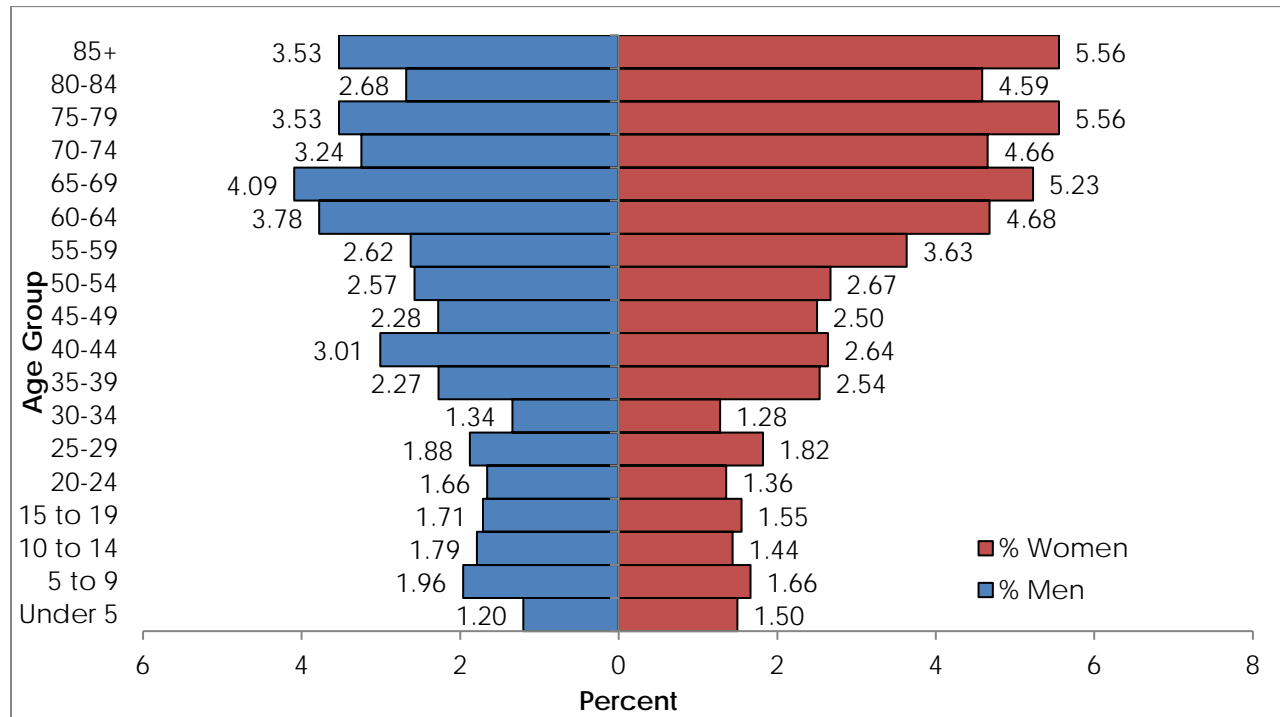


Source: U.S. Census Bureau, 2010 Census Data





Figure 2: Age Distribution by Gender



Source: U.S. Census Bureau, 2009-2013 American Community Survey 5-Year Data

An important caveat to these data is that it predates Hurricane Sandy. Therefore, at this time we are unable to fully determine the impacts Hurricane Sandy had on the population and availability of housing units in Berkeley Township.

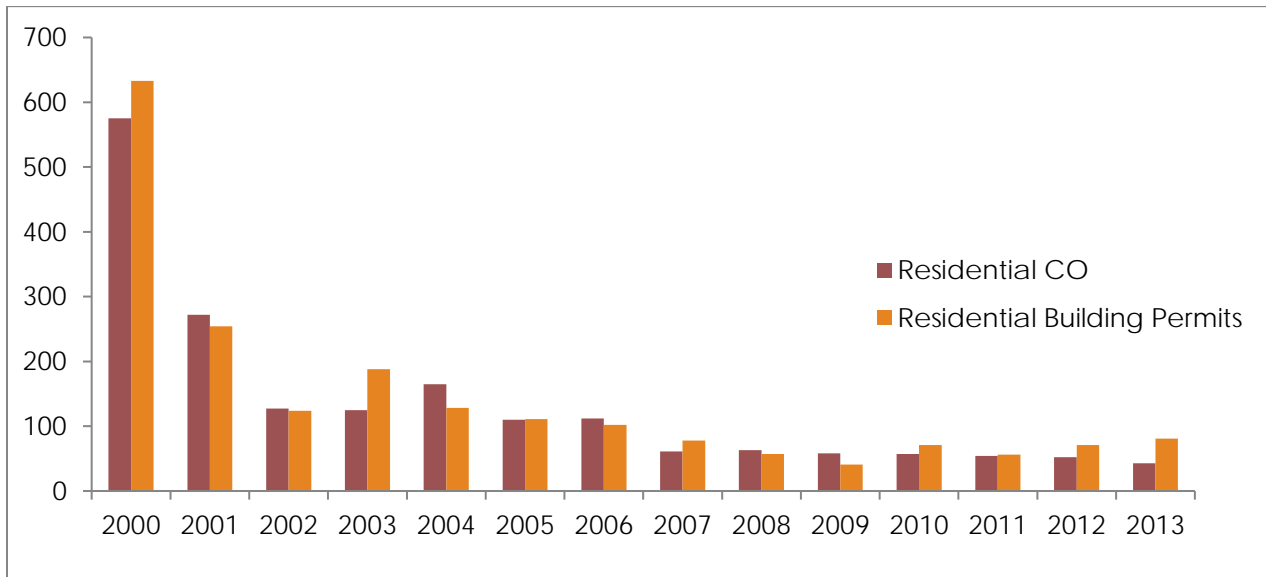
### 2008 National Financial Crisis and Housing Slowdown

The adoption of the 2008 Master Plan Reexamination Report coincided with the national collapse of the real estate market and economic downturn. While the market collapse may have played some role in the decrease to residential development, building permit data from 1990 through 2013 suggests that residential development has been slowing since it peaked in 2000. Berkeley Township issued an average of 276 residential building permits each year between 1991 and 2000, while it only issued an average of 115 building permits each year in the subsequent decade.

Following Hurricane Sandy, the number of residential demolitions increased from 15 in 2012 to 111 in 2013, however there has also been a smaller, but corresponding increase to the number of residential certificates of occupancy and building permits between 2013 and September 2014. At this point, it is difficult to determine if this is a result of post-Sandy rebuilding or a sustained long-term increase in residential development.

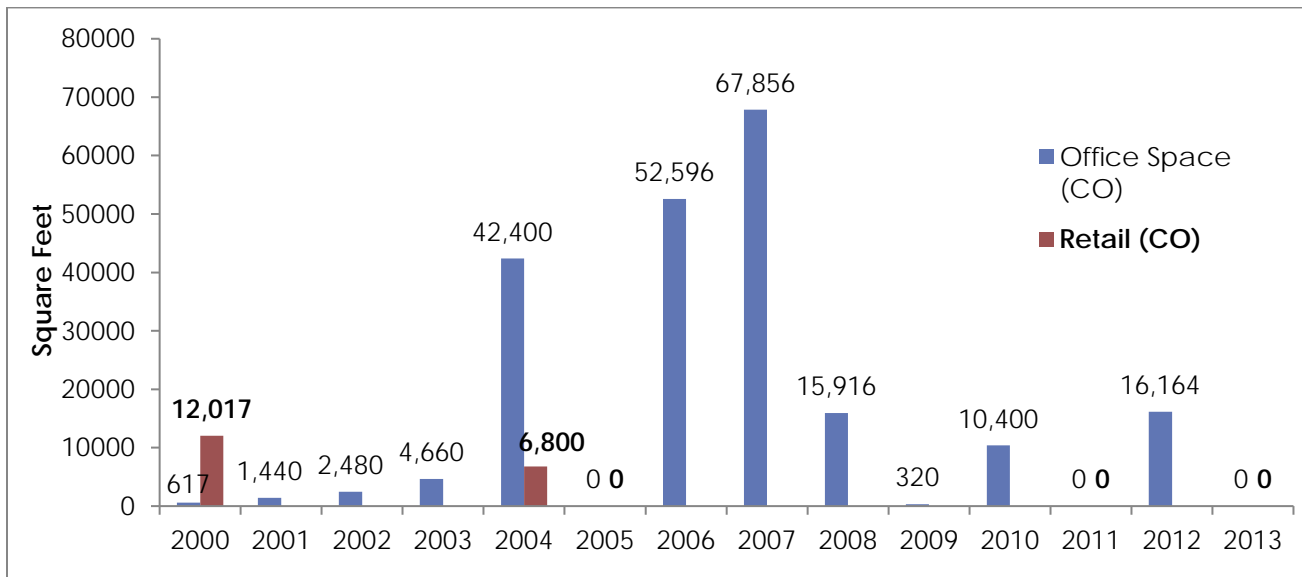


**Figure 3: Residential Building Permits Compared to Certificates of Occupancy 2000-2013**



Source: New Jersey Department of Labor and Workforce Development

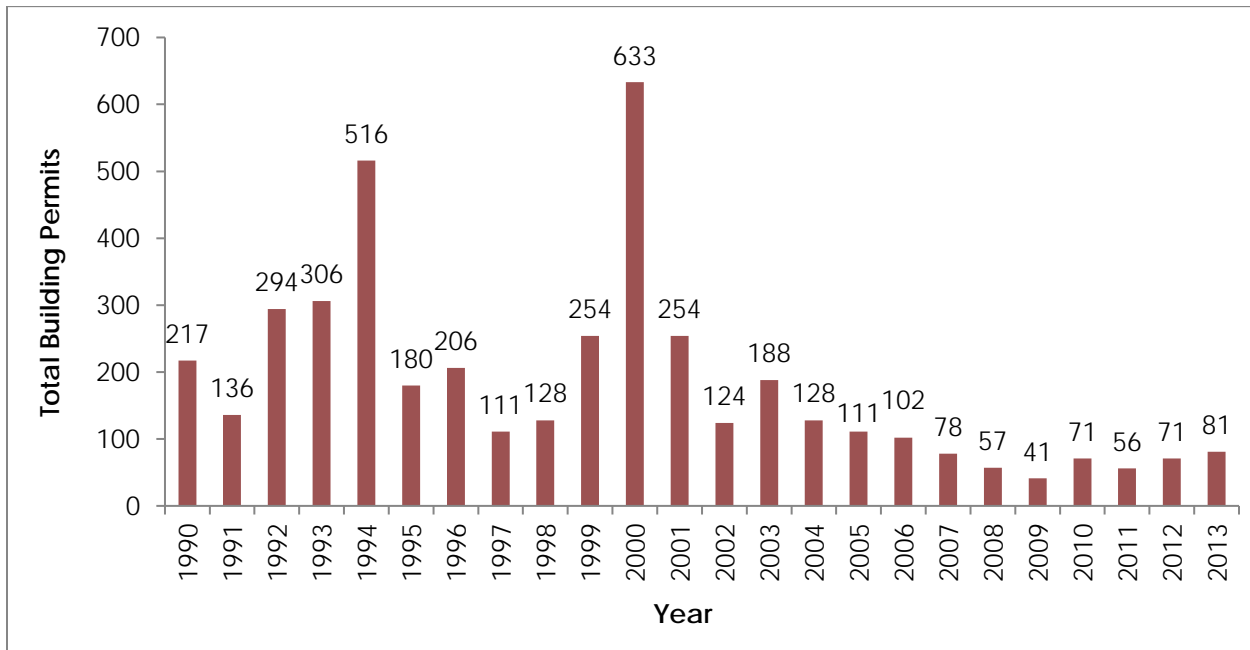
**Figure 4: Non-Residential Certificates of Occupancy By Square Feet 2000-2013**



Source: New Jersey Department of Labor and Workforce Development



Figure 5: Residential Building Permits Issued By Year 1990-2013



Source: New Jersey Department of Labor and Workforce Development

### 2008 Land Use and Circulation Master Plan Elements (Adopted 2009)

Berkeley Township prepared and adopted new land use and circulation elements to its Master Plan shortly after the 2008 Reexamination Report. The combined 2008 Land Use and Circulation Elements incorporated the 2020 Vision Statement, but also included a list of 10 goals designed to focus the Vision Statement through the implementation of 9 objectives, which echo the goals and objectives described in the 2008 Reexamination Report.

The goals from the 2008 Land Use and Circulation Elements are as follows:

- *Promote aesthetically pleasing human scale development that recognizes the character of traditional New Jersey bay front towns.*
- *Provide a healthy balance of land uses that preserves the residential character of the neighborhoods; maintains a balanced stock of quality housing that accommodates diverse lifestyles and age groups; and provides convenient opportunities to acquire essential goods and services.*
- *Direct most new development to a well-planned, compact, mixed use Town Center and redevelop existing commercial centers into accessible, compact and well-defined nodes with linkages to the surrounding neighborhoods.*
- *Provide connections between residential areas, commercial nodes, community facilities and the Town Center through an attractive, free flowing circulation system.*
- *Provide opportunities for residents and visitors to access multiple modes of transportation including public transportation, bikeways and pedestrian ways.*
- *Provide an alternate route for north-south through traffic that enhances rather than detracts from the community; and supports the development of a Town Center as opposed to a strip/sprawl development pattern.*



- *Create a comprehensive open space system that provides passive and active recreation opportunities, preserves sensitive lands, creates connected green and blue ways, provides environmental education opportunities, and establishes greenbelts around existing and planned development.*
- *Preserve the Township's natural resources to protect water quality, manage stormwater, reduce the potential of flood damage, protect endangered habitats, and provide open space.*
- *Encourage and support policies and actions to reduce the introduction of harmful green house gasses by reducing sprawl, and encouraging green buildings, promoting alternate means of transportation including walking, biking and public transit, and preserving open space and wetlands.*
- *Strategically extend public water and sewer service to existing neighborhoods, infill development, identified commercial nodes, and the Town Center based on cost-effectiveness, the need to address health issues, and consistency with the Township's growth management policies.*

The objectives from the 2008 Land Use and Circulation Elements are as follows:

- *Complete the planned build out of existing residential neighborhoods and strategically complete the residential street grids to ensure connectivity within and between neighborhoods*
- *Encourage traditional neighborhood elements such as sidewalks, alleys, front porches, public spaces, green spaces, street grids, street trees, and mixed uses that support pedestrian activity, human interaction, public safety, mass transit, and easy access to goods and services*
- *Encourage commercial development and retrofitting that emphasizes quality architecture, shared access and parking, transit friendly facilities, pedestrian circulation, appropriate intensification of buildings, extensive landscaping; and which avoids oversized parking areas, light pollution, and multiple and uncontrolled highway access points.*
- *Encourage a mix of quality commercial use, retail, entertainment, dining, and upper story residences in the Town Center and corridor nodes to create vibrancy and to serve local and regional markets.*
- *Continue aggressive open space preservation efforts with funding shared among Berkeley Township, Ocean County, the State and federal governments and non-profit groups*
- *Improve the level of service along the Route 9 corridor through the implementation of creative engineering, land use and design techniques including appropriate recommendations from the Route 9 Corridor Master Plan. Utilize traffic calming measures in areas of high pedestrian activity.*
- *Create a multi-use trail system that ties into the Barnegat Branch Rail Trail to link neighborhoods, community facilities, parks and open space and Barnegat Bay.*
- *Develop an access management plan for Route 9.*
- *Determine the feasibility of additional local bus or jitney routes or of modifying existing routes to better serve demands.*

At the time of this Reexamination Report, these goals and objectives continue to remain valid.

### **Town Center Districts**

As part of the 2020 Vision Statement, Berkeley Township identified the need to concentrate development in established centers as an approach to direct development away from a pattern of suburban sprawl. Through a lengthy planning process which culminated in an endorsement by the State Planning Commission in 2012, Berkeley established a TDR program that would transfer development away from substandard and/or environmentally constrained lots in the Pinewald area of the municipality and into areas that could be readily served by public infrastructure through a combination of new development and redevelopment.

The Township's recent adoption of TDR and the associated Town Center redevelopment plan has created the regulatory framework necessary to realize its Vision Statement goals and objectives.



It is important for Berkeley to encourage such centers that not only have access to critical infrastructure and essential services, but are also protected from flooding and future storm events so that Berkeley can incorporate resiliency into its long-term planning decisions.

In addition, as demand from the Millennial and Baby Boomer generations for amenity-rich, pedestrian oriented development grows, Berkeley will have an advantage over other municipalities that have yet to address many of the time-intensive planning and regulatory hurdles that prohibit such development and create development that meets the needs of all ages and abilities.

## Changes at the County Level

Since the adoption of the 2008 Master Plan Reexamination Report, Ocean County produced several planning documents, including the 2011 Ocean County Comprehensive Master Plan, 2014 Ocean County Multi-Jurisdictional All Hazard Mitigation Plan, and the Ocean County Long-Term Community Recovery Plan.

## 2011 Ocean County Comprehensive Master Plan

The Ocean County Planning Board adopted a comprehensive master plan in 2011, which serves as a county policy statement about the future development of Ocean County. While it makes no statements that are explicitly relevant to future land use planning within Berkeley Township, this plan does make a number of recommendations relevant to the recovery from Hurricane Sandy and the promotion of resiliency to future storm impacts and other potential natural hazards in Ocean County.

This section states the recommendations of the 2011 Ocean County Comprehensive Master Plan, with commentary concerning the relevance to resiliency planning in Berkeley Township. The commentary is in **bold text**.

- *Encourage the New Jersey Department of Transportation to modernize and upgrade state highways throughout Ocean County, including US Route 9, NJ Route 35, NJ Route 37, NJ Route 70, NJ Route 72, NJ Route 88, and NJ Route 166.*  
**Modernizing and upgrading Ocean County's highways will improve mobility and facilitate the evacuation of Berkeley Township in times of crisis, including during future storms. This is particularly true for US Route 9, which provides a north-south connection through eastern Berkeley Township, and intersects with numerous state highways and other roadways that provide connections to the west.**
- *Encourage the retention of established residential neighborhoods and the rehabilitation of the county's older housing stock. Facilitate participation in home rehabilitation and historical preservation grant programs, where applicable.*  
**Home rehabilitation may help to improve the structural integrity of existing housing stock. This provides extra security and protection during extreme weather events.**
- *Encourage low-impact design techniques to minimize the disturbance of natural areas and maximize the recharge of stormwater on-site.*  
**Maximizing the recharge of stormwater on-site may help to decrease the incidence of flooding. This has also been highlighted as a priority by the Berkeley Township 2008 Land Use and Circulation Plan Element.**



- *Support the tourism amenities and needs of shore towns and continue to facilitate the protection and replenishment of county's beaches and shoreline areas.*  
**Protection and replenishment of the county's beaches and shorelines areas, including those along Barnegat Bay in the eastern part of Berkeley Township, will help the county to cope with future hurricanes and storms in order to mitigate their impacts.**
- *Maintain an ongoing evaluation of the recreational needs of Ocean County residents, and assist in identifying new park and open space areas, as necessary.*  
**Encouraging the preservation of open space, particularly in locations at risk of coastal flooding and potential sea level rise will support stormwater infiltration, and offer a protective buffer to existing residential and commercial areas from flooding and storm surges.**
- *Continue to work with all federal, state, local, and non-profit partners to acquire open space and maximize financial resources available for preservation.*  
**Noted previously, expansion of open space areas promotes resiliency to future hurricanes and storms.**
- *Continue to assist the State of New Jersey in the implementation of the Governor's Ten-Point Plan for Barnegat Bay.*  
**Key parts of the Governor's Ten-Point Plan that will help protect Berkeley Township and promote resiliency to extreme weather events include funding stormwater mitigation projects and acquiring land in the watershed.**
- *Encourage land use planning strategies such as low-impact design to preserve open space and maximize the natural infiltration of stormwater.*  
**Preservation of open space and maximization of stormwater infiltration helps minimize flooding and promotes resiliency to future hurricanes and storms.**
- *Explore and assess best management practices used by other areas in the country to address stormwater management.*  
**Effectively addressing stormwater management helps minimize flooding and promotes resiliency to future hurricanes and storms.**
- *Continue to assess structural and nonstructural options for stormwater management to increase infiltration, remove debris, and reduce nutrient and pollution loads*  
**Increasing infiltration will help to reduce flooding. Additionally, removing debris will help increase the efficiency of existing stormwater management facilities.**
- *Encourage compliance with new legislation that requires the New Jersey Department of Transportation to address stormwater management issues on state highways, including US Route 9, NJ Route 35, NJ Route 37, NJ Route 70, NJ Route 72, NJ Route 88, and NJ Route 166.*  
**Addressing stormwater management issues along highways will help minimize their impacts and increase their safety. This is particularly important as highways generate stormwater runoff, and may serve as evacuation routes during emergencies.**

Implementation of these recommendations will help promote recovery from the impacts of Hurricane Sandy and build resiliency to future storm impacts and other potential natural hazards in Berkeley Township and the county at large.

## 2014 Ocean County Multi-Jurisdictional All Hazard Mitigation Plan

The 2014 Multi-Jurisdictional All Hazard Mitigation Plan is intended to provide a blueprint for saving lives and reducing property damage from the effects of natural and man-made disasters



in Ocean County, as well as to improve community resiliency following disastrous events. The Multi-Jurisdictional All Hazard Mitigation Plan is also intended to fulfill state and federal legislative requirements related to local hazard mitigation planning, and facilitate access to pre- and post-disaster grant funding.

The Multi-Jurisdictional All Hazard Mitigation outlines a mitigation strategy that is centered on the following countywide goals and objectives:

- *Encourage sustainable development to protect people, property, community resource and the environment from natural and human-made disasters.*
  - *Meet and exceed minimum standards of the National Flood Insurance Program.*
  - *Manage building code, land use code, ordinance and other planning mechanisms to prevent and mitigate the impact of disasters on people and property.*
  - *Improve information available for mitigation planning.*
  - *Coordinate and increase applications for federal and state grant programs.*
  - *Integrate and leverage other planning mechanisms from: neighboring jurisdictions; local, county and regional organizations; and, state partnerships to implement the plan.*
  - *Improve shelter management.*
- *Build and rebuild structures and infrastructure to protect people, and to reduce impacts of future disasters.*
  - *Increase the number of residential properties protected from hazards.*
  - *Increase the number of community resources and amount of infrastructure protected from hazards.*
  - *Improve the ability of critical facilities and infrastructure to safely operate during storms and utility interruptions.*
  - *Improve evacuation capability.*
- *Protect and restore the natural environment to support disaster resiliency.*
  - *Improve the health of natural systems to safely and naturally accommodate flooding and wildfire.*
  - *Improve the health of natural systems used to protect residential properties and other community resources.*
  - *Plan for increased open space in the most vulnerable areas.*
  - *Promote appropriate urban-wild land interface for wildfire mitigation.*
- *Promote education, awareness and outreach before, during and after disaster.*
  - *Improve and expand information and opportunities for input available by television, radio, websites, social media, newsletters, and meetings.*
  - *Increase participation in mitigation programs, including the Community Rating System, StormReady, and FireWise programs.*
  - *Tailor timely messages for audiences, including children, parents, community groups, universities, seniors and other groups.*
  - *Improve alert and warning systems.*

To support the implementation of the 2014 Multi-Jurisdictional All Hazard Mitigation Plan in Berkeley Township, the Plan recommends that the Township use it to implement the mitigation strategies and actions as outlined in the Plan. In addition, the 2014 Multi-Jurisdictional All Hazard Mitigation Plan identifies the following Berkeley Township-specific actions to mitigate hazards:

- *Acquire flood-prone residential properties;*
- *Adopt ABFE maps;*
- *Continue dune grass planting in the fall;*
- *Continue outreach through local radio station;*
- *continue or develop fire & police outreach in schools;*
- *continue to enforce building codes;*



- *continue to participate in the National Flood Insurance Program (NFIP);*
- *Demolish and reconstruct residential properties;*
- *Develop and implement shelter management plans;*
- *Dredge in appropriate locations to mitigate flooding and/or maintain lagoon access;*
- *Elevate residential properties;*
- *implement erosion control related projects;*
- *implement flood control related projects;*
- *Implement flood proofing project*
- *Implement generator related action*
- *Improve evacuation plans with alternative routes and/or re-entry guidance*
- *Increase regulation for storage of Hazardous Materials in ordinance*
- *Join or maintain FireWise Program*
- *Join or maintain Storm Ready program*
- *join maintain and/or increase rating for CRS program;*
- *Maintain and improve dunes*
- *maintain and improve information on website and/or Facebook;*
- *Maintain Emergency Operations Plan*
- *Maintain Flood Mitigation Plans*
- *Maintain, improve, and expand education and awareness programs*
- *Obtain, improve and/or maintain warning related systems, including Nixle and Reverse 911*
- *Support and share information on grant programs that support residential, business and natural resource mitigation projects with appropriate local stakeholders; and*
- *USACE beach replenishment and/or dune restoration projects.*

### **Ocean County Long-Term Community Recovery Plan**

The 2015 Ocean County Long-Term Community Recovery Plan was an effort by the county, in collaboration with officials on the state and local levels as well as nonprofits and other community stakeholders, to develop a long-term recovery strategy after Hurricane Sandy. The plan focused on resiliency, recommending actions that would allow Ocean County to continue to prosper, even following Sandy-like events.

The recovery plan outlines 10 actions that would form its recovery strategy, focusing on actions that would help reduce flood insurance premiums, shoreline and infrastructure protection, transportation and residential improvements:

- *Compile Countywide Infrastructure Assessment Report*
- *Develop Grant Advisor Program*
- *Improve Resiliency of Residential Structures for All Income Groups*
- *Improve County Evacuation Plan*
- *Improve County Shelter Management Plan*
- *Protect and Restore Shorelines*
- *Develop a Risk-Preparedness Marketing Campaign*
- *Develop Countywide Tools to Support CRS Participation*
- *Develop an All-County Advertising Campaign*
- *Develop Water Taxi or Ferry System*





## Comprehensive Farmland Management Plan

The overall goal of the Comprehensive Farmland Management Plan is to support the promotion and retention of Ocean County's agricultural industry through farmland preservation. This is primarily done through a variety of techniques, including purchasing of development easements, donation of development easements, fee-simple acquisition of farmland, and other techniques.

According to this Plan, Berkeley Township has 16 acres of farmland-assessed property. No portion of Berkeley is located within an Agricultural Development Area, which are identified as areas where agricultural uses are preferred. This Plan specifies that the county's future farmland preservation efforts will focus on its designated Agricultural Development Areas. It follows that Berkeley Township will not be a focus of the future farmland preservation program that is envisioned by the Comprehensive Farmland Management Plan.

It is important to note that the retention and expansion of agriculture in Berkeley Township (as well as in Ocean County as a whole) is generally supportive of reducing vulnerabilities to storms, as agricultural lands typically have a very low amount of impervious cover and support stormwater infiltration.

## Barnegat Branch Trail

The Barnegat Branch Trail Conceptual Plan was prepared in 2007 with the primary goal of enhancing the recreational use of the proposed Trail corridor through increased access and visibility and improved physical conditions. The Barnegat Branch trail is a rail trail project planned to connect Barnegat Township to Downtown Toms River along abandoned railroad right-of-ways. A section the project in the southern part of Berkeley Township has been completed, and another section began construction in 2014. Future phases will connect this section of the trail with existing segments in South Toms River Borough and Beachwood Borough.

## Changes at the State Level

As indicated in the following subsections, there have been considerable changes at the state level since the adoption of the 2008 Master Plan Reexamination Report.

## State Strategic Plan

The NJ State Planning Commission is now staffed by the Office of Planning Advocacy (OPA) which is within the Department of State. The OPA has released a draft State Strategic Plan to supersede the current State Development and Redevelopment Plan. Public Hearings were held in February, March, and September of 2012. The draft State Strategic Plan is based upon a criteria-based system rather than a geographic planning area. The draft State Strategic Plan has not been adopted by the State Planning Commission at this time and was put on hold following Hurricane Sandy. Berkeley Township should continue to monitor the progress of the new plan and its implication for future planning in the Township.

During this time however, Berkeley Township sought and received Plan Endorsement from the State Planning Commission in July 2012.



### Time of Decision

On May 5, 2010, Governor Christie signed P.L. 2010 c.9 into law, effectively nullifying the “time of decision” rule, which had previously allowed municipalities the ability to alter zoning requirements even after an application for development had been filed but before a formal decision on the application had been rendered. P.L. 2010 c.9 provides that the development regulations applicable to a property at the time an application for development is filed will govern the review of the application and any decision made pertaining to it. P.L. 2010 c.9 went into effect on May 5, 2011.

### Solar and Wind Facilities as Permitted Uses in Industrial Zones

The Municipal Land Use Law was amended in 2008 to provide that solar and wind facilities on parcels of 20 acres or more shall be deemed as permitted uses in industrial zone districts.

### Green Element

The New Jersey Legislature amended the Municipal Land Use Law in 2008 to add an additional optional element to the municipal master plan. The MLUL describes the new element as follows:

*A green buildings and environmental sustainability plan element, which shall provide for, encourage, and promote the efficient use of natural resources and the installation and usage of renewable energy systems, consider the impact of buildings on the local, regional and global environment; allow ecosystems to function naturally; conserve and reuse water; treat storm water on site; and optimize climatic conditions through site orientation and design.*

### Noncontiguous Cluster Development

The New Jersey Legislature amended the Municipal Land Use Law in 2013 to permit municipalities the ability to add the noncontiguous cluster as an available option for the subdivision of land. While traditional cluster development permits the concentration of development on a portion of the site, allowing the remainder to be preserved, noncontiguous cluster development permits clustering across an entire tract, while preserving another tract elsewhere in the municipality for parks, open space, historic preservation or flood control. This differs from a TDR program in that participation in the program is voluntary, it is intended for use on a smaller scale, and also depends upon individual landowners and developers to purchase and transfer development potential.

### Complete Streets

The New Jersey Department of Transportation (NJDOT) adopted a Complete Streets Policy in late 2009. A “complete street” is defined by the NJDOT as a “means to provide safe access for all users by designing and operating a comprehensive, integrated, connected multi-modal network of transportation options.” Seven (7) counties and 113 municipalities (as of March 2015) have adopted complete streets policies. The intent of the policy is to provide streets to meet the needs of all types of users and all modes of circulation- walking, bikes, cars, trucks, and buses. A few municipalities have expanded the complete streets concept to include “Green Streets,” which incorporates the use of green infrastructure into future transportation improvements as a way to manage stormwater and beautify local streetscapes.



### **Redevelopment Case Law**

There have been a number of recent court decisions concerning the use of the criteria for determining an area “in need of redevelopment” pursuant to the Local Redevelopment and Housing Law (LRHL). The most significant of these decisions is the New Jersey Supreme Court’s decision in *Gallenthin vs. Paulsboro*, which reevaluated and set guidelines for the use of the statutory criteria for determining an area in need of redevelopment. The New Jersey Legislature also held hearings in 2010 on legislation to update the New Jersey Redevelopment and Housing Law. In 2013 Assembly Bill 3615 became law and is intended to protect property owners by limiting the redevelopment powers of municipalities under the LRHL. This amendment raises the standard for a blight finding to one in which the property must be unproductive. Given that some of the Township’s revitalization efforts are based on redevelopment, municipal officials should monitor these legal decisions and legislative initiatives.

### **Pinelands Comprehensive Management Plan**

The Pinelands Comprehensive Management Plan (CMP) is intended to serve two functions: as a general guide for local authorities in preparing master plans and land use ordinances for certification by the Pinelands Commission, and as a planning and regulatory mechanism that can be adopted and enforced by the Commission if a county or municipality fails to secure certification.

The regulations and standards contained in the plan are designed to promote orderly development of the Pinelands so as to preserve and protect the area’s significant and unique natural, ecological, agricultural, archaeological, historical, scenic, cultural, and recreational resources.

According to the CMP, municipalities that have land within the Pinelands Area must bring their master plan and land use ordinances into conformance with the minimum standards set forth in the CMP. Berkeley was certified by the Pinelands Commission based on the Township’s adoption of the Pinelands Area Master Plan and Pinelands Area Land Development Ordinance in 2001.

Under the guidance of the Pinelands Comprehensive Management Plan, the Pinelands National Reserve is carefully regulated to support and preserve the health of the ecosystem, while permitting compatible development. The Pinelands Commission has applied many smart growth and planning concepts such as watershed management, Transfer of Development Rights (TDR) including the Pinelands Development Credit Program (PDC), and timed growth and conservation planning.

Approximately 10,455 acres (38%) of the Township falls under the jurisdiction of the Pinelands Commission. This includes land to the west of the Garden State Parkway and south of the New Jersey Central Power and Light Company right-of-way. Most of the National Reserve that is not under the jurisdiction of the Pinelands Commission falls within the CAFRA regulatory jurisdiction where NJDEP is charged with implementing the Pinelands CMP.

### **Coastal Area Review Act (CAFRA)**

CAFRA regulations apply to development projects near coastal waters. Generally, the closer the project is to the water, the more likely it will be regulated. The CAFRA zone for Berkeley generally



applies to land in the Township east of the Parkway, extending out to Barnegat Bay, and including the Township's Pelican Island and South Seaside Park communities. This also includes land to the west of the Parkway and to the north of the New Jersey Central Power and Light Company right-of-way. Approximately 17,250 acres (62%) of the Township is under the jurisdiction of CAFRA.

CAFRA is divided into zones where development is regulated by varying degrees. The CAFRA law regulates almost all development activities involved in residential, commercial, or industrial development, including construction, relocation and enlargement of buildings, excavation, grading, shore protection structures, and site preparation.

### **New Jersey Council on Affordable Housing (COAH)**

COAH originally adopted affordable housing rules for the third round period in 2004. However, an Appellate Division decision in 2007 stayed COAH from reviewing any plans as part of a petition for substantive certification, and resulted in a remand of the 2004 rules back to COAH to revise them consistent with the Appellate Division decision. COAH subsequently adopted revised third round rules in 2008.

In 2010, the Appellate Division invalidated COAH's 2008 third round rules, and the "growth share" methodology upon which they were based. In 2013, the New Jersey Supreme Court upheld and modified the Appellate Division's 2010 decision that invalidated COAH's third round rules. As a result, COAH was then charged with the task of adopting new affordable housing rules.

COAH has since failed twice to adopt new affordable housing rules for the third round period. Due to COAH's failure to adopt such rules, the New Jersey Supreme Court concluded on March 10, 2015 that there no longer exists a legitimate basis to block access to the courts, which was the original intent of the COAH process. The New Jersey Supreme Court's March 10 decision notes that: "parties concerned about municipal compliance with constitutional affordable housing obligations are [now] entitled to such access, and municipalities that believe they are constitutionally compliant[,] or that are ready and willing to demonstrate ... compliance [with such obligations,] should be able to secure declarations that their housing plans and implementing ordinances are presumptively valid in the event they ... must defend [themselves] against exclusionary zoning litigation."

In its March 10 decision, the New Jersey Supreme Court established a transitional process to not immediately allow exclusionary zoning actions to proceed in court. The decision notes that: "[d]uring the first thirty days following [June 8, 2015] ..., the only actions that will be entertained by the courts will be declaratory judgment actions filed by any [municipality] ... that either (1) had achieved substantive certification from COAH under prior iterations of Third Round Rules before they were invalidated, or (2) had "participating" status before COAH. Assuming [that] any such [municipality] ... waits and does not file a declaratory judgment action during [the] ... thirty-day period, an action may thereafter be brought by a party against [the municipality] ..., provided the action's sole focus is on whether the [municipality's] ... housing plan meets its Mount Laurel obligations (a constitutional compliance challenge). The court's evaluation of a [municipality's] ... plan that had received substantive certification, or that will be submitted to the court as proof of constitutional compliance, may result in the [municipality's] ... receipt of the



judicial equivalent of substantive certification and accompanying protection as provided under the [Fair Housing Act] ....”

Berkeley Township has filed a plan with COAH, but the plan has not been certified. Therefore, the Township fulfills Criterion 2 as outlined in the transitional process that has been described above. The Township is in the process of preparing a response to address compliance with its affordable housing obligation.

## Changes at the Federal Level

### Executive Order Establishing a Federal Flood Risk Management Standard

In 2013, the President’s Hurricane Sandy Rebuilding Task Force adopted a higher flood standard for the Sandy-affected region to ensure that federally funded buildings, roads and other projects were rebuilt stronger to withstand future storms. The Sandy Task Force also recommended that the Federal Government create a national flood risk standard for federally funded projects beyond the Sandy-affected region. The new standard gives agencies the flexibility to select one of three approaches for establishing the flood elevation and hazard area they use in siting, design, and construction. They can:

- Use data and methods informed by best-available, actionable climate science;
- Build two-feet above the 100-year (1%-annual-chance) flood elevation for standard projects, and three feet above for critical buildings like hospitals and evacuation centers; or
- Build to the 500-year (0.2%-annual-chance) flood elevation.

On January 30, 2015, the President released proposed guidelines for these standards that are available for 60 days of public comment. Once public input has been considered, including from a series of public listening sessions that will be held across the country, and the guidelines are finalized, agencies will implement the Standard through their own rulemaking or other procedures, which also will incorporate input from the public and stakeholders.

The new flood standard will apply when Federal funds are used to build, or significantly retrofit or repair, structures and facilities in and around floodplains to ensure that those structures are resilient, safer, and long-lasting. It will not affect the standards or rates of the National Flood Insurance Program. Each agency will carefully consider how to appropriately apply this standard, and consider robust public input before deciding how to implement it.



## Specific Changes Recommended for the Master Plan and Development Regulations

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Resiliency describes the ability of a community to withstand the next Sandy, but it also reflects the ability to endure a broader range of challenges. Put another way, what steps can Berkeley Township take to ensure it remains a desired place to play, live, work and invest in? This 2015 Reexamination Report provides the Township with an important opportunity to reconsider its immediate and long-term priorities in order to make the necessary land use adjustments that will help ensure the long-term safety, security and prosperity of Berkeley's residents, visitors and businesses. A Master Plan Amendment has been compiled and is included as Appendix A.

The original 1997 Berkeley Township Master Plan, and the reexamination reports that followed in 2003 and 2008 laid the groundwork for Berkeley's extensive redevelopment and density transfer plans, designed to foster new development in areas with existing utilities and infrastructure, while preserving hundreds of acres of natural lands. Following the adoption of the 1997 Master Plan, Berkeley Township has completed several substantial planning projects that prepare a significant portion of the groundwork required to recover and rebuild in the years ahead. As a result, the 2015 Reexamination Report reaffirms the Township's goals, objectives and work done to date.

In light of the changes in assumptions, policies and objectives at the local, county, and state levels, the 2015 Master Plan Reexamination Report recommends several refinements to the Township's municipal master plan and development regulations. In the summary of changes that follows, this 2015 Reexamination Report recommends minor changes in order to fine-tune the Township's existing planning framework. The recommendations outlined in this Reexamination Report clarify this existing framework to meet the needs of residents, visitors, businesses and investors today and well into the future.

### Changes to the Master Plan

#### Incorporation of Existing Plans and Ordinances

The following plan is recommended for incorporation into the master plan:

- The Manitou Park Neighborhood Redevelopment Plan, prepared September 3, 2009 by CMX and adopted by the Township Council by ordinance on December 22, 2009.

The 2008 Land Use Plan's recommended land use changes included the creation of Wellhead Protection and Stream Corridor Protection Overlay Districts. The rationale, according to the plan, was that while these two overlay districts were not included in the land use element, the Township should prepare a master plan conservation element that would define these resources and explore the creation of such overlay districts, and supporting ordinances, that could be later added to the land use plan. Since then, the Township has adopted well head protection and riparian conservation ordinances, which are recommended for incorporation into the master plan:

- On September 6, 2012, the Township adopted an amendment to Chapter 32 of its municipal ordinances (Health Regulations) to include well head protection. This



ordinance regulates certain land uses in areas surrounding public community and nontransient noncommunity well to protect water quality.

Under subsection 32-6.5.C (Establishment of Well Head Protection Areas and Maps—Inclusion of Well Head Protection Area Zoning into Master Plan), the ordinance advises that because the municipal Master Plan provides the legal basis for zoning and land use regulation at the local level, the technical foundation for local well head protection should be included into the Master Plan. According to the ordinance, a technical report on the need for well head protection in Berkeley Township may be adopted as part of the Master Plan. This technical report should include:

- 1) *A statement setting forth the rationale and need to protect the public water supply through a program of well head protection for community wells and public nontransient noncommunity wells.*
- 2) *Reference to the method used to delineate the Well Head Protection Areas according to the “tiered” level of protection for public community wells based upon the time of travel of ground water, as developed by the New Jersey Geological Survey.*

The proposed Master Plan amendments, included with this document as part of the Appendix, include the Well Head Protection Maps that were originally prepared with the ordinance.

- Also on September 6, 2012, the Township amended the Township’s Land Development Ordinance (Chapter 35) to create a Riparian Buffer Conservation Zone Ordinance. This ordinance serves as an overlay to existing zoning districts, limiting the intensity of development within a specified distance (50-150 feet) of specified waterways.

Similar to the Well Head Protection ordinance, subsection 35-10.4.G (Establishment of Riparian Zones) describes that since the municipal Master Plan provides the legal basis for zoning and land use regulation at the local level, the technical foundation for riparian zones should be included into the Master Plan. According to the ordinance, a technical report on the need for riparian zones in Berkeley Township may be adopted as part of the Master Plan. This technical report should include:

- 1) *A statement setting forth the rationale and need to protect riparian zones.*
- 2) *Reference to the methods used to designate and delineate riparian zones.*

The proposed Master Plan amendments, included with this document as part of the Appendix, include the Streams and Riparian Zones Maps that were originally prepared with the ordinance. It should be noted, that the ordinance requires the Township’s Engineer to propose modifications to the map every second year after its adoption, to reflect any changes based on location, changes to surface water classifications or floodway delineations, or modifications to the riparian zone map required by decisions or appeals.

### Refine Master Plan Goals

Due to the myriad plans, reports, and zoning amendments since the adoption of the 1997 Master Plan in addition to the ordinances and other planning activity that followed Hurricane Sandy, Berkeley Township should consider the preparation of a new Master Plan that allows for the comprehensive incorporation of long-term resiliency, goals and objectives that target



rehabilitation and revitalization of underutilized properties, and the changing development patterns on the Jersey Shore. In the interim, the Township should compile, consolidate, and revise the goals and objectives of its Master Plan and Master Plan Elements to incorporate storm resiliency into future land use.

### Land Use Plan

The Township should incorporate findings from the Sustainability Element, Hazard Mitigation Plan, Floodplain Management Plan and other reports developed in response to Hurricane Sandy that encourage resilient development. For example, Berkeley Township should limit high-density residential development to the established Town Centers and Corridor Node to improve traffic circulation, emergency response, and the efficient delivery of services.

### Community Facilities Plan

Hurricane Sandy caused extensive damage to community facilities and other critical infrastructure in Berkeley Township. Half of the Berkeley Township Sewerage Authority's sanitary sewer pump stations sustained some level of damage from the storm, and all experienced a loss of power. Trees and power lines throughout the Township fell, in many cases damaging buildings and homes. The public works building experienced fire damage from a power surge, the administration building's roof, cupola, and fascia were damaged, the parks and recreation building sustained flood-related damage, and the police sustained a brown-out from the overuse of the generator.

The Township should prepare a Community Facilities Plan to show the location of existing and proposed facilities in relation to the surrounding areas to gauge the accessibility of the facilities for residents of all ages and abilities. By highlighting the locations of existing and proposed facilities, a Community Facilities Plan will not only measure their vulnerability to future storm events, but assess the locational relationship between the location of the facilities and the populations that they serve.

It is important that the Township promote the resiliency of its community facilities and critical infrastructure. This can be done through the application of green building techniques, storm resilient infrastructure, and protecting clear lines of communication. This includes physical flood control and related devices, elevation of facilities above the advisory base flood elevation, careful site selection for new facilities, or other means. In addition, resiliency can be promoted by providing new and upgraded emergency power generation facilities at important sites, such as municipal buildings, police station, schools, and pump stations, which will help the Township to function in times of crisis. Integrating land use and emergency management can ensure that lines of communication, critical access points and corridors used for emergency management, are protected. By promoting the resiliency of community facilities and critical infrastructure, the Township is not only protecting its investment, but may also set an important example for others to follow and thereby increase the overall sustainability and resiliency of the Township.





## Green Buildings and Environmental Sustainability Element

The Township should prepare a green buildings and environmental sustainability element, which, concurrent with Municipal Land Use Law, can provide for, encourage, and promote the efficient use of natural resources and the installation and usage of renewable energy systems, consider the impact of buildings on the local environment and economy; allow ecosystems to function naturally; conserve and reuse water; treat stormwater on site; and optimize climatic conditions through site orientation and design.

## Circulation Plan

Berkeley Township should revise the Master Plan to update the circulation element in order to incorporate changes related to storm resiliency, traffic control, and public access. The 2008 Circulation Element reiterated previous recommendations for a “Western Boulevard Extension” that would provide an alternative north-south route through the Township in order to reduce the pressure on Route 9. Since then, the project received funding for additional study, however the extension has yet to materialize. In light of the vulnerability of Route 9 to coastal flooding, the Township should reaffirm the need for this project to not only provide improved circulation, but also long-term storm resiliency and public safety. In addition to the Western Boulevard Extension, the Township should identify other critical cross streets and where gaps exist that restrict accessibility.

Revisions to the circulation element should also reflect recommendations from the projects developed from Post-Sandy Planning Assistance Grants program which reexamine zoning, capital improvement planning, hazard mitigation and floodplain management.

A revised circulation element should also include a sub-plan element for pedestrian circulation, which could then be used to inform a complete streets program that ensures safe and accessible options for transportation for all residents, regardless of age or ability.

## Capital Improvement Plan

The Township should prepare a Capital Improvement Plan that identifies needed capital improvements to improve local resiliency. This project is being prepared concurrent to this Master Plan Reexamination Report, and funding is provided through the Post Sandy Planning Assistant Grant Program (PSPAGP).

## Economic Plan

The Township should prepare an Economic Plan element to assess the changing needs of the community and diversify its economic base by attracting more ratables as Berkeley Township continues to transition from a seasonal to year-round community.

## Floodplain Management Plan Element

The Township is currently preparing a Floodplain Management Plan (FMP). This will identify and assess flood hazards within Berkeley Township, establish the goals and objectives for floodplain management, and present a series of actions designed to minimize flooding and mitigate the impacts from flooding in the future. The FMP will also evaluate the need and



potential options for wetland restoration and maintenance and/or other engineering control measures to mitigate potential storm surge in those areas of the Township that may be vulnerable. The FMP will include recommendations to the Township's current Floodplain Development Protection Ordinance. This project is being prepared concurrent to this Master Plan Reexamination Report, and funding is provided through the Post Sandy Planning Assistant Grant Program (PSPAGP).

### Stormwater Management Plan

The Township should consider amending its Stormwater Management Plan to address green infrastructure techniques that will promote resiliency, while keeping in mind hazard mitigation, community resiliency, and potential sea level rise.

### Housing Element and Fair Share Plan

Berkeley Township already filed a plan with the Council on Affordable Housing (COAH), but the plan has not been certified, therefore the Township is classified as having a "participating" status before COAH. A decision by the New Jersey Supreme Court on March 10, 2015 established a transitional process in which the Township will be able to file a declaratory action judgment immediately upon the March 10 decision becoming effective on June 8, 2015. The Township should undertake a review of the implications of the Supreme Court decision and make a determination of the appropriate course of action to address compliance with the affordable housing obligation.

Regardless of the transitional status of COAH rules, this Master Plan Reexamination Report recommends amending the Housing Plan Element to address the following:

- The Township encourages homeowners of single-family structures to elevate their homes to make them more resilient to future Sandy-type storms.
- It is the Township's policy that affordable housing should not be located within the flood hazard areas.
- Direct future multifamily residential development, away from areas that will exacerbate traffic congestion and safety concerns along Route 9, a critical emergency route, during storm events and encourage growth toward the Town Center and Corridor Node districts as part of an overall strategy of resilience.

## Development Regulations

### Zone Changes

The 2015 Master Plan Reexamination Report carries forward the following recommendations from the 2008 Master Plan Reexamination to improve the Township's zoning map and zoning code:

- Simplify and clarify the official zoning map to remove inconsistencies and to be more user-friendly.
- Reconcile zoning district regulations in the ordinance with the zoning map.
- Simplify outmoded zoning districts particularly those with multiple overlays.



These recommendations are still relevant as of this 2015 Reexamination Report. While this 2015 Reexamination Report does not recommend any major changes to the zoning ordinance, in the interest of facilitating an orderly, efficient, and fair development process, it is critical that certain amendments are made to clarify and reduce inconsistencies within the ordinance. Examples of specific changes are described below. To avoid repetition, the suggested changes are only listed in one category, however they may contain multiple technical concerns.

### *Existing Zoning Clarification*

The following zoning regulations should be addressed and clarified by the Township:

- *Lot coverage requirements in the Highway Business (HB) zone district.* The Highway Business (HB) zone district restricts impervious coverage to 30% in subsection 35-106.2.e, however the Schedule of Requirements (subsection 35-95) permits a maximum lot coverage, the area covered by buildings, in the HB district of 50%. This inconsistency should be resolved to avoid confusion by permitting a maximum impervious coverage of 50% and a maximum lot coverage of 30%.
- *Conditional uses.* The zoning ordinance describes 15 different uses that are conditionally permitted in subsection 35-127 (Conditional Uses). According to this subsection, these conditional uses are permitted in the zoning district where they are specifically mentioned. Two conditional uses, the Bulk Storage of Materials, and Class B Recycling Facilities, are not permitted as a conditional use in any district. Some of the uses in this subsection are permitted, such as the bulk storage of materials in the Light Industrial Zone as principal permitted uses, however, it is not clear if they must then meet the conditional standards. In addition, several principal permitted uses are permitted based on a series of conditions. It is not clear if, when the conditions are not entirely met, the use is non-conforming and then necessitates a use variance. In addition, certain districts, including the Highway Business (HB) and industrial zones specify certain "Prohibited Uses." In this example, it is not clear how a "Prohibited Use" should differ from a use that is not specifically permitted by the district.
- *Corridor Node "C".* Improvements to the underlying zoning and overlay districts in Corridor Node "C" (CN-C) will clarify how this tool can operate and permit implementation that follows the conceptual plans originally highlighted in the Density Transfer and Land Use Plan elements. Several technical corrections need to be made to the CN-C overlay district regulations, including the description of minimum required tract area in addition to adjusting the existing CN-C zoning district boundary to make it consistent with the TDR Plan Element. The intent of the CN-C District is to permit a variety of development options in addition to the uses permitted in the underlying RHB and R-400 Districts, including multi-family residential development and mixed use development as part of a Planning Unit Development (PUD). Presently, a minimum tract area of 10 acres is required in order to take advantage of the CN-C overlay options and all 10 acres must be in the RHB area of the overlay. This limits the number of properties that could take advantage of the overlay. In addition, no provisions in the ordinance exist that would effectively coordinate development of one tract with adjoining tracts to ensure that the road network and infrastructure systems would align and work in manner that would support the village-type development envisioned in the plan. The Township should



consider amending the overlay to create specific “sub-districts” to provide greater flexibility and allow individual property owners to develop their properties in a manner consistent with the plan. This would allow individual property owners to move forward with the development their properties in a coordinated way and ensure that the area is developed in a manner consistent with the Township’s vision of the area, rather than a series of piecemealed strip-mall-style developments.

### Map Reconciliation

- *Sub-districts that are described in the R-60 and R-MF residential zone districts.* Existing language in the ordinance for these districts refer to sub-districts that are not identified in the zoning map, making it nearly impossible to identify if certain site-specific requirements apply. In the case of the R-60 Zone, subsection 35-96.3.a.2 refers to a “R-60 Zone District No. 3.” This District #3 is not included on the map, nor is there any mention of potential Districts #1 or #2. The R-MF Zone describes sub-districts #1-7 that permit different residential densities, however these sub-districts are not included on the Zoning Map.
- *Residential Two Family Zone.* The R-2F Residential Two Family Zone (§35-96.5) is included in the zoning ordinance, however this district is not listed or located on the zoning map. The R-2F district appears to instead function as a conditional use for the R-100 district, since “All uses permitted in the R-100 Zone Districts in accordance with all standards and regulations applying to that zone” are permitted, as well as two-family dwelling units, on lots not less than 15,000 square feet or 125 feet of frontage “and meeting all other regulations of the Schedule of Requirements applying to the R-100 Zone Districts.” (§35-96.5a).

### Proposed Changes

- *Amend standards for high-density and multifamily residential development to discourage sprawl, reduce traffic and promote redevelopment of the Town Center.* As part of its efforts to redevelop the Town Center, the Township should amend its Highway Business (HB) zone district to prohibit future multifamily residential development outside of the designated Town Centers and Corridor Nodes. Concentrating development in areas served by existing infrastructure, especially in designated centers and nodes are located away from areas at risk of coastal flooding, will reduce the risk to capital infrastructure from extreme weather as part of an overall strategy of resilience. Concentrated residential development will also help generate demand for new businesses, resulting in non-residential ratables for the Township. In addition, residents have expressed concern over residential development and its impact on Route 9 traffic, in addition to road ingress/egress. The state, which has jurisdiction over Route 9, has been reluctant to add traffic lights when new development requires access to Route 9 unless it reaches a certain volume. Concentrating residential development in the designated Town Centers and Corridor Nodes will not only help limit the perception of suburban “sprawl,” it will also limit residential access points to Route 9 to only a few areas, thus encouraging NJDOT traffic improvements that will further reduce traffic congestion. In addition, the Township should consider revising the zoning



map to be consistent with the areas designated by the 2008 Land Use Plan Map for Highway Commercial.

- *Island Zoning Districts.* The 2008 Land Use and Circulation Element revised the Land Use Plan Map to reflect several changes. In addition to the Town Center districts, and Nodes A-C, the map was revised on the Barrier Island to “provide context sensitive residential and commercial standards for this unique island neighborhood.” While the plan recommends that the zoning ordinance is revised to reflect these land use districts, which would replace the existing districts with island-specific zones, additional study is recommended to ensure that any changes including approaches to improve storm resiliency, be designed in a manner that is context-sensitive to south Seaside Park’s community character.

### Flood Zones

Berkeley Township’s location along the Atlantic Ocean, Barnegat Bay, Toms River and many other smaller waterbodies make it susceptible to coastal flooding. Zoning regulations should be regularly evaluated by the Township, utilizing its newly-developed Geographic Information System (GIS) capabilities, to make sure that losses due to flooding are minimized through appropriate area and use requirements and proper flood hazard regulations. Presently, significant areas of the Township, east of Route 9 are not developed, providing a natural buffer from flooding and storm events. Long-term financial costs of future land use and capital improvements should be considered as part of the planning process, especially with how that decision might relate to storm resiliency. This should not be interpreted as a “retreat” from high-risk areas, but rather a decision making process that avoids a “one-size-fits-all” approach to development. For example, areas prone to frequent flooding may benefit from infrastructure that is better adapted to withstand and manage flooding, than in areas where this is less of a concern. Township officials should take advantage of the many free online tools available from Rutgers and other organizations that highlight areas vulnerable to flooding under different scenarios, such as tidal flooding, hurricanes by strength category, and potential sea level rise.

### Building Elevation

The Township’s Flood Damage Prevention Ordinance currently requires that new, substantially damaged or substantially improved buildings located in a special flood hazard area be elevated above the Advisory Base Flood Elevation (ABFE), plus 1 foot of freeboard, using the best available data. For all elevated buildings in a special flood hazard area, residential and nonresidential, the Township should also require and maintain elevation certificates as part of its GIS program.

### Municipal Facilities

Berkeley Township’s large geographic size (it’s the 28<sup>th</sup> largest of New Jersey’s 565 municipalities), and complex physical makeup (Eastern Bayshore, Pelican Island and South Seaside Park, and the lower-density Pinelands) can pose a challenge for people who lack the time or ability to reach township offices. In combination with providing more services through an internet portal, or automated services, such as the permit automation that is



currently being prepared through the PSPAGP, township officials should monitor where the need for satellite offices can extend the reach of these municipal services. While future construction of essential services and permanent public facilities, with the exception of park facilities, should be limited to zoning districts located outside of the .2% (500 year) flood area, the Township should explore options to ensure convenient access to municipal services.

### Complete Streets

The Township should complement the improvements made to the Route 9 Corridor through the adoption of a complete streets policy.

### Reduce Barriers to Green Infrastructure and Resiliency

Update zoning policies and bulk requirements to address existing development regulations that may unintentionally impede sustainable development and resilience to future storms. For example, this may include ensuring that ordinances do not effectively prohibit the use of green infrastructure or low impact design, or including design standards that make future development along the waterfront more resilient to future hazards.

The Township should consider increased flexibility for bulk standards in flood hazard areas, where necessary and while maintaining the existing character of the neighborhood, in order to encourage resilient rebuilding and construction.

### Other Recommendations/Capital Recommendations

#### Transportation

As proposed in the 2003 Reexamination Report and carried forward in the 2008 Reexamination Report, this 2015 Reexamination Report reaffirms the recommendations that an NJDOT Highway Access Management Plan for the entire Route 9 Corridor should be completed. In addition, the importance of the proposed Western Boulevard Extension is also reaffirmed, as well as other potential cross street connections that can provide enhanced accessibility throughout the Township.

#### Zoning and Construction Permit Process Automation and Updates

The Township is currently automating and updating its system for processing zoning and construction permits. This upgraded permit program, in which inspectors receive and manage permits on laptops and electronic tablets using state of the art technology, will significantly increase the Township's efficiency in this task and in recovering from future storm events. This project is being prepared concurrent to this Master Plan Reexamination Report, and funding is provided through the PSPAGP.

#### Update the Township's Hazard Mitigation Plan (HMP)

The Township is currently preparing a Hazard Mitigation Plan to identify and assess the various flooding hazards within the Township as well as the associated vulnerabilities to those hazards. The HMP will identify alternative mitigation actions that can be implemented to reduce Berkeley Township's risk resulting from hazard exposure. This project is being



prepared concurrent to this Master Plan Reexamination Report, and funding is provided through the PSPAGP.

### **Revise and update the Township's Emergency Operations Plan**

The Township is currently updating its Emergency Operations Plan, which will create a flood hazard-specific annex to accompany the existing Plan. This new annex will focus on any special planning needs generated by a hurricane or severe flooding scenario and will contain unique and regulatory response associated with extreme flooding. This project is being prepared concurrent to this Master Plan Reexamination Report, and funding is provided through the PSPAGP.

### **Develop a Geographic Information System (GIS) to Increase Resiliency**

The Township should develop a GIS database and inventory of municipally-owned infrastructure to support future planning efforts. The components of the GIS would support facilities and public works infrastructure, land information, and floodplain management-related data layers and applications. This project is being prepared concurrent to this Master Plan Reexamination Report, and funding is provided through the PSPAGP.

In addition, these aspects of the GIS program should be made available to the public through the Township website or by visiting the Township's Administrative Building where staff members can help explain the various maps and hazards.

### **Enhanced Participation in FEMA's Community Rating System (CRS)**

The Township should continue to increase its participation in FEMA's Community Rating System (CRS). The CRS is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum National Flood Insurance Program (NFIP) requirements. The NFIP administers the CRS which scores towns on their effectiveness in dealing with the mitigation of flood hazard events. As a result of earning CRS points, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS:

- Reduce flood damage to insurable property;
- Strengthen and support the insurance aspects of the NFIP; and
- Encourage a comprehensive approach to floodplain management.

As of October 1, 2014, Berkeley Township's participation in the CRS program has resulted in a 20% discount for flood insurance premiums in the Special Flood Hazard Area, and a 10% discount for properties outside the Special Flood Hazard Area.

### **Install a Township-wide Supervisory Control and Data Acquisition (SCADA)**

The Township should install a SCADA system. The SCADA system would communicate critical alarms to a centralized location or operational personnel within the Township. This would be in conjunction with the Township's owned and operated facilities (including at pump stations, Municipal Building, the Police Department, firehouses, etc.). Use of a SCADA system can provide the Township with accurate information on water and wastewater collection, pump control, pump station performance, as well as provide alarm notifications of



system failure, emergency levels, and any other events as they occur. This would help protect the environmental quality of the Township by preventing sewer spills into local waterways. The SCADA also would monitor fire, security, power failures, and generator operations for the Township.

### Debris Management Plan

The Township is currently preparing a municipal Debris Management Plan including such components as allocating debris removal sites, collection strategies, and debris reduction methods. This project is being prepared concurrent to this Master Plan Reexamination Report, and funding is provided through the Post Sandy Planning Assistant Grant Program (PSPAGP).

### Sustainable Jersey Certification

The Township supported participation in the Sustainable Jersey municipal certification program in 2009. While the Township supported participation, it has yet to receive certification. The Township should consider attaining this certification from Sustainable Jersey as way to undertake resiliency measures while gaining access to competitive grants.

### Community Vulnerability Analysis

The Township should undertake a Community Vulnerability Analysis to evaluate the number of structures that may be exposed to potential flood and storm surge risks. This may be done in conjunction with, or independent of, a beach-dune system susceptibility assessment to identify weaknesses in the dune system. Findings from this assessment could help to guide future preservation of key areas to provide a natural buffer from future storms and flood events.

### Transfer of Development Rights (TDR)

Berkeley's Transfer of Development Rights (TDR) Plan Element serves as the basis for the Township's program and ordinance in accordance with Article 18 of the Municipal Land Use Law, "State Transfer of Development Rights." The Berkeley Township turned to the TDR mechanism as a way of shifting development away from the remaining forested areas of the Pinewald section of town west of Route 9 to the underutilized properties along the Route 9 corridor.

The TDR program provides an incentive-based process for permanently preserving environmentally sensitive and open space lands that provide a public benefit in their natural state. These areas are referred to as sending zones. Development rights purchased from land in the sending zones can be used towards additional growth in a pre-determined receiving zone, while the land in the sending zone is then preserved. The Receiving Areas are delineated based on their ability to support additional growth and density due to the availability of infrastructure and the absence of significant environmental constraints. The Receiving Areas are also reflective of the Township's vision for guiding growth to well-planned and compact centers and nodes.





Through the TDR program along with other mechanisms, the Township intends to preserve more than 840 acres of undeveloped residentially zoned land in the five sending areas and 837 acres of industrially zoned land that currently lacks the necessary sewer, water, and roadway infrastructure needed to accommodate future growth.

Berkeley Township received Plan Endorsement from the State Planning Commission, adopted a Development Transfer Element, and has recently incorporated TDR into its ordinances. The next step in this process involves the completion of several administrative actions that will enable the use of this program. In addition, improvements to the underlying zoning and overlay districts in Corridor Node “C” will clarify how this tool can operate and permit implementation that follows the conceptual plans originally highlighted in the Density Transfer and Land Use Plan elements.



## Recommendations Concerning Redevelopment Plans

### Berkeley Town Center Redevelopment Plan

**Figure 6: The Beachwood Plaza site along Route 9, is one of the central focal points of Berkeley's Town Center Redevelopment Plan.**



The goal of the Town Center Redevelopment Plan is to promote the development of a compact, pedestrian-oriented Town Center with the potential for 24-hour activity, consisting of high-intensity retail and employment facilities, vibrant and dynamic mixed-use areas, open space and recreation facilities, and residential living environments that provide a broad range of housing types for an array of housing needs.

The Town Center Redevelopment plan also seeks to achieve the following objectives:

- *Promote a diverse mix of residential, business, commercial, office, institutional, educational, recreational, and cultural and entertainment activities for workers, visitors, and residents;*
- *Encourage pedestrian-oriented development at densities and intensities that will help promote transit usage, interconnected uses, and businesses;*
- *Promote the health and well-being of residents by encouraging physical activity, alternative transportation options, and greater social interaction;*
- *Create a center that represents a unique, attractive, and memorable destination for visitors and residents;*
- *Encourage lively, human-scaled activity areas and gathering places through the promotion of high-quality urban design;*
- *Ensure that all buildings are consistent with and enhanced by high-quality streetscape amenities; and*
- *Accommodate off-street parking in a convenient manner that does not interfere with the rhythm of the street network and building facades.*

**These objectives are still considered valid. The Township may want to consider providing development incentives for projects that incorporate storm resiliency or green infrastructure.**

### Manitou Park Neighborhood Redevelopment Plan

The goal of the Manitou Park Redevelopment Plan is to support a comprehensive program of revitalization of the Manitou Park neighborhood through the provision of sewer and water infrastructure, and the rehabilitation of existing residential uses, and new and infill residential development, and to establish new design standards that are consistent with the neighborhood character, and enhance the quality of neighborhood assets.

The rehabilitation of Manitou Park is to be guided by the following objectives:

- *Support a comprehensive neighborhood revitalization effort while maintaining the unique character of the neighborhood with the incorporation of high quality and coordinated design standards for building design and facades (ie height, orientation, rooflines, porches, window treatments.)*

- *Provide public infrastructure more efficiently and eliminate, or improve inadequate onsite septic and well systems.*
- *Preserve and renovate the historic and cultural assets of Manitou Park for the community's use and enjoyment.*
- *Upgrade the neighborhood's streetscape with the installation of street trees, curbs and sidewalks to promote safe walkability within the neighborhood, and ensure a comprehensive system of sidewalks that link community facilities.*
- *Undertake a program of rehabilitation for vacant, Township-owned properties.*
- *Support regional and community-based initiatives that provide housing, human resources, jobs and training to neighborhood residents.*

**These objectives are still considered valid. The Township should incorporate the Redevelopment Plan into the Land Use Plan. The Manitou Park neighborhood of Berkeley Township was sheltered from Hurricane Sandy's storm surge and projections show that it is more sheltered from the impacts of potential sea level rise and future storm events than other areas of Berkeley Township. This should give the Township reason to prioritize rehabilitation of this site. The Township may want to consider providing development incentives for projects that incorporate green infrastructure.**



**APPENDIX:**  
**Master Plan Amendments**

## Appendix A: Master Plan Amendment

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### Introduction

When Hurricane Sandy struck the coast of New Jersey on October 29, 2012, the storm's destructive winds, flooding and storm surge caused damage to Berkeley's critical infrastructure, community facilities, public and private property, as well as extensive beach and soil erosion. The lessons learned in the aftermath of the storm offers an opportunity for the Township to ensure its long-term viability and prosperity.

The purpose of this master plan amendment is to incorporate the recommendations and changes described in the 2015 Master Plan Reexamination Report into the Township's master plan and establish the basis for future actions through the definition of new goals and objectives. This amendment includes an updated comprehensive list of master plan goals and objectives and modifies the Land Use Element and Circulation Plan Element. The following amendments to the existing plan elements will help enhance the resiliency of Berkeley Township toward flooding and other weather-related events, while improving the everyday quality of life.

### Master Plan Goals and Objectives

The 2015 Reexamination Report reaffirmed the goals and objectives that were originally outlined as part of the 2020 Vision Statement and included in the 2008 Reexamination Report. These goals and objectives focus on redevelopment in the town centers that enhance circulation and housing opportunities while preserving environmentally sensitive resources.

The experience of Hurricane Sandy and the changes at the county, state, and federal levels, stress the importance for the Master Plan's goals and objectives to promote sustainability and resiliency. The Master Plan is therefore amended to include new resiliency objectives, which have been compiled with relevant goals and objectives from previous planning documents and updated to the extent to adequately reflect conditions as of 2015.

### General Development

- *Direct most new development to a well-planned, compact, mixed use Town Center and redevelop existing commercial centers into accessible, compact and well-defined nodes with linkages to the surrounding neighborhoods.*
- *Encourage and support policies and actions to reduce the introduction of harmful greenhouse gasses by reducing sprawl, and encouraging green buildings, promoting alternate means of transportation including walking, biking and public transit, and preserving open space and wetlands.*
- *Encourage traditional neighborhood elements such as sidewalks, alleys, front porches, public spaces, green spaces, street grids, street trees, and mixed uses that support pedestrian activity, human interaction, public safety, mass transit, and easy access to goods and services.*
- *Preserve the Township's natural resources to protect water quality, manage stormwater, reduce the potential of flood damage, protect endangered habitats, and provide open space.*

- *Promote aesthetically pleasing human scale development that recognizes the character of traditional New Jersey bay front towns.*
- *Provide a healthy balance of land uses that preserves the residential character of the neighborhoods; maintains a balanced stock of quality housing that accommodates diverse lifestyles and age groups; and provides convenient opportunities to acquire essential goods and services.*
- *Provide an alternate route for north-south through traffic that enhances rather than detracts from the community; and supports the development of a Town Center as opposed to a strip sprawl development pattern.*
- *Review and continually update, as needed, the various codes and development standards and maintain an aggressive code enforcement policy to ensure the highest quality of life within the Township.*
- *Review and continually update the permitted uses within each zone to ensure that only those uses compatible with the land capacity to support them are permitted.*
- *Provide for cluster design, to conserve open space and natural amenities in residential subdivisions and projects.*

### **Resiliency**

- *Plan for new development to minimize risk from natural hazards.*
- *Promote public awareness of hazard mitigation and resiliency issues.*
- *Focus public agencies on community vulnerabilities to hazards such as flooding.*
- *Encourage future capital projects to be located outside flood hazard areas.*
- *Encourage renovations and modifications that are resilient to flood- and storm-related impacts.*
- *Encourage municipal efforts and initiatives in FEMA's Community Rating System (CRS).*
- *Encourage regional solutions to flood- and storm-related impacts.*

### **Residential Development and Housing**

- *Ensure proper maintenance of the existing housing stock.*
- *Maintain a balanced stock of housing that accommodates diverse lifestyles and age groups.*
- *Strategically extend public water and sewer service to existing neighborhoods, infill development, identified commercial nodes, and the Town Center based on cost- effectiveness, the need to address health issues, and consistency with the Township's growth management policies.*
- *Strategically complete the residential street grids to ensure connectivity within and between neighborhoods.*
- *Maintain and enhance the prevailing single-family character of the community. Increase lot sizes where possible and limit multi-family development to selected locations and types;*
- *Maintain and upgrade the quality of seasonal housing converted to year-round occupancy through the administration and use of proper standards and codes;*

## Commercial Development

- *Encourage a mix of quality commercial use, retail, entertainment, dining, and upper story residences in the Town Center and corridor nodes to create vibrancy and to serve local and regional markets.*
- *Encourage commercial development and retrofitting that emphasizes quality architecture, shared access and parking, transit friendly facilities, pedestrian circulation, appropriate intensification of buildings, and extensive landscaping especially in parking areas; and avoids blank or windowless walls, oversized parking areas, light pollution, multiple and uncontrolled highway access points.*
- *Foster economic development in the Town Center and in commercial nodes along Route 9 to primarily service a local market and a limited regional market.*
- *Review economic development and redevelopment programs to encourage both new construction and conversion of existing non-commercial uses to viable commercial activities.*

## Public Facilities and Services

- *Concentrate new community facilities such as a post office, police substation, fire station and governmental offices in the new Town Center.*
- *Ensure efficient delivery of public services through interlocal agreements and regionalized services.*
- *Create a Township Debris Management Plan including such components as allocating debris removal sites, collection strategies, and describes reduction methods.*
- *Install a town-wide Supervisory Control and Data Acquisition (SCADA) system throughout the Township in conjunction with its owned and operated facilities to communicate critical alarms to a centralized location or operational personnel.*
- *Automate, update and expedite the Township's system for processing zoning and construction permits;*
- *Prepare a Capital Improvement Plan that identifies needed capital investments in public facilities to improve local resiliency.*
- *Develop GIS database and user interface to catalog and inventory all infrastructure owned by the Township, including roadways, its stormwater collection system, its sanitary sewer collection system, and residential and commercial property information.*
- *Update Township's Emergency Operating Plan.*
- *Elevate key municipal facilities above the Advisory Base Flood Elevation, utilize temporary structures for areas in high-risk flood areas.*
- *Encourage Green Infrastructure projects.*
- *Focus public agencies on community vulnerabilities to hazards such as flooding.*
- *Compile low elevation aerials to produce high-quality mapping with six-inch contour levels within identified special flood hazard areas.*
- *Prepare a Green Buildings and Environmental Sustainability Element.*

- *Update Stormwater Management Plan to include green infrastructure management techniques.*
- *Update Floodplain Management Plan.*

### Open Space

- *Continue aggressive open space preservation efforts with funding shared among Berkeley Township, Ocean County, the State and federal governments and non-profit groups.*
- *Create a comprehensive open space system that provides passive and active recreation opportunities, preserves sensitive lands, creates connected green and blue ways, provides environmental education opportunities, and establishes greenbelts around existing and planned development.*
- *Create a comprehensive recreation system that provides indoor and outdoor, active and passive recreation opportunities for all age groups and ability levels; and that meets or exceeds state and national performance and safety standards.*
- *Create a multi-use trail system that ties into the Barnegat Branch Rail Trail to link neighborhoods, community facilities, parks and open space and Barnegat Bay.*
- *Stabilize bay shoreline by installing riprap or developing living shorelines.*

### Transportation

- *Develop an access management plan for Route 9.*
- *Determine the feasibility of additional local bus or jitney routes or of modifying existing routes to better serve demands.*
- *Improve the level of service along the Route 9 corridor through the implementation of creative engineering, land use and design techniques including appropriate recommendations from the Route 9 Corridor Master Plan. Utilize traffic calming measures in areas of high pedestrian activity.*
- *Provide connections between residential areas, commercial nodes, community facilities and the Town Center through an attractive, free flowing circulation system.*
- *Provide opportunities for residents and visitors to access multiple modes of transportation including public transportation, bikeways and pedestrian ways.*
- *Maintain and enhance the traffic carrying capacity of principal thoroughfares, such as Route 9, by making traffic engineering improvements and regulating access and egress.*
- *Develop a system of secondary streets in built-up areas through cross connections of existing streets, to improve access to individual areas and reduce use of Route 9 for internal trips.*



## Land Use Plan Element

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The 2015 Master Plan Reexamination Report recommends amendments to the Land Use Plan Element that will facilitate increased sustainability and promote resiliency through the use of green building and infrastructure. The section of the 2015 Master Plan Reexamination Report entitled “Changes to Development Regulations” outlines changes to development regulations to clarify existing zoning designations in selected areas and promote sustainability and resiliency. The full content of “Changes to Development Regulations” is hereby adopted as part of the Land Use Plan Element. The 2015 Master Plan Reexamination Report also recommends amending the Land Use Element to include current existing land use mapping. Apart from the changes discussed in this Land Use Plan Element, there are no significant land use changes proposed for incorporation by the Township.

### Current Land Use Mapping

The Land Use Plan Element is updated to incorporate the following mapping presented in Appendix B of this document:

- Current land use mapping
- Critical environmental areas
- Existing Zoning and Flood Hazard Areas Overlay
- Community Facilities and Flood Hazard Areas
- Riparian Buffer Overlay
- Well Head Protection Overlay
- Land Use Plan

### Building Resiliency through Development Regulations

Given the experience of Hurricane Sandy and the potential for future storms, there is a compelling need to build resiliently in Berkeley Township. The Land Use Plan Element, therefore, recommends that the Township’s development regulations be designed to incorporate resiliency throughout the Township. This should be done through the promotion of green building and infrastructure techniques. This section of the Land Use Plan Element overviews green building and infrastructure techniques, and is meant to inform the future development of municipal development regulations.

### Assessing Local Vulnerability

Hurricane Sandy exposed vulnerabilities of Berkeley Township and other New Jersey coastal municipalities to withstand the impacts of extreme weather events. Ocean County received approval from FEMA for its Multi-Jurisdictional All-Hazard Mitigation Plan in May 2014. This plan assessed the likelihood of different natural and anthropogenic threats across Ocean County as well as within the individual municipalities. The Plan ranked the County’s risk of encountering these potential hazards, based on the probability, impact, spatial extent, warning time and duration. This analysis found: the highest risk hazards in Ocean County included flooding, hurricanes/tropical storms/nor’easters, winter storms and wildfire; moderate risk hazards included extreme temperature, climate change, coastal erosion, environmental hazards, drought,

transportation accidents, urban fires/explosions, and nuclear incidents; and low risk hazards from tornados/wind storms and earthquakes. Of these hazard events, the Plan compared the risk to each municipality to the average across Ocean County. Berkeley Township was found to have a higher risk from floods, hurricanes/tropical storms/nor'easters, wildfire, climate change, and coastal erosion. Berkeley Township's risk from winter storms, extreme temperatures, drought, tornados/wind storms, and earthquakes was found to be comparatively equal to the rest of Ocean County. The effect and damages of these events can expose local vulnerability to critical community facilities, infrastructure and property. This means that a flood can become more than an inconvenience when it inundates a critical access road, preventing evacuation and limiting emergency response.

Berkeley Township's varied geographical makeup (rural, low density Pinelands region; suburbanized communities located near Toms River, Barnegat Bay and Cedar Creek; and the communities situated on Pelican Island and the Barrier Island demonstrate the necessity of a comprehensive and proactive approach to foster resiliency, by incorporating zoning and land use with hazard mitigation.

### **Vulnerability Assessment Matrix**

To inform this master plan amendment, a systematic and comprehensive review of the Township's vulnerability to future storms and other potential natural hazards has been conducted. The results of this review are summarized in the following matrix.

**Table 2: Vulnerability Assessment Matrix**

Threat	Vulnerability
Flooding and Storm Surge	Sewer pumps—flood inundation and/or power outages can disable sewer pumps, causing sewage to empty into Barnegat Bay.
	Structures and property—flooding and wave action can cause serious damage to housing and businesses in areas located in designated flood areas. According to the Ocean County Hazard Mitigation Plan, over 21% of parcels in Berkeley Township are vulnerable to the 1% (100 year) flood, accounting for nearly \$800 million in taxable improvement value.
	Roadways—flooding can block the passage of traffic, impeding evacuation during serious weather and impairing emergency response. In addition, flooding can damage or undermine roadways, resulting costly repairs, traffic diversions, and loss of economic productivity.
	Sewer infiltration and inflow—flooding can stress sanitary sewer capacity when it enters through cracks and defects in the sewer lines. Inflow of water from basement sump pumps that connect to the sewer system can also overwhelm the system.
	Critical facilities—locating critical facilities in flood-prone areas can hinder emergency and post-disaster response. According to the Ocean County Hazard Mitigation Plan, Berkeley Township presently has two critical facilities located in the Special Flood Hazard Area.
	Flooding and storm surge can hasten coastal erosion, damaging natural and engineered flood protection such as bulkheads and dunes, washing away buildings and above-ground infrastructure, while undermining below-ground infrastructure.
	Infiltration of salt water into the ground can hasten the corrosion of water and wastewater lines, eventually reducing capacity and level of service for regular and emergency use. Eventually corrosion will require the need for costly repairs and/or replacement.
Wind	Wind damage can knock down trees and powerlines, interrupting utility service, damaging property, and blocking roadways.
Snow/Ice	Winter weather conditions can impair roads, impeding emergency response as well as safe access to community facilities. Zoning requirements that require longer setbacks for buildings and residences require longer driveways that need to be cleared by property owners for safe ingress/egress.
Sea Level Rise/Land Subsidence	The combination of rising sea levels and the geomorphological subsidence of land is projected to place an ever increasing number of properties at risk of flooding or permanent inundation. According to the Ocean County Hazard Mitigation Plan, 6% of land area in Berkeley Township is at risk of permanent inundation under a 1 foot rise in sea level, and 11% of land area would be inundated as a result in a 3 foot rise in sea level.
Wildfire	Pinelands-area towns such as Berkeley Township are at risk of wildfire during dry conditions, which can lead to property damage.

### Promoting Recovery and Building Resiliency

As demonstrated in the abovementioned vulnerability assessment, a compelling need exists to not only promote the continued recovery from Hurricane Sandy but also proactively address vulnerabilities in order to improve the ability of Berkeley Township to withstand future storms and other potential natural hazards. Berkeley Township will not be able to rely on a single solution to weather the next Sandy, nor will a “one size fits all” solution be context-sensitive for Berkeley’s diverse geography. Rather, Berkeley Township will have to employ a comprehensive approach that examines how it approaches everything from roads and parks to design guidelines. The options are limitless. Key examples include the implementation of green building and infrastructure techniques, land use changes, and transportation improvements. The examples that follow demonstrate ways to promote recovery from Hurricane Sandy and build resiliency to future storms and other potential hazards.

## Green Building and Infrastructure Techniques

Green building and infrastructure can be used to promote resiliency in Berkeley Township. Green infrastructure manages stormwater differently than an engineered network of pipes and treatment systems, sometimes referred to as “grey infrastructure,” and can include vegetated green roofs, planted strips alongside streets, street trees, and rain gardens, but also constructed systems that mimic or employ natural process to capture stormwater where it falls, like rain barrels, cisterns and porous pavement. These approaches can reduce the amount, or at least slow down the rate of stormwater, improving the quality of the water that enters local waterways, and reducing the amount of pooling in roads, yards, and basements. Under the New Jersey Stormwater Management Rules (NJAC 7:8), new development must include controls that reduce peak flows, maintain infiltration and groundwater recharge, while also reducing pollution discharged to local waterways. Since municipalities, and not New Jersey DEP, are responsible for approval of development stormwater management plans, Berkeley Township has the authority to ensure that new developments not only meet these stormwater rules but also benefit the surrounding community. In addition, the Township has the opportunity to employ these practices as part of redevelopment in order to promote resiliency and high-quality development.

The use of green infrastructure in stormwater mitigation can promote resiliency by reducing the risk and impacts of flooding and helping the township to quickly recover from storms. Green infrastructure also provides numerous co-benefits, which includes: reducing long-term maintenance and operation costs of stormwater infrastructure; reducing demands on aquifers and water treatment through the reuse of greywater and rainwater; protection of key areas used for groundwater recharge, reducing costs of water treatment through the protection of aquifers, and, capturing runoff pollution and preventing their entry into sensitive waterways.

The following subsections provide examples of green building and infrastructure techniques that may be used in Berkeley Township.

### *Downspout Disconnection*

Downspout disconnection refers to the rerouting of rooftop drainage pipes to specialized containment devices (e.g., rain barrels, cisterns) and permeable areas, instead of traditional stormwater drainage systems or connections to sanitary sewer systems (e.g. sump pumps that directly connect to a sewer line, or empty into a basement wash sink). This allows stormwater runoff from building roofs to infiltrate soil or saved for later use (e.g., watering lawns and gardens), rather than contribute to local flooding or overwhelm local stormwater systems when capacity is most needed.

Berkeley Township has already taken some measures to conserve water: including a ban on stormwater connections to the sewer line; a water conservation program that limits lawn watering to certain times, requires the use of automatic shut-off nozzle for hand held watering, and requires the use of automatic rain sensor devices; as well as design standards in the Town Center 2 and Corridor Node districts that permit the creation of rain gardens that can be used toward the open space requirement.

### *Rain Gardens and Bioswales*

Rain gardens are shallow, vegetated basins that absorb stormwater runoff from impervious surfaces (e.g., rooftops, sidewalks, and streets). Runoff is channeled into rain gardens, and is then used by plants, infiltrated into the ground, and evaporated. They may be installed in a variety of locations, and can be an attractive element of site design. Indeed, they may be installed in any properly graded unpaved space, and in parking lots and paved areas through the construction of specialized planter boxes that collect and absorb runoff.

Similar to a rain garden, bioswales are open, linear channels with vegetation, mulching, or xeriscaping that slow stormwater runoff and attenuate flooding potential while conveying stormwater runoff away from critical infrastructure. While they convey stormwater runoff away from critical infrastructure, their permeable surface permits the natural infiltration of stormwater. They are often used as an alternative to, or enhancement of, traditional stormwater drainage systems.

### *Permeable Pavements*

Permeable pavements help reduce stormwater runoff, which helps to improve the quality of terrestrial waters and mitigate flooding. With traditional (i.e., impervious) pavement, stormwater runs into drains and inlets, which places a burden on such infrastructure, and may result in the discharge of pollutants (e.g., sediment, oil residue, etc.) into terrestrial waters. Permeable pavements, however, infiltrate, treat, or store rainwater where it falls. Key examples of permeable pavements include pervious concrete, porous asphalt, and permeable interlocking pavers. Strategic use and appropriate siting of permeable pavement is critical to the long-term viability of this stormwater management tool to prevent compaction, clogs from debris or damage from winter road treatment.

### *Green Roofs*

Green roofs are roofs that are covered with substrate and vegetation that enable the infiltration of rainwater. This not only minimizes stormwater runoff, but leads to reduced building operating costs and energy consumption by providing improved insulation of the roof surface, and absorbing less heat on the roof surface (i.e., increasing the roof surface albedo over traditional roof surfaces).

### *Tree Cover*

Increased tree cover in developed areas can reduce and slow stormwater by intercepting precipitation in their leaves and branches. In addition, their root systems help to aerate soil, which facilitates natural infiltration of stormwater and reduces runoff. Trees also purify the air, and can help to cool developed areas by providing shade, and through evaporative cooling and increased latent heat flux (i.e., the dissipation of sensible heat).

### *Living Shorelines*

Living shorelines are an approach to shoreline stabilization that uses wetland plants, submerged aquatic plants, oyster reefs, coir fiber logs, sand fill, and stone to provide shoreline protection and maintain important habitat areas. Living shorelines employ the natural features found in waterfront areas, such as dunes and marshes to buffer inland areas from coastal flooding and

storm surge. They offer numerous benefits over hardened structures (e.g., bulkheads and concrete walls), including protection of the riparian and intertidal environments, improvement of water quality via filtration of upland runoff; and creation of habitat for aquatic and terrestrial species.

Large portions of mainland Berkeley Township's bayfront have been preserved and a large stretch of the Berkeley Township's barrier island area has also been left natural as part of Island Beach State Park, both of which offer some degree of storm protection. The presence of this living shoreline reduces the need for expensive, engineered protection measures, such as a seawall. Berkeley Township also benefits from its dual mainland-barrier island presence, meaning that public facilities and essential services can be shielded from the direct impact of a storm event while ensuring the continuity of services after such an event.

### **Environmental Conservation and Stewardship**

Resilient design of the built environment and the use of green building and green infrastructure offer only part of the equation. Conservation and protection of natural lands can provide a number of benefits that extend beyond scenic open space to include natural habitat, recreation space, stormwater mitigation and floodplain management. Natural lands can absorb and buffer the impact of coastal flooding, protecting areas further inland. As of 2012, Berkeley Township is home to 11,000 acres of open space, parks and recreation areas. These natural areas can serve to filter pollutants from entering surface and groundwater, reducing the costs of water treatment. Planted areas can stabilize steep slopes and reduce erosion, as well as regulate the temperature of the water entering waterways. According to the Township's 2012 Environmental Resource Inventory, 73 percent of the Township's total land area was comprised of environmentally sensitive features. The report also found that nearly one third of Berkeley Township was forested, while another 40 percent of the Township was covered by water or wetlands. As a result, any approach towards long-term resiliency should explore the return on investment that natural land protection can offer in contrast to engineered solutions that may not provide the same variety of secondary benefits.

### **Open Space Preservation**

There is renewed emphasis on this goal in how the Township targets lands for preservation as a way to provide a buffer to areas at risk of flooding, direct development towards areas with adequate ingress/egress, and serve as critical green infrastructure capable of absorbing excessive stormwater. The 2008 Land Use & Circulation Elements include a goal to "Preserve the Township's natural resources to protect water quality, manage stormwater, reduce the potential of flood damage, protect endangered habitats, and provide open space." Preservation of open space areas within and adjacent to developed areas can help mitigate the water quality and flooding impacts of stormwater. Indeed, natural open space areas promote increased groundwater recharge, lower stormwater runoff, and reduced levels of nutrients and sediment in waterways. They also help cool developed areas through evaporative cooling and increased latent heat flux.

Open space and public lands in Berkeley Township are held by federal, state, county, municipal and non-profit entities. Berkeley Township's 2008 Land Use and Circulation Element

recommended the continued preservation and stewardship of natural lands. One measure the Township has been developing has been its Transfer of Development Rights (TDR) program, which it adopted in 2013. Once the administrative procedures are completed, Berkeley Township's TDR Program will create the potential to preserve 840 acres of natural lands, while concentrating future development in the town centers and corridor nodes. This program will help preserve environmentally-sensitive lands in Berkeley's interior, however additional preservation efforts will be necessary to target sites that are prone to, or are at risk of future flooding, as well as sites that offer the ability to buffer neighboring areas. By employing land preservation as a flood mitigation tool, Berkeley Township can reduce damages to residents and businesses, as well as reduce the costs associated with repairing infrastructure located in high-risk, flood-prone areas.

### **Conservation-Based Zoning Districts**

The 2008 Land Use and Circulation Element recommend the development of a master plan conservation element to explore the creation of Wellhead Protection and Stream Corridor Protection Overlay Districts, define these resources, and develop supporting ordinances. Since the adoption of the 2008 Reexamination Report and the 2008 Land Use and Circulation Element, Berkeley Township adopted a Well Head Protection ordinance and a Riparian Buffer Conservation Zone Ordinance. The Well Head Protection ordinance was adopted to protect ground water resources and ensure a supply of safe drinking water. This ordinance restricts or establishes certain conditions on development in designated well head protection areas throughout the municipality.

The Riparian Buffer Conservation Zone Ordinance was also adopted by Berkeley Township as a way to protect and maintain vegetation along the surface water bodies within the Township's jurisdiction in September 2012, and requires a reexamination by the Township Engineer every two years. Protection of riparian buffers will help to promote living shorelines and other natural defenses against flooding and storm events. While these ordinances have been adopted, a new Conservation Element may help to answer questions on enforcement, monitoring, maintenance, adjustments to district lines as a result of ecological succession or change. In addition, the requirement that the Township Engineer reviews the map for any proposed modifications to Riparian Buffer Conservation zone presents a timely opportunity, given the geomorphological changes to Berkeley Township caused by Hurricane Sandy.

### **Land Use Changes**

As stated earlier in the report, Hurricane Sandy exposed Berkeley Township's vulnerability to flooding and severe weather. As a result, the major focus of this 2015 Reexamination Report is to identify strategies that are designed to mitigate, reduce or prevent impacts to the community from natural disasters, economic downturns, and demographic shifts in order to ensure its long term prosperity. Land use adjustments to the appropriate master plan elements and development regulations, such as use, density and bulk requirements, strategic open space preservation, protection of critical natural infrastructure, as well as the revision or removal of outdated ordinances that serve as impediments to sustainable development and community resiliency can help Berkeley Township reduce its vulnerability to these external events.

The subsections that follow provide an overview of the changes necessary to incorporate elements of resilient design.

### **Direct High Density Development Towards Designated Centers and Nodes**

The Planning Board is concerned about the potential for additional intensification of commercial corridor and the resultant potential increase in the number of homes which would be subject to the impact of future storm events. The Township should consider amending its Highway Business (HB) zone district to prohibit future multifamily residential development outside of the designated Town Centers and Corridor Nodes. Concentrating development in areas served by existing infrastructure, especially in designated centers and nodes are located away from areas at risk of coastal flooding, will reduce the risk to capital infrastructure from extreme weather as part of the Township's overall strategy of resilience. Concentrated residential development will also help generate demand for new businesses. Concentrating residential development in the designated Town Centers and Corridor Nodes will help limit the perception of suburban "sprawl" and residential access points to Route 9 to only a few areas, thus encouraging NJDOT traffic improvements to reduce traffic congestion.

### **Bulk Requirements**

Bulk requirements in the zoning ordinance regulate such aspects of development as lot size, building setbacks, street frontage, lot coverage and building height. As property owners elevate their homes to come into compliance with National Flood Insurance Program (NFIP) standards, they may come into conflict with local ordinances that regulate height. The Township should consider revising height requirements in waterfront districts to be measured from the base of the first floor instead of at-grade. In addition, structure elevation may require the installation of extra stairs and other elements, which could cause the structure to come into conflict with existing setbacks, coverage requirements and other standards. Increased flexibility for bulk standards in flood hazard areas, while maintaining the existing character of the neighborhood, may be an option. Elevated dwellings will also offer space underneath the house that is limited in use, but can be used in place of a garage, meaning that lot frontage requirements and side yard setbacks can be reduced where appropriate.

### **Municipal and Essential Services**

Present zoning requirements permit the development of essential services and municipal facilities in several zoning districts that were inundated during Hurricane Sandy. While many existing facilities sustained damage from the storm, they were spared more severe damage due to their location towards Berkeley's interior. Adjusting zoning ordinances to prohibit essential services and permanent municipal facilities, with the exception of parks, in areas of high risk should help to reduce the risk of repetitive loss and ensure continuity of services following a severe storm.

### **Capital Projects**

Berkeley Township last adopted a Utility Services Element and Capital Improvement Plan immediately following Hurricane Sandy. Despite the fact that this document was not completed in response to Sandy, the goals and objectives outlined in the plan for future capital spending



target the newly-designated Receiving Areas in Berkeley's TDR program. Shifting capital improvements toward these designated receiving centers inland and away from areas at greater risk of flooding will help ensure the longevity of municipal investments by limiting the potential for costly repairs and maintenance as a result of proximity to flooding and storm surge. In areas where it is necessary to finance capital improvements in areas of the Township that are at risk of flooding and susceptible to storm damage, consideration should be given to innovative and/or temporary improvements that improve resiliency and reduce the risk of repetitive loss.

### **Aesthetic Reconsideration**

Incorporating sustainable design into new development sometimes requires a reexamination of existing regulations, which may inadvertently stifle innovative ways to approach community resiliency. One example can be found in the very first goal of the 1997 Master Plan for Berkeley Township, which calls for "Cohesive neighborhoods free from visual clutter in front yards and streetscapes," and is translated into the zoning ordinance to include "open and unobstructed" front yards that consist of turf or landscape plant materials. Strict interpretation of these ordinances may limit the development of rain gardens and other forms of low impact development (LID) that can allow property owners to manage stormwater from entering neighboring roads or properties.

Other design guidelines, such as those that discourage flat roofs in favor of pitched roofs would limit the ability of property owners to manage stormwater with green roofs, or how driveways are required to be paved, creating additional impervious surfaces that add to the amount of floodwater that must be managed by the municipality. The Township should revise zoning ordinances, where appropriate, to remove barriers to green infrastructure and low impact development, and limit the instances where sustainable and resilient redesign would require additional bureaucratic justification.

### **Regional Consideration**

As coastal communities collectively rebuild and prepare for the next natural disaster, regional collaboration in land use planning may assist municipalities to develop in ways that reduce sprawl patterns that duplicate services across municipal lines yet limit accessibility.

Berkeley Township's unique geography also lends itself to regional planning and shared services. This includes the enclave community of Ocean Gate Borough, and the semi-enclave municipalities of South Toms River, Beachwood and Pine Beach boroughs, but also the joint jurisdiction of Pelican Island between Berkeley Township and Toms River, as well as Berkeley's South Seaside Park community on the Barrier Island and its connection to Seaside Park Borough. Shared services can offer efficiencies and remove duplication, while regional planning may mutually serve the interests of municipalities where ties include infrastructure, land use, and commerce.

### **Water and Wastewater Utilities**

An ongoing objective in Berkeley since its 1997 Master Plan has been the extension of utilities into unserved areas. In the reexamination reports that have followed, the goal has been refined to target the *strategic* extension of utility lines. In light of the damage caused by Hurricane Sandy to

sewage pumps in Berkeley Township or the distribution systems in neighboring municipalities, the decision of where to extend water and wastewater service should consider the impacts from future storm and flood events.

### **Residential Development**

Data from the Otteau Valuation Group, Inc. has found that New Jersey has an excess available supply of age-restricted homes (11 years of existing available supply), retail (16.8 years) and office (29.4), while only a 6 month supply of housing and less than a 3 month supply of rental housing. Encourage utilization of Berkeley's new TDR program and continue to refine ordinances to permit compact, pedestrian friendly development that can promote a lifestyle where car ownership is optional. Berkeley should consider adopting an optional noncontiguous cluster ordinance for areas outside of the TDR sending and receiving zones that target the preservation of areas that are at risk of flood inundation or are not served by existing utilities, while clustering development closer to the TDR receiving districts.

### **Bayfront Development**

The layout of zoning districts in the area of Berkeley Township located east of Route 9 is a patchwork of uses and densities that vary on an almost block-by-block basis. Given the challenges that property owners faced after Sandy, and will likely to face in the future, the Township may consider revisions to the Bayfront zoning districts that increase development flexibility while reducing the myriad of different development regulations in the area. The Township should adjust density, bulk, use, and setback requirements to complement the standards set by local floodplain regulations and the Township's existing Riparian Zoning District to enhance the eligibility for Community Rating System (CRS) points. Essential services and/or public facilities should be limited in these districts to passive recreation and uses where access to water is critical, such as emergency boat launch areas. The Township should consider increased flexibility to height and setback requirements in areas where flood regulations require the elevation of structures. Zoning flexibility could include the concept of "setback averaging," whereby a larger setback can be placed in areas that are at risk of flooding, while encouraging development in areas of reduced risk.

### **Stormwater Management**

The 2008 Land Use & Circulation Elements emphasizes "All future development in Berkeley Township must utilize the best available technology to minimize off-site stormwater runoff, increase on-site infiltration, simulate natural drainage systems and minimize off-site discharge of pollutants to ground-or surface water and encourage natural filtration functions." As Berkeley Township pursues a future that incorporates sustainable development, it will be necessary to reexamine land use and development ordinances that limit the ability of developers to meet these stormwater goals. Consider the use of variances or permitting certain development as a conditional use if it incorporates additional measures of low impact development or green infrastructure.

### **Demographic Shift**

Demands for goods and services in a seasonal community where the calendar lasts from Memorial Day to Labor Day differs from the needs of a community where people “live, work and play” the entire calendar year. In addition, for Berkeley Township to provide an environment that is safe and accessible to an aging population will require flexible land use regulations that enable residents to safely access their everyday needs. Land use requirements will also need to factor in the demands from the health care and service industries, as well as their employees in terms of businesses, transportation and housing. The goals and objectives of Berkeley Township may promote a mix of permitted land uses, however the extent to which they meet the needs of the community will play a role in the development and circulation patterns in and around Berkeley Township.

## Circulation Plan Element

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As has been previously mentioned in the 2015 Master Plan Reexamination Report, the Circulation Plan Element should be amended to include recommendations for the development of emergency evacuation routes and promote the development of bicycle and pedestrian connections. This is achieved in the following subsections.

A well-designed transportation network should weave a community together and give people options where secondary roads, sidewalks, and mass transit offer an alternative to high-speed automobile use. A resilient transportation and circulation system in Berkeley Township should provide ease of access to residents, visitors and businesses by filling in gaps in the existing street network to enhance accessibility. This means that residents can opt not to drive, yet still accomplish most, or all, of their everyday tasks. It also means that people can remain safe in the event of a storm, flood, or other disaster, by ensuring that if one road is blocked, another road exists, reducing the chances that residents are left stranded and emergency response is not hindered.

### Emergency Evacuation Routes

Berkeley Township's waterfront location and the potential for additional hurricanes and storms in the future make it necessary to plan for emergency evacuation routes to move people and equipment in times of emergency, and provide safe, efficient routes to emergency shelters and similar facilities within the region. This is particularly important for flood-prone areas of the Township.

Key aspects of emergency evacuation route planning include identification of potential routes, completing necessary modernization and upgrading, ensuring that routes are properly maintained and marked through signage, and informing the public about the presence of such routes. To elaborate, it is noted that potential routes should provide regional connections. Modernizing and upgrading roadways to be used as emergency evacuation routes will improve mobility and facilitate the evacuation of the Township in times of crisis. This is also an important opportunity for the Township to reiterate the necessity of the proposed Western Boulevard extension to provide an additional north-south route.

In addition to the above, it is noted that the planning of emergency evacuation routes should be coordinated with the New Jersey Department of Transportation, Ocean County, and neighboring municipalities. This is important not only because evacuation routes would provide connections to the broader region, but also because roadways used as potential evacuation routes may fall under state, county, or municipal jurisdictions.

Furthermore, this Circulation Plan Element is updated to include public facilities and critical infrastructure mapping. Note that this mapping shows the relation of these features to mapped flood hazard areas.

### Bicycle and Pedestrian Linkages

A "complete street" is defined by the NJDOT as a "means to provide safe access for all users by designing and operating a comprehensive, integrated, connected multi-modal network of

transportation options.” The intent of the policy is to provide streets to meet the needs of all types of users and all modes of circulation- walking, bikes, cars, trucks, and buses. Whether or not the Township enacts an official Complete Streets policy, measures that expand upon the improvements made to the Route 9 corridor to increase accessibility will help to accommodate Township residents, regardless of ability.

Bicycle and pedestrian linkages are encouraged and should be provided to the maximum extent possible in all areas of the Township, and particularly between parks, recreation, and open space areas, and key destinations within the Town Center. Providing such connections will greatly improve the quality of life for Township residents.

To maximize the provision of bicycle and pedestrian linkages, this Circulation Plan Element does not specify the exact locations where they should be provided, but, rather, establishes a vision, discusses key principles of the design and maintenance of bicycle and pedestrian facilities, and outlines important goals and objectives for their provision.

### **Vision for Bicycle and Pedestrian Linkages**

The Circulation Plan Element’s vision is to develop and expand the Township’s network of bicycle and pedestrian linkages and secure the recreation and transportation benefits of bicycling and walking for Township residents. The Circulation Plan Element envisions a network of bicycle and pedestrian linkages that connects the Township’s residential developments with: open space and recreation areas; schools; shopping and employment centers; and, other key destinations in Berkeley Township and neighboring municipalities.

The Circulation Plan Element also envisions that linkages will be provided in the form of: sidewalks, on-road bicycle lanes; lanes shared between bicycles and vehicles, where appropriate; greenways; and protected multipurpose trails. In all variations, bicyclists and pedestrians will be able to travel in a safe and efficient manner throughout the network, which will boost bicycling and walking for recreation, and increase their use as a means of transport.

### **Facility Design and Maintenance**

When planning bicycle and pedestrian linkages, it is important to pay attention to the needs and expectations of users; the facility’s visual appeal and design; and its upkeep. The following section provides an overview of basic concepts to guide the planning and development of bicycle and pedestrian facilities within Berkeley Township.

#### ***High Quality Experience***

As a starting point, it is important to consider the elements that lead to a high quality experience. Examples of such elements include: visual appeal; pleasantness and convenience of location; presence of interconnections, residential areas, and community facilities; sufficient length; accessibility for users with limited mobility; and, the availability of special features, such as educational opportunities, benches, shelters, and similar amenities. When planning bicycle and pedestrian facilities, it is important to maximize the availability of these elements in order to provide a high quality experience.

### *User*

It is also important to consider the needs and physical ability of the user. For example, the elderly and disabled will typically have different levels of ability than the remainder of the population. By giving consideration to the needs and physical ability of all users, use and success of the network will be maximized. Accommodating a broad cross section of users of all ages and abilities will help to maximize the use and success of the network.

### *Connectivity*

Connectivity refers to the linkages a network provides from a given point to another. When planning bicycle and pedestrian facilities, it is important to consider possible connections between neighborhoods, business districts, parks, community facilities, and natural environments through the connection of gaps within the existing network. By providing such connections, bicycle and pedestrian facilities can provide a viable route to a destination.

### *Signage*

Signage serves a number of important functions. Most importantly, it helps a user to identify his or her location and conveys information about facility characteristics. As such, proper signage is an important part of bicycle and pedestrian facility design.

Signage at the trailhead should include: the name of the facility; a large-format map; length; permitted activities; and, information on connections. Signage should contain a minimal amount of text by making extensive use of icons and pictograms. Locational markers placed at regular intervals along the route should supplement this information. Additionally, interpretative signage should be provided where significant natural or cultural features are present. All signage should be made of durable materials that resist fading, water damage, and vandalism.

With regard to traffic signage, it is noted that the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD) provides standards for all traffic control devices nationwide, including signs for bicycle facilities. All traffic control devices nationwide must conform to its standards. It is, therefore, the recommendation of the Circulation Plan Element that the current MUTCD be consulted when planning traffic control signage.

### *Amenities*

When planning bicycle and pedestrian facilities, it is important to provide appropriate amenities. The appropriateness of a particular amenity will be determined by the function, type, and anticipated users of the facility.

Amenities have a significant impact on a user's overall experience, and may include: bicycle racks; bicycle repair stations and air pumps; benches; picnic areas; drinking fountains; animal-proof refuse containers; observation areas; and shelters, among others.

### *Maintenance*

The proper maintenance and upkeep of Berkeley's bicycle and pedestrian facilities will ensure the public's continued use, safety, and enjoyment. As such, maintenance is an integral part of the bicycle and pedestrian facility planning process.

The maintenance required for a specific facility will be determined by type, surface, and amenities. Consequently, it is the recommendation of this Circulation Plan Element that a maintenance plan be written for the bicycle and pedestrian network in Berkeley Township.

A facility's future maintenance needs must also be considered during the design process. For instance, off-road facilities should be designed to be accessible to maintenance vehicles. Additionally, benches and other amenities should be designed to be low maintenance. By giving forethought to maintenance in the design process, a facility's future maintenance requirements can be simplified.

### Goals for Bicycle and Pedestrian Linkages

The Township's goals for bicycle and pedestrian linkages are as follows:

- Provide bicycle and pedestrian linkages between major destinations within the Township, and to neighboring municipalities.
- Establish a permanent advisory committee for bicycle and pedestrian facilities.
- To the greatest extent possible, develop bicycle and pedestrian linkages between dead-end streets and cul-de-sacs.
- Provide identification and guide signs for bicyclists and pedestrians.
- Provide safe and adequate bicycle parking options at key destinations, and in all public parks.
- Work with Ocean County to provide signage that alerts motorists of the presence of bicyclists along county roadways.
- Provide only bicycle-safe sewer grates in all areas of the Township.
- Provide adequate lighting to ensure safety for bicyclists and pedestrians.
- Ensure that all bicycle projects comply with recognized design standards, such as the *Guide for the Development of Bicycling Facilities* prepared by the American Association of State Highway and Transportation Officials.
- Investigate potential funding mechanisms for bicycle and pedestrian facilities, including grants and open space trust funds.
- Coordinate bicycle planning with Ocean County and the State of New Jersey.
- Develop a Township-wide bicycle and pedestrian facility map that is displayed at parks and other major destinations.
- Provide linkages with the Barnegat Branch Trail.
- Promote east-west bicycle and pedestrian access by improving crossings at key locations along Route 9.
- Provide traffic calming at key locations to improve bicycle and pedestrian safety and encourage use of facilities.

## Housing Plan Element

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Berkeley Township already filed a plan with the Council on Affordable Housing (COAH), but the plan has not been certified, therefore the Township is classified as having a “participating” status before COAH. A decision by the New Jersey Supreme Court on March 10, 2015 established a transitional process in which the Township will be able to file a declaratory action judgment immediately upon the March 10 decision becoming effective on June 8, 2015. The Township should undertake a review of the implications of the Supreme Court decision and make a determination of the appropriate course of action to address compliance with the affordable housing obligation.

While it is not the intent for this Housing Plan Element to make any changes to the Township’s Housing Element and Fair Share Plan at this time, the Housing Plan Element is hereby amended to address the following:

- The Township encourages homeowners of single-family structures to elevate their homes to make them more resilient to future Sandy-type storms.
- It is the Township’s policy that affordable housing should not be located within the flood hazard areas.
- Direct future multifamily residential development, away from areas that will exacerbate traffic congestion and safety concerns along Route 9, a critical emergency route, during storm events and encourage growth toward the Town Center and Corridor Node districts as part of an overall strategy of resilience.



## Community Facilities Plan Element

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The Community Facilities Plan Element is amended to include updated mapping of public facilities and other critical infrastructure. This mapping is provided in Appendix B and shows the location of such infrastructure in relation to important roadways (incl., evacuation routes) and flood hazard areas. It is the intent of this amendment that the updated mapping support multiple aspects of planning, including the development of an updated Emergency Operating Plan, which has been set as a goal for the Township by this master plan amendment.

In addition to the amendment of the Community Facilities Plan to include the updated mapping in Appendix B, it is noted that this master plan amendment includes several goals and objectives that are relevant to community facilities, including the elevation of key municipal facilities above the Advisory Base Flood Elevation and the preparation of a Capital Facilities Plan. These goals and objectives have been presented in a prior section of this document.

## Appendix B: Maps

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Map 1: Existing Land Use

Map 2: Environmental Constraints

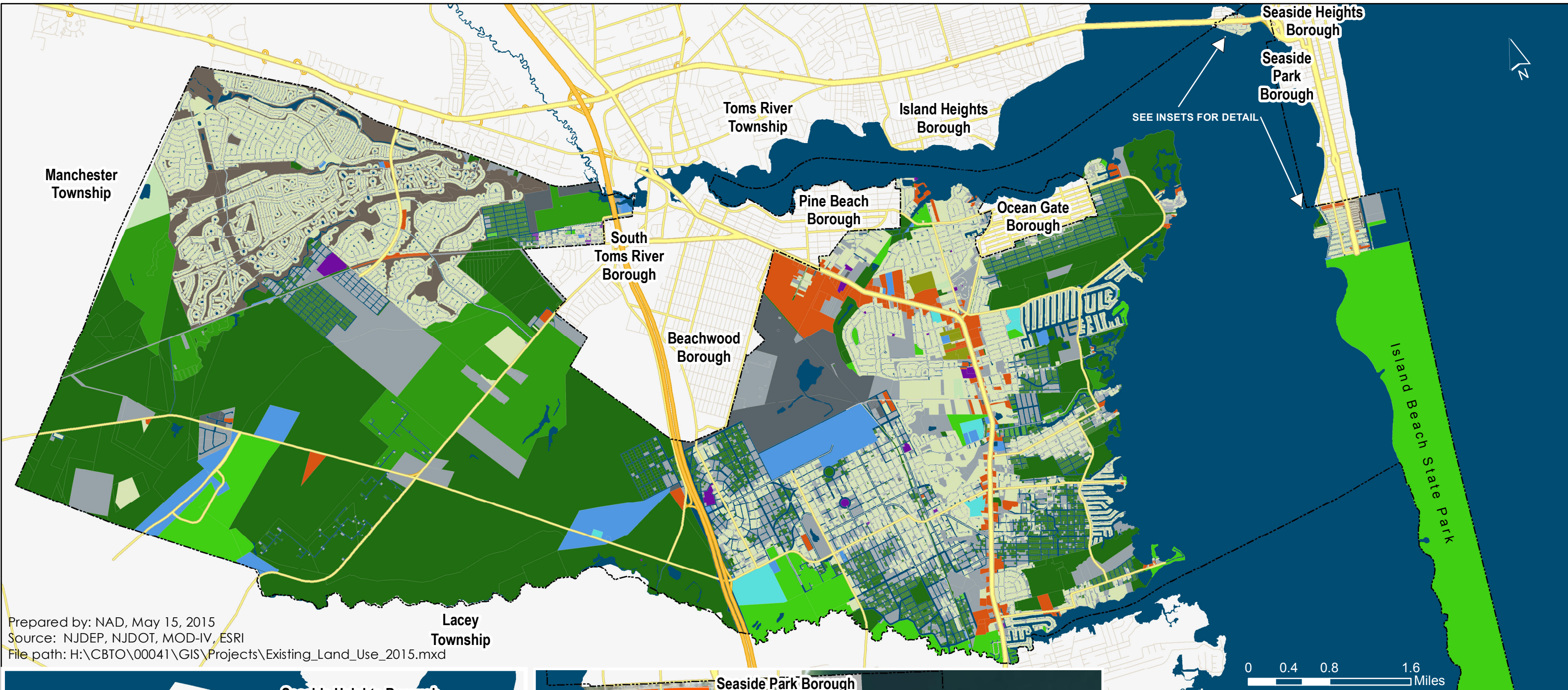
Map 3: Existing Zoning and Flood Hazard Areas Overlay

Map 4: Community Facilities and Flood Hazard Areas

Map 5-6: Riparian Buffer Overlay

Map 7: Wellhead Protection Area

Map 8: Land Use Plan

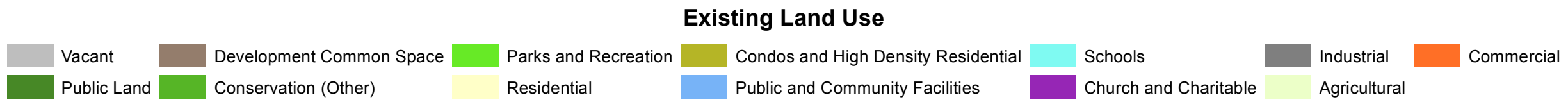


Prepared by: NAD, May 15, 2015  
 Source: NJDEP, NJDOT, MOD-IV, ESRI  
 File path: H:\CBTO\00041\GIS\Projects\Existing\_Land\_Use\_2015.mxd

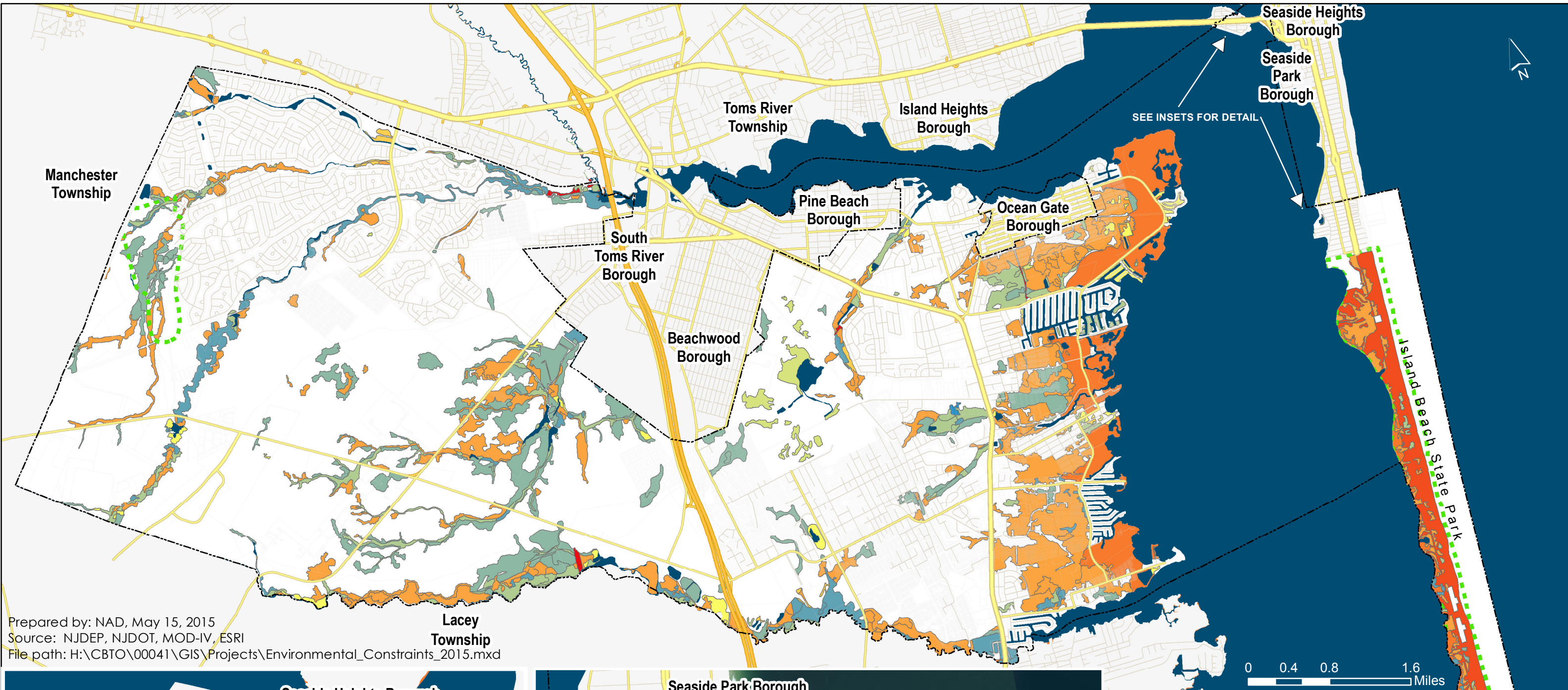


# Existing Land Use Berkeley Township Ocean County, New Jersey

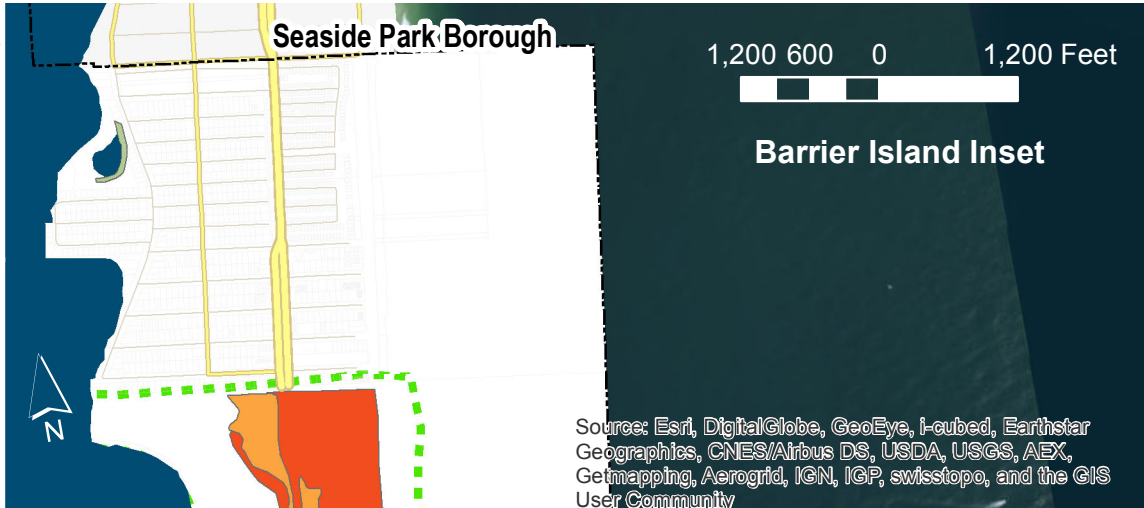
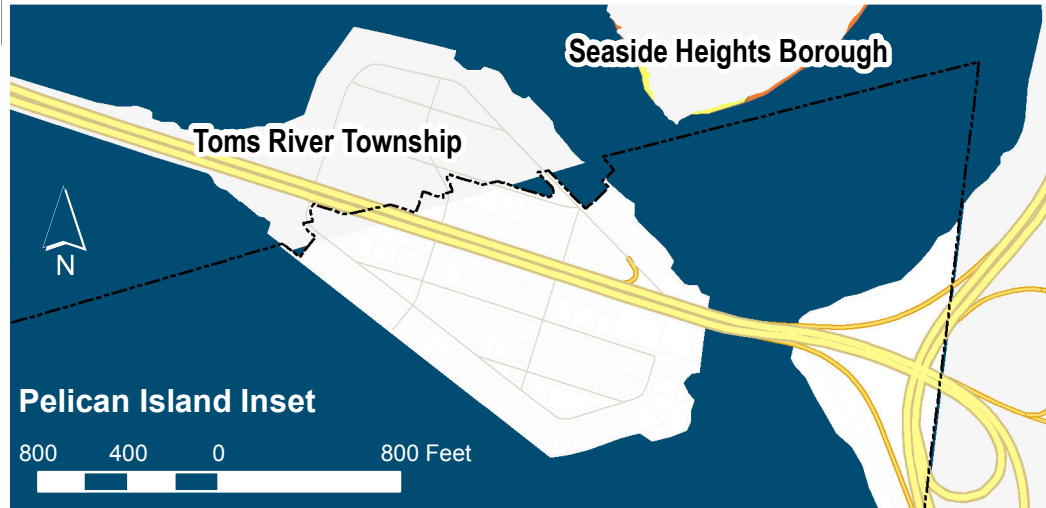
T&M Associates  
 11 Tindall Road  
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 Fax: 732-671-7365



NOTE: 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.



Prepared by: NAD, May 15, 2015  
 Source: NJDEP, NJDOT, MOD-IV, ESRI  
 File path: H:\CBTO\00041\GIS\Projects\Environmental\_Constraints\_2015.mxd



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

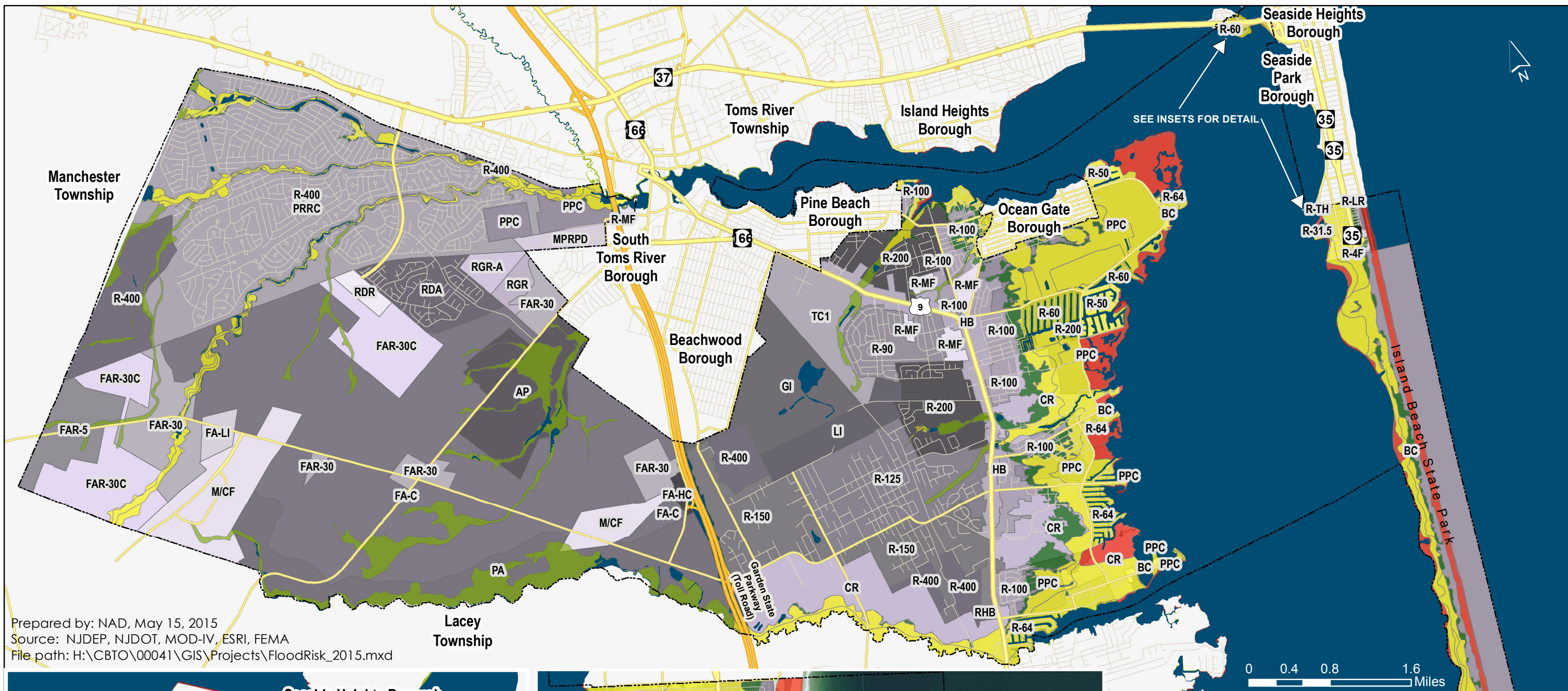
# Environmental Constraints Berkeley Township Ocean County, New Jersey

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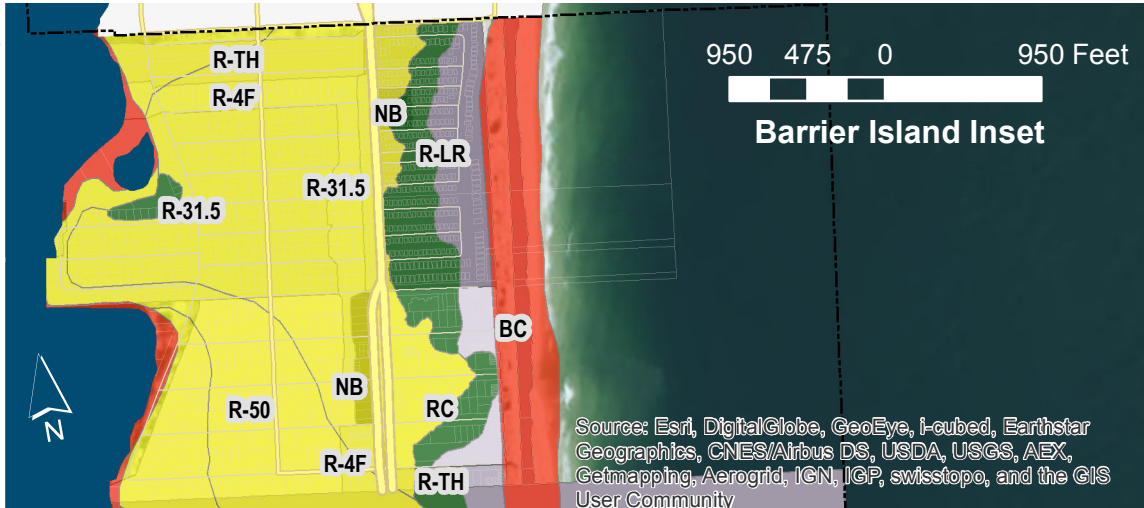
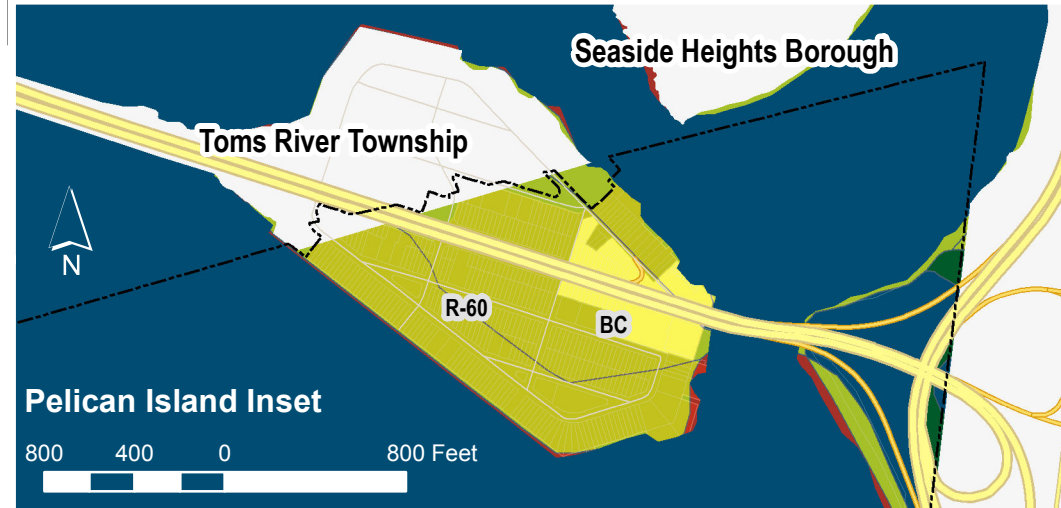


- |                                  |                                |                             |                                 |
|----------------------------------|--------------------------------|-----------------------------|---------------------------------|
| Agricultural Wetlands (Modified) | Deciduous Wetlands             | Managed Wetlands (Modified) | Vegetated Dunes                 |
| Atlantic White Cedar Wetlands    | Disturbed Wetlands ( Modified) | Mixed Wetlands              | Wetland ROWs (Modified)         |
| Coniferous Wetlands              | Herbaceous Wetlands            | Saline Marshes              | Natural Heritage Priority Sites |

NOTE: 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.



Prepared by: NAD, May 15, 2015  
 Source: NJDEP, NJDOT, MOD-IV, ESRI, FEMA  
 File path: H:\CBTO\00041\GIS\Projects\FloodRisk\_2015.mxd



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

# Flood Hazards Berkeley Township Ocean County, New Jersey

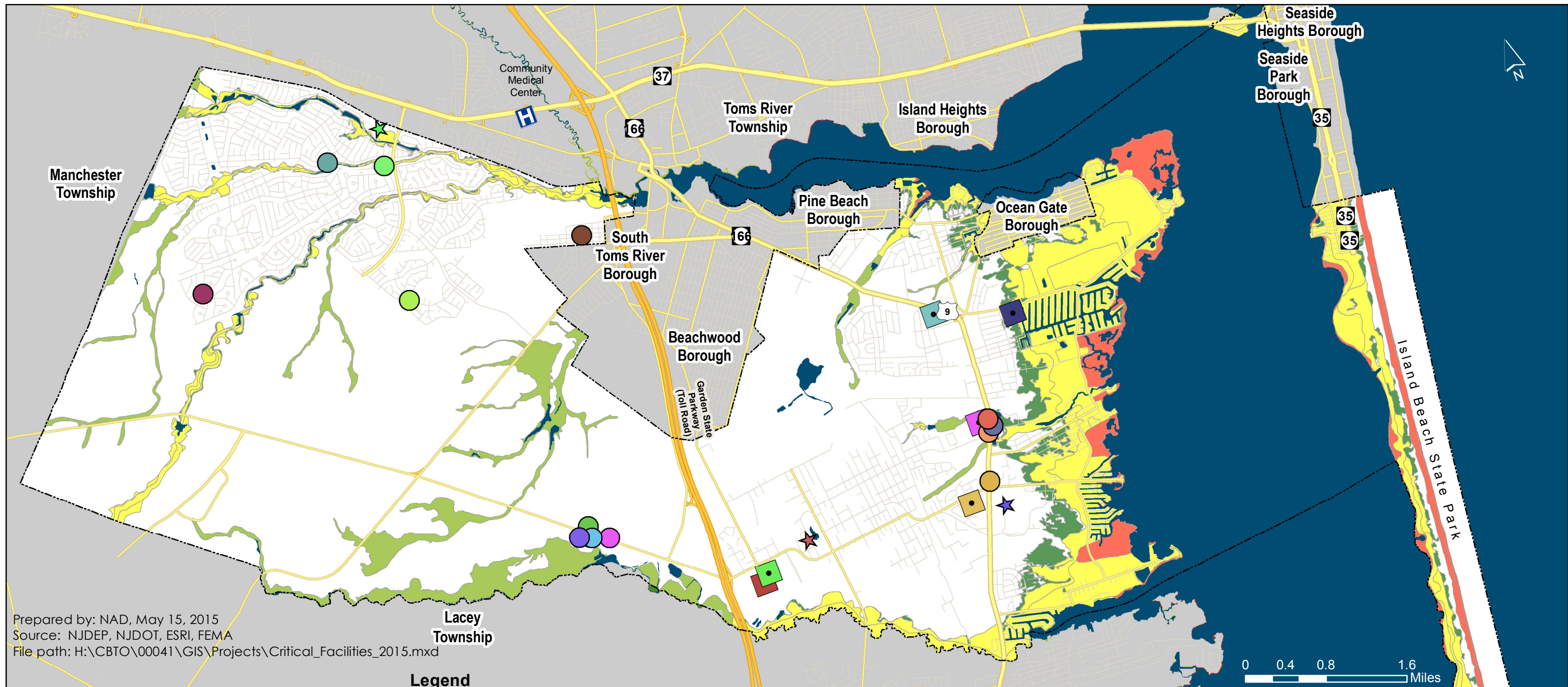
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### Flood Zones

- VE
- A
- AE
- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD

NOTE: 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.



Prepared by: NAD, May 15, 2015  
 Source: NJDEP, NJDOT, ESRI, FEMA  
 File path: H:\CBTO\00041\GIS\Projects\Critical\_Facilities\_2015.mxd

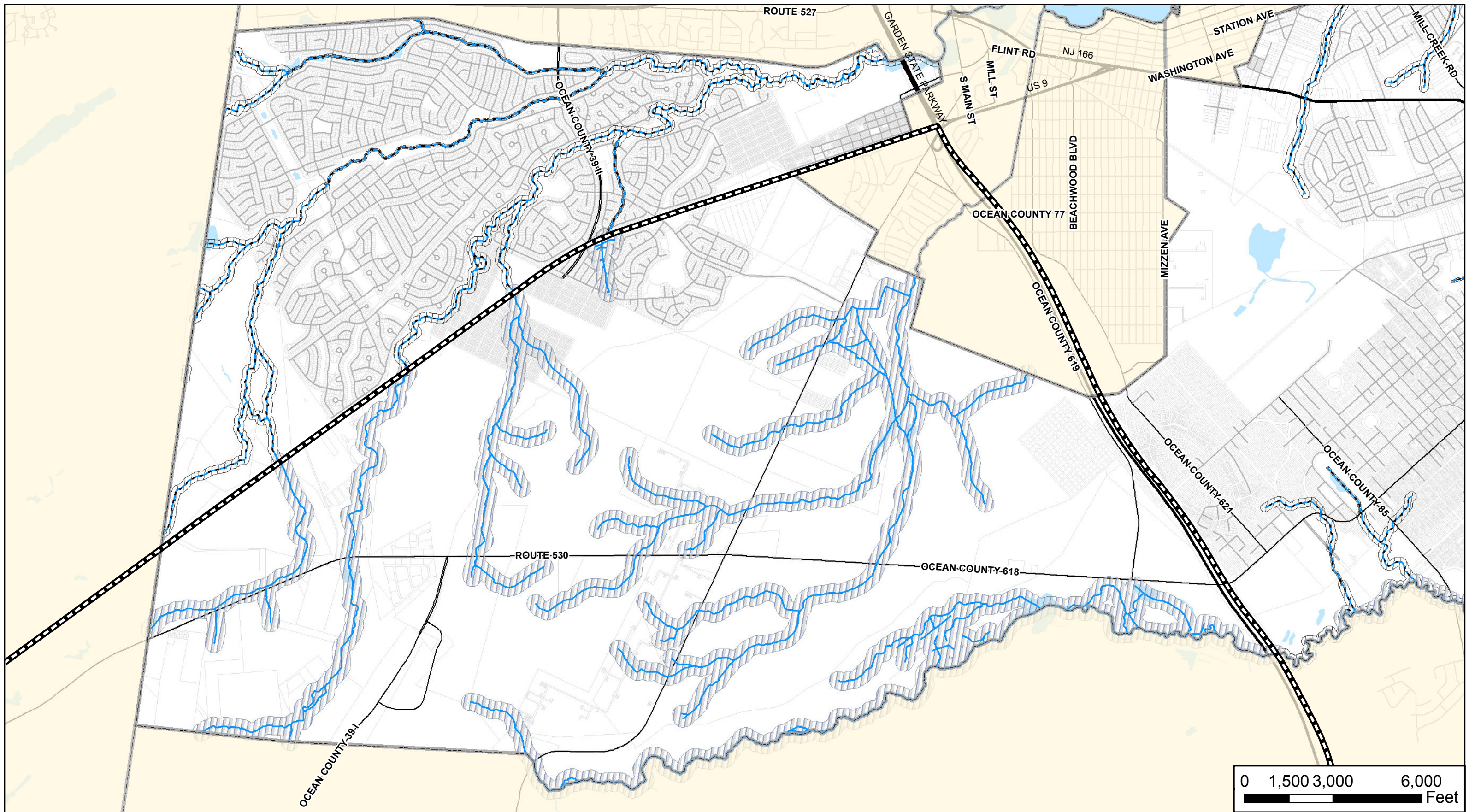
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|---------------------------------------|---|--|---------------------------------------|--|-------------------------------------|
| VE                                    | 0.2 PCT ANNUAL CHANCE FLOOD HAZARD        | BAYVILLE VOLUNTEER FIRE COMPANY 1                | BAYVILLE FIRST AID SQUAD              | CRYSTAL LAKE HEALTHCARE AND REHABILITATION | BERKELEY TOWNSHIP ELEMENTARY SCHOOL |
| AE                                    | BERKELEY TOWNSHIP POLICE DEPARTMENT       | MANITOU PARK VOLUNTEER FIRE COMPANY STATION 18   | HOLIDAY CITY BERKELEY FIRST AID SQUAD | HOLIDAY CARE CENTER                        | CENTRAL REGIONAL HIGH SCHOOL        |
| A                                     | BERKELEY TOWNSHIP PUBLIC WORKS            | MANITOU PARK VOLUNTEER FIRE COMPANY STATION 18-1 | HOLIDAY HEIGHTS FIRST AID SQUAD       | TALLWOODS CARE CENTER                      | CENTRAL REGIONAL MIDDLE SCHOOL      |
| BERKELEY TOWNSHIP RECREATION BUILDING | PINEWALD PIONEER VOLUNTEER FIRE COMPANY 2 | QUALITY MEDICAL TRANSPORT                        | SILVER RIDGE PARK FIRST AID SQUAD     | HOSPITALS                                  | CLARA B. WORTH ELEMENTARY SCHOOL    |
| BERKELEY TOWNSHIP TOWN HALL           |   | BAYVILLE ELEMENTARY SCHOOL                       |                                       | H & M POTTER ELEMENTARY SCHOOL             |                                     |

## Critical Facilities Berkeley Township Ocean County, New Jersey

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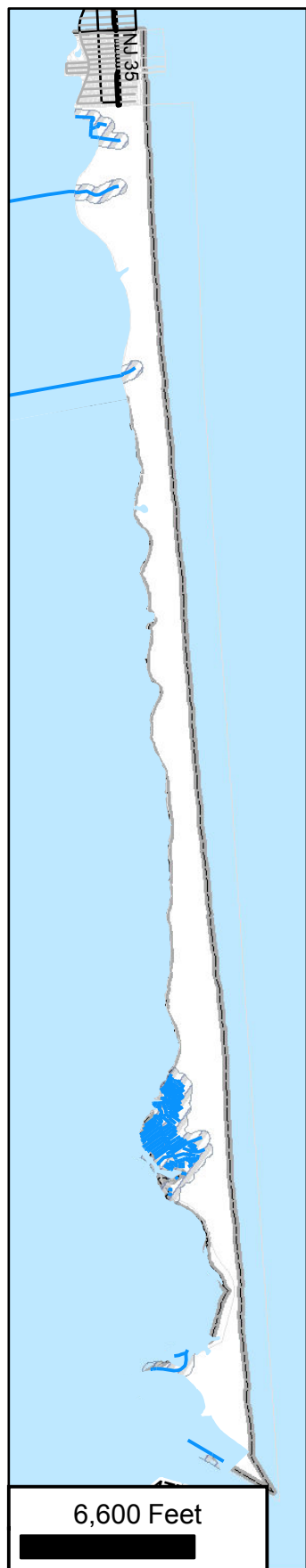
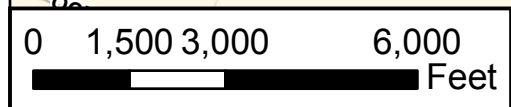
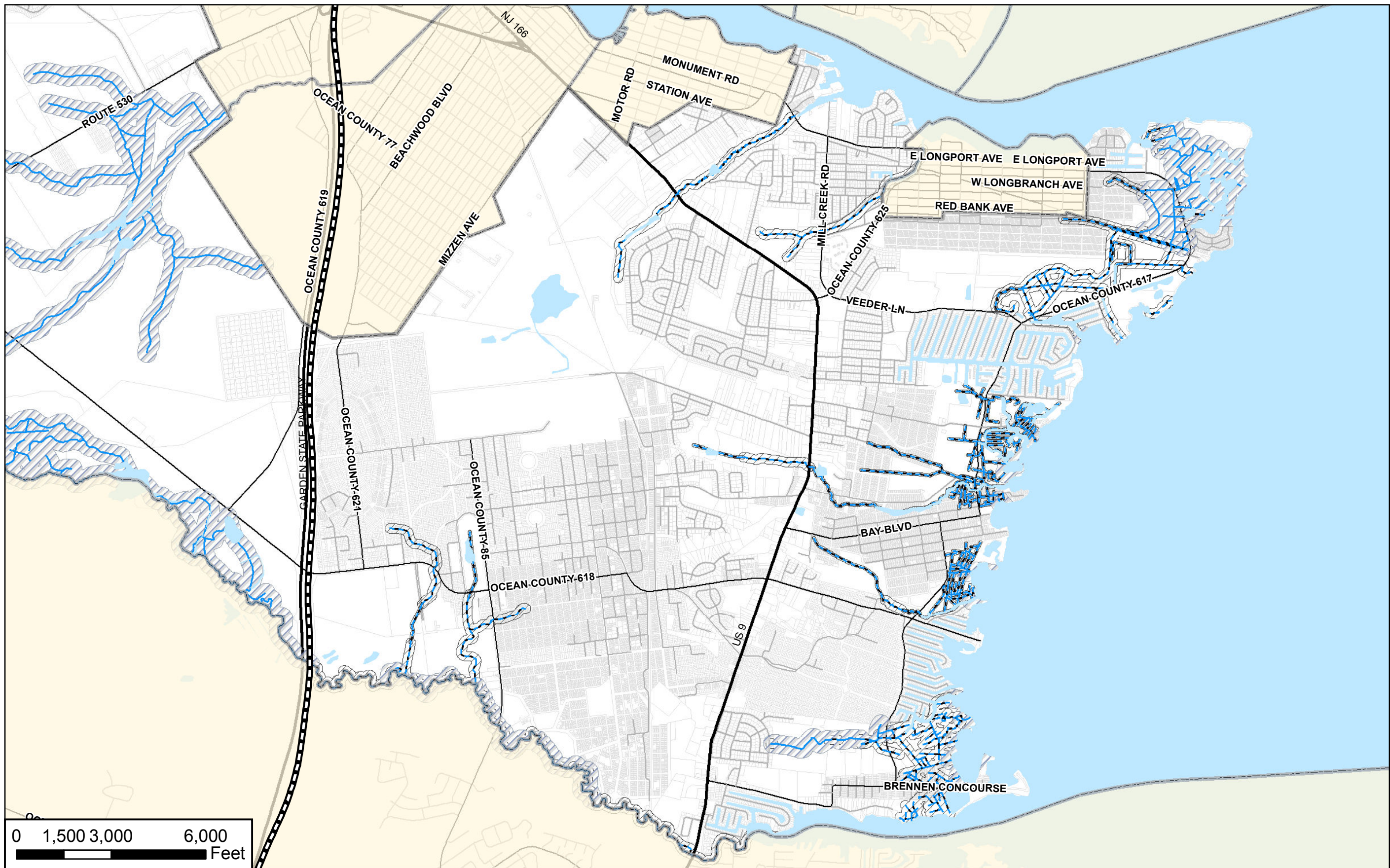
**T&M ASSOCIATES**  
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 Fax: 732-671-7365

Prepared by: ARR, August 8, 2012  
 Source: NJDEP (Streams, Water Bodies);  
 NJGIN (Tax Parcel, Municipal Boundary); NJDOT (Roads)  
 H:\CBTO\G1201\GIS\Projects\WHPA\_Exhibit.mxd

- |   |                    |               |
|---|--------------------|---------------|
| Category One (C1) Waterway  | Municipal Boundary | State Highway |
| Non-C1 Waterway   | Pinelands Boundary | County Road   |
| 50' Buffer (All Other Waterways)                                      | Tax Parcel         | Local Road    |
| 150' Buffer (Trout Production/Maintenance, T&E, Acid Producing Soils) | Water Body         |               |
| 300' Buffer (C1 Waterways)  |                    |               |

**Figure 1: Streams and Riparian Zones  
 West of Garden State Parkway  
 Berkeley Township  
 Ocean County, New Jersey**

NOTE: 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.



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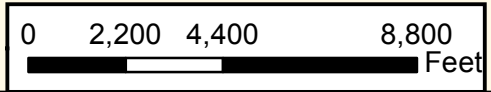
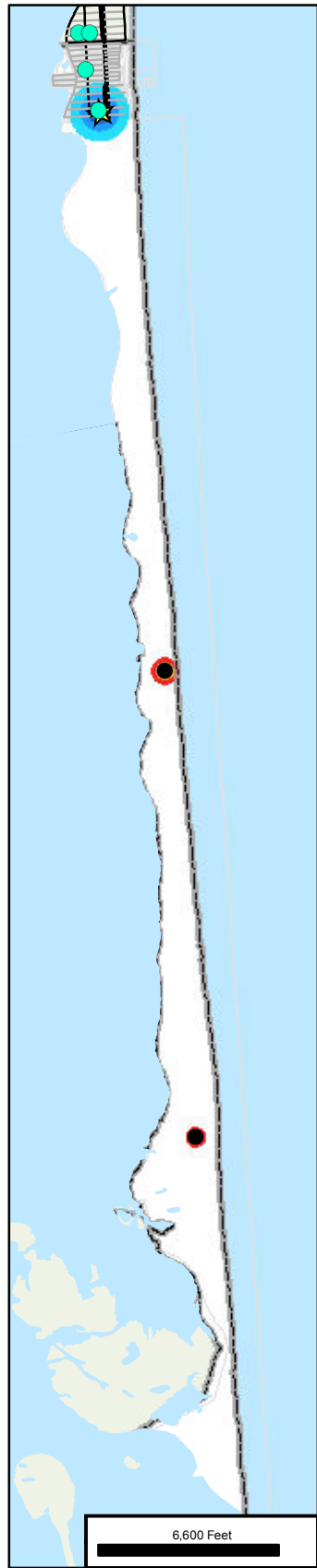
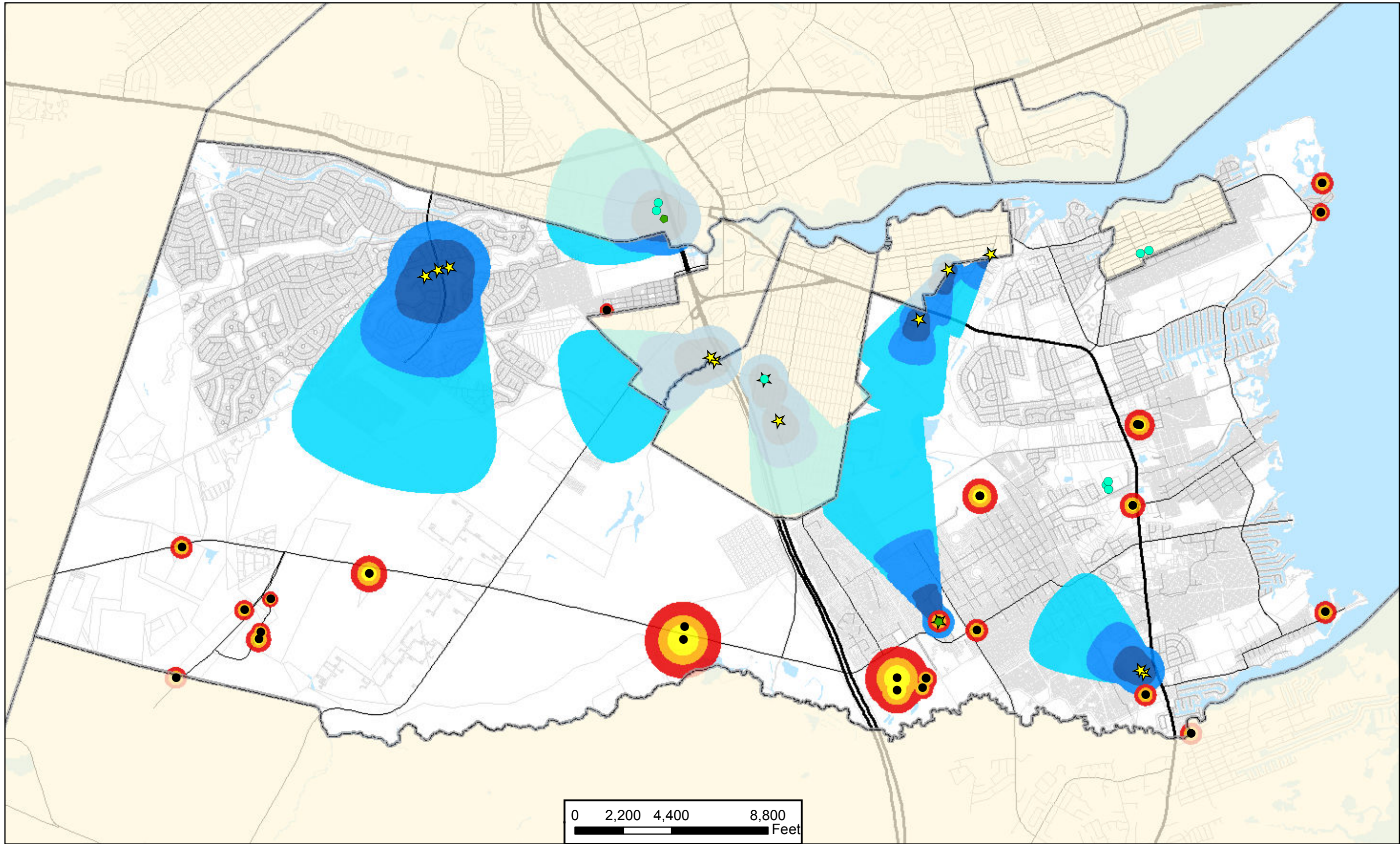
- Category One (C1) Waterway
- Non-C1 Waterway
- 50' Buffer (All Other Waterways)
- 150' Buffer (Trout Production/Maintenance, T&E, Acid Producing Soils)
- 300' Buffer (C1 Waterways)
- Municipal Boundary
- Pinelands Boundary
- Tax Parcel
- Water Body
- State Highway
- County Road
- Local Road



**Figure 2: Streams and Riparian Zones  
 East of Garden State Parkway  
 Berkeley Township  
 Ocean County, New Jersey**

NOTE: 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.





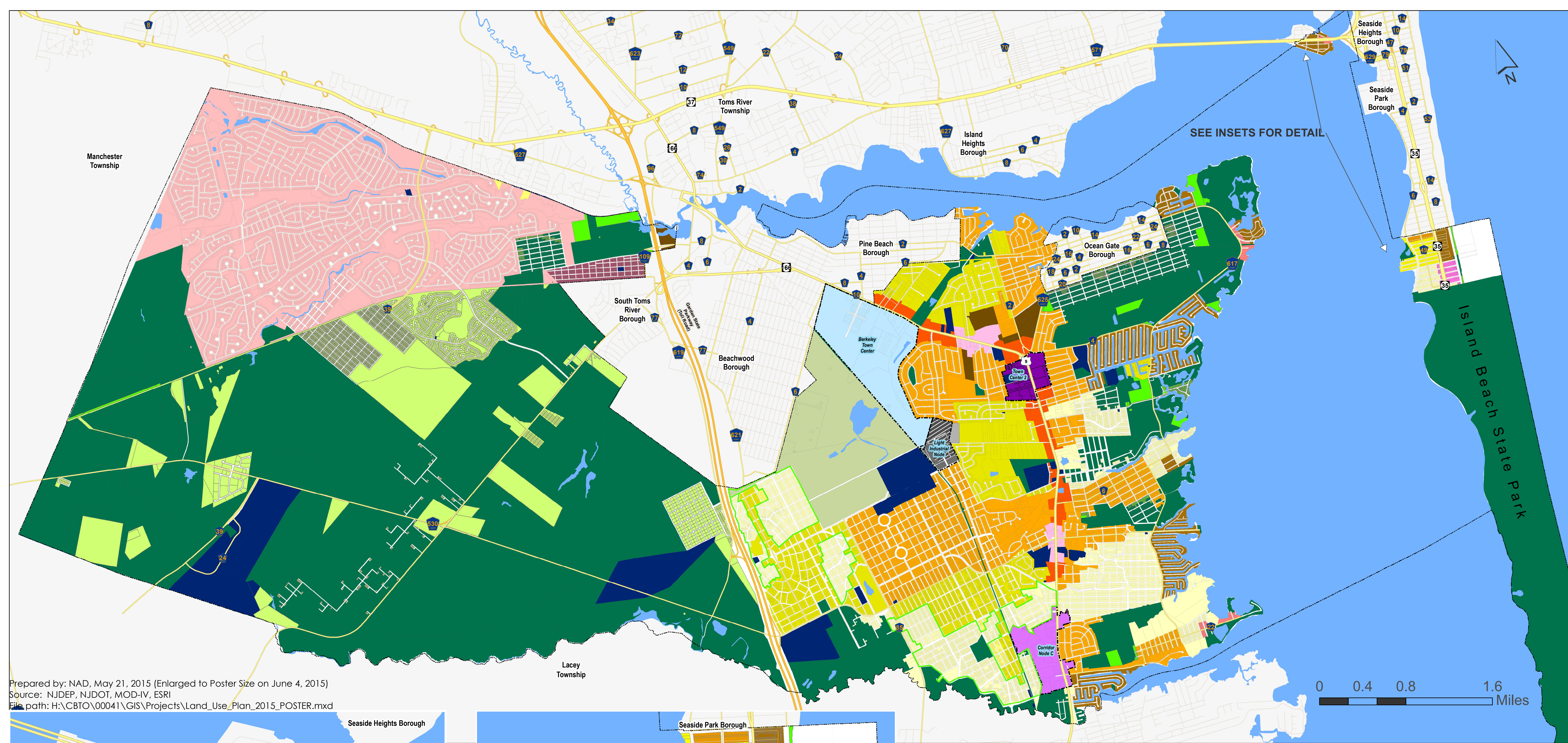
**T&M** ASSOCIATES  
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 Middletown, NJ 07748-2792  
 Phone: 732-671-6400  
 Fax: 732-671-7365

- |   |   |   |
|---|---|---|
| <p><b>Public Community Water Supply (PCWS) Wells</b></p> <ul style="list-style-type: none"> <li><span style="color: cyan;">●</span> Confined</li> <li><span style="color: green;">◆</span> Semi-Confined</li> <li><span style="color: yellow;">★</span> Unconfined</li> </ul> <p><b>Wellhead Protection Areas for PCWS Wells</b></p> <ul style="list-style-type: none"> <li><span style="background-color: darkblue; width: 15px; height: 10px; display: inline-block;"></span> Tier 1: 2-Year Travel Time</li> <li><span style="background-color: blue; width: 15px; height: 10px; display: inline-block;"></span> Tier 2: 5-Year Travel Time</li> <li><span style="background-color: lightblue; width: 15px; height: 10px; display: inline-block;"></span> Tier 3: 12-Year Travel Time</li> </ul> | <p><b>Public Non-Community Water Supply (PNCWS) Wells</b></p> <ul style="list-style-type: none"> <li><span style="color: black;">●</span> Public Non-Community Water Supply (PNCWS) Wells</li> </ul> <p><b>Wellhead Protection Areas for PNCWS Wells</b></p> <ul style="list-style-type: none"> <li><span style="background-color: yellow; width: 15px; height: 10px; display: inline-block;"></span> Tier 1: 2-Year Travel Time</li> <li><span style="background-color: orange; width: 15px; height: 10px; display: inline-block;"></span> Tier 2: 5-Year Travel Time</li> <li><span style="background-color: red; width: 15px; height: 10px; display: inline-block;"></span> Tier 3: 12-Year Travel Time</li> </ul> | <ul style="list-style-type: none"> <li><span style="border: 1px solid black; width: 15px; height: 10px; display: inline-block;"></span> Municipal Boundary</li> <li><span style="border: 1px solid gray; width: 15px; height: 10px; display: inline-block;"></span> Tax Parcel</li> <li><span style="background-color: lightblue; width: 15px; height: 10px; display: inline-block;"></span> Water Body</li> <li><span style="border-bottom: 2px solid black; width: 15px; display: inline-block;"></span> State Highway</li> <li><span style="border-bottom: 1px solid black; width: 15px; display: inline-block;"></span> County Road</li> <li><span style="border-bottom: 1px solid gray; width: 15px; display: inline-block;"></span> Local Road</li> </ul> |
|---|---|---|

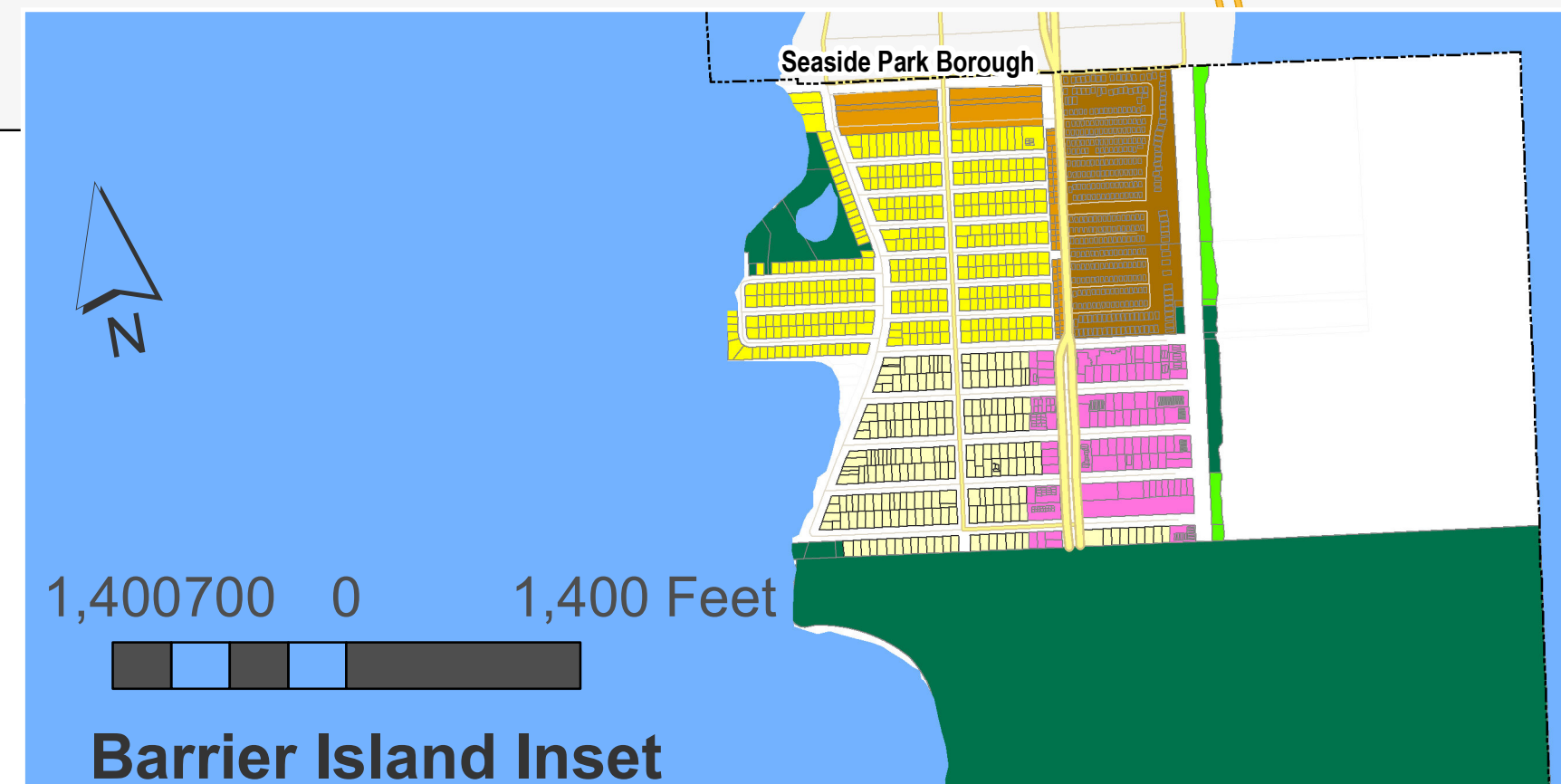
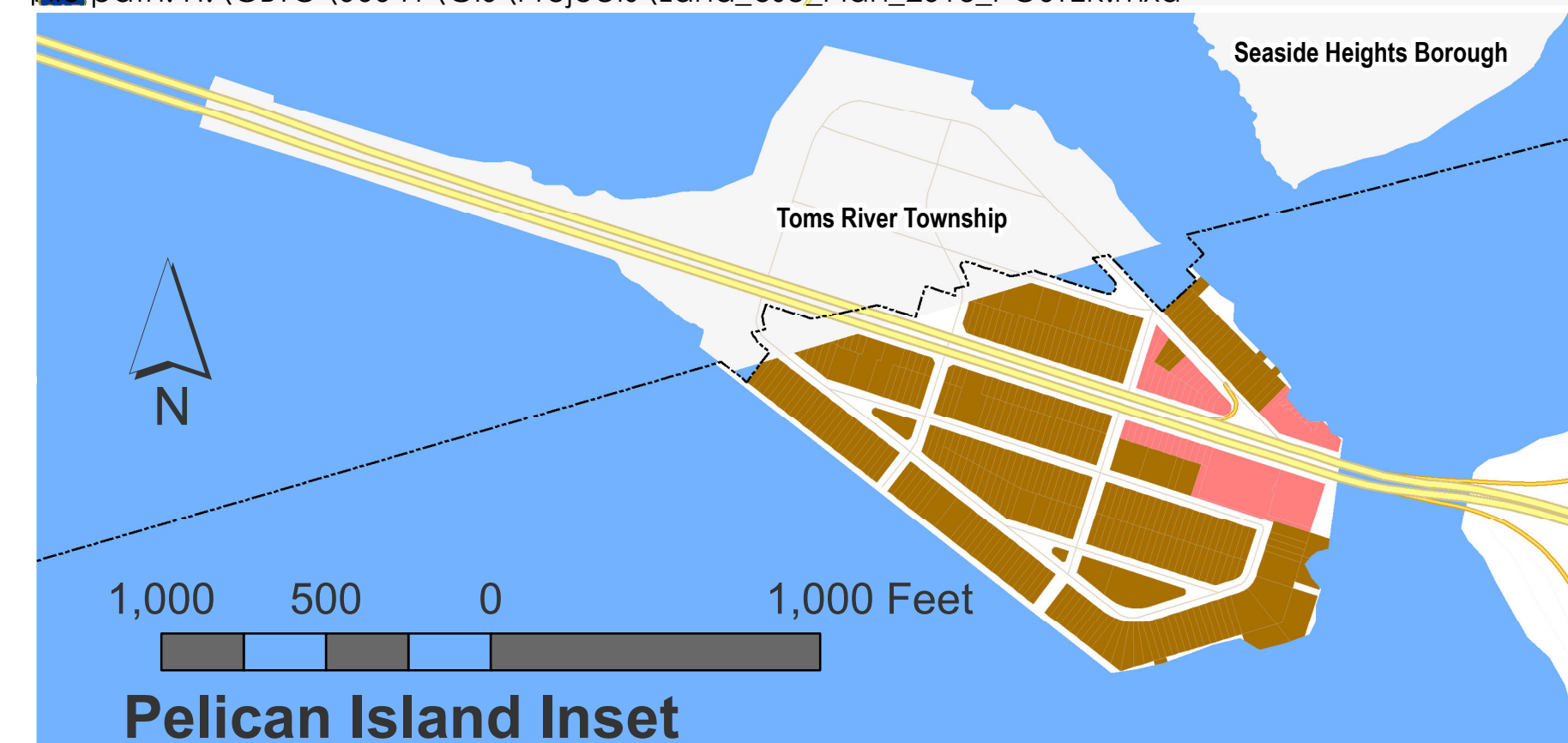
**Exhibit A: Wellhead Protection Areas  
 Berkeley Township  
 Ocean County, New Jersey**

Prepared by: ARR, August 8, 2012  
 Source: NJDEP (Wells, Wellhead Protection Areas, Water Bodies);  
 NJGIN (Tax Parcel, Municipal Boundary); NJDOT (Roads)  
 H:\CBTO\G1201\GIS\Projects\WHPA\_Exhibit.mxd

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Prepared by: NAD, May 21, 2015 (Enlarged to Poster Size on June 4, 2015)  
 Source: NJDEP, NJDOT, MOD-IV, ESRI  
 File path: H:\CBTO\00041\GIS\Projects\Land\_Use\_Plan\_2015\_POSTER.mxd



# Land Use Plan Berkeley Township Ocean County, New Jersey

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NOTE: 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.

- |                        |                          |                      |                                |                                |                                  |                               |  |                            |  |                                 |
|------------------------|--------------------------|----------------------|--------------------------------|--------------------------------|----------------------------------|-------------------------------|--|----------------------------|--|---------------------------------|
| TDR Sending Areas      | Island Mixed Use         | Island Residential B | <b>Land Use</b>                | Parks and Preserved Open Space | Manitou Park Rehabilitation Area | Light Industrial              | Public Building/Fa...                  | Low Density Residential    | High Density Residential                 | Medium-High Density Residential |
| TDR Receiving Areas    | Island Townhouse         | Island Residential A | Town Center 1 (Receiving Area) | Conservation and Preservation  | Nodes A & B                      | Conservation and Preservation | Light Industrial Node                  | Medium Density Residential | Planned Residential Retirement Community |                                 |
| <b>Island-Specific</b> | Island Cottage Community | <b>Pinelands</b>     | Conservatio... Industrial      | Pinelands Districts            | Town Center 2 (Receiving Area)   | Node C (Receiving Area)       | Conservatio... Low Density Residential | Multi-Family Residential   | Bayfront Commercial                      |                                 |
|                        |                          |                      | Highway Commercial             |                                |                                  |                               |  |                            |  |                                 |