

Ocean Township



Strategic Recovery Planning Report

Ocean Township Strategic Recovery Planning Report

Adopted April 10, 2014

Prepared by:



T&M Associates
11 Tindall Road
Middletown, NJ 07748



Stan C. Slachetka, PP, AICP
NJ Professional Planner No.: 03508

The original of this document was signed and sealed in accordance with New Jersey Law.

Executive Summary

When Superstorm Sandy struck the coast of New Jersey on October 29, 2012, it brought extensive damage to Ocean Township from both storm surge and wind damage. Ocean reported that 87 properties within the Township's jurisdiction faced substantial damage. Five of the Township's sewage pump stations went offline due to floodwater inundation and/or power system failure. Trees and power lines throughout the Township also fell, in some cases damaging roofs and buildings. The Township also faced total power outages for 14 days.

In response to the impacts faced by Superstorm Sandy, Ocean Township's recovery efforts have been extensive. Ocean Township passed and amended ordinances including methods to reduce flood loss and to update building height definitions for properties located in flood hazard areas. The Township has also applied for funding to elevate 203 homes. Other recovery actions include repairs and improvements to parks, water meters, and emergency generators throughout the Township that were damaged and/or destroyed.

Ocean Township property and business owners have also received recovery aid from the New Jersey Department of Community Affairs Community Development Block Grant programs; the Township has been awarded \$1,150,000 for the Homeowner Resettlement Program, \$4,100,000 for the Homeowner Reconstruction, Rehabilitation, Elevation, and Mitigation program, \$90,000 for the Small Rental Properties/Landlord Rental Repair Program, and \$17,026,612 for the Fund for Restoration of Large Multi-Family Housing. Furthermore, Ocean has received 29 home loans from the Small Business Administration totaling \$2,249,800 and two business and economic injury disaster loans totaling \$84,900.

Ocean Township's recommended municipal actions to promote recovery from Superstorm Sandy and to reduce vulnerabilities from future storms include (but are not limited to) the following resiliency actions: updating the Comprehensive Master Plan; stabilizing the bay shoreline by installing riprap; installing new generators at key municipal buildings; installing a town-wide Supervisory Control and Data Acquisition (SCADA) system; automating and upgrading the zoning and construction permit program; reviewing zoning in the waterfront development districts as it relates to resiliency and promoting rebuilding; developing a GIS database/inventory of Township-owned infrastructure; compiling low-elevation aerial mapping of identified special flood hazard areas; and continuing participation in FEMA's CRS program with actions designed to further improve the Township's CRS rating.

Acknowledgements

Mayor and Committee

Dennis F. Tredy, Mayor
Tina Wetter, Deputy Mayor
Joseph Lachawiec, Committeeman

Township Officials

David Breeden, Township Administrator
Diane Ambrosio, Township Clerk
Laurie Clune, Zoning Official

Office of Emergency Management

Scott Murphy, Deputy Coordinator

Department of Public Works

Matthew Ambrosio, Superintendent

Department of Utilities

Clifford Keen, Superintendent

Township Attorney

Gregory McGuckin

T&M Associates

Stan Slachetka, PP, AICP
James Oris, PE, CME, Township Engineer
Jason Worth, PE, PP, CME
Jeffrey Cucinotta

Table of Contents

Introduction.....	1
Description of Ocean Township.....	2
Assessment of Existing Planning Documents.....	5
Ocean Township.....	5
Master Plan Update, 1999.....	5
Economic Redevelopment Plan, 2000.....	5
Master Plan Reexamination Report, 2001.....	6
Open Space and Recreation Plan, 2002.....	6
Amended Land Use Plan Element, 2003.....	7
Waretown Town Center State Plan Endorsement, 2005.....	8
Amended Land Use Plan Element, Circulation Plan Element, and Master Plan Reexamination Report, 2005.....	10
Housing Plan Element and Fair Share Plan, Cycles I, II, and III, 2005 & 2008.....	10
Land Use Element Amendment- Environmental Conservation and Bayfront Conservation Areas, 2006.....	10
Municipal Stormwater Management Plan, 2008.....	11
Community Forestry Management Plan, 2008-2012.....	11
Floodplain Management Plan, 2012.....	12
Emergency Operating Plan.....	12
Ocean County.....	13
Ocean County Comprehensive Master Plan, 2011.....	13

Ocean County Multi-Jurisdictional All-Hazard Mitigation Plan, 2013 15

Comprehensive Farmland Management Plan, 2008 18

Regional Plans..... 18

Pinelands Comprehensive Management Plan..... 18

Coastal Area Facility Review Act (CAFRA) 19

Evaluation of Superstorm Sandy’s Impacts on Ocean Township..... 21

Damage to Properties 22

Damage to Parks 24

Damage to Water Meters 26

Damage to Sanitary Sewer Pump Stations..... 26

Community Vulnerabilities Exacerbated by Superstorm Sandy..... 26

Community Opportunities Created by Superstorm Sandy 27

Current Status of Post-Sandy Recovery Efforts..... 28

Municipal Efforts 28

Community Development Block Grant (CDBG) Disaster Recovery Programs 29

Small Business Administration Disaster Loans 30

FEMA’s Hazard Mitigation Grant Program (HMGP) Elevation Program..... 30

Residential Elevation of 203 Homes 30

Park Improvements 32

Water Meter Improvements 32

Emergency Generator Replacement Project..... 32

Participation in FEMA’s Community Rating System 33

Community Involvement..... 33

Ocean County Long Term Recovery Group 33

Rebuilding Approaches That Will be More Resistant to Damage from Future Storms..... 34

Recommended Municipal Actions to Promote Recovery from Superstorm Sandy and to Reduce Vulnerabilities to Future Storms 35

 Immediate/Short-Term Range..... 35

 Mid- to Long-Term Range..... 36

Summary of Actions and Priorities 38

List of Figures

Figure 1: Regional Location 3

Figure 2: Key Community Facilities and Flood Hazard Areas 4

Figure 3: Waretown Town Center Location 9

Figure 4: Pinelands and CAFRA Boundaries in Ocean Township 20

Figure 5: A Downed Tree and Traffic Light..... 21

Figure 6: A Downed Tree and Power Line..... 21

Figure 7: A Downed Tree and Power Line..... 22

Figure 8: Debris from Superstorm Sandy at Bryant Road and Demmy Avenue 22

Figure 9: Substantially Damaged Properties in Ocean Township 23

Figure 10: Destroyed Dock at Bryant Park..... 24

Figure 11: Damages at Bryant Park..... 24

Figure 12: Flooding at the Tuscarora Park Area 25

Figure 13: Flooding at the Tuscarora Park Area 25

Figure 14: Flooding at the Bay-End of Tuscarora Avenue..... 25

Figure 15: Preliminary Flood Insurance Rate Map (FIRMs) Elevations in Ocean Township 31

Introduction

This Strategic Recovery Planning Report (SRPR) will serve as a blueprint to guide Ocean Township's recovery from the effects of Superstorm Sandy and to reduce vulnerabilities to future storms. Accordingly, the report:

- Evaluates the impacts on affected community features in Ocean Township and address the conditions created or exacerbated by the storm;
- Articulates the planning goals, strategies, and priority actions that are most urgently needed to improve public safety, increase resistance to damage from future storms, and stimulate economic recovery; and
- Contains detailed descriptions of each of the projects proposed; a statement of need that demonstrates how each project relates to the impacts of Superstorm Sandy; why the project is important to the economic and environmental health of the community; the major tasks associated with each project; the estimated cost of implementation; identification of potential or actual funding sources to pay for project implementation; and estimated implementation dates.

Description of Ocean Township

Ocean Township is a predominantly rural-suburban residential community with a population of approximately 8,333 (according to the U.S. Census Bureau's American Community Survey 2012 estimate). It is located on the eastern bay shore of Barnegat Bay in central Ocean County. The Township is about 21 square miles in area. Ocean Township is bordered to the north by Lacey Township, to the south and west by Barnegat Township, and to the east by Barnegat Bay, as seen in Figure 1. The Township has 3.62 miles of coastline fronting Barnegat Bay.

To the east across Barnegat Bay is Barnegat Inlet. There are also several uninhabited and undeveloped sedge islands adjacent to Barnegat Inlet that are within the Township's jurisdiction, but are owned by the State as part of Island Beach State Park.

Ocean Township is divided by the Garden State Parkway, which runs north and south through the Township. The Township's land use pattern is generally characterized by the Pinelands to the west of the Parkway, which makes up about 64.4% of the Township's land area. The land to the east of the Parkway (encompassing the remaining 35.6% of the Township's land area) is in the CAFRA zone. The eastern part of Ocean Township is marked by US Highway 9, which also runs north and south through the Township and is where most of the Township's development has occurred over the last 30 years. The land to the east of the Garden State Parkway is generally developed with residential and maritime-related uses.

Ocean Township is subject to flooding (sometimes serious tidal flooding) from hurricanes/tropical storms and nor'easters, which in the past have brought heavy precipitation, higher tides, and strong wave activity. Tidal flooding is the Township's predominant loss risk, as there are several streams in and bordering the Township. The Waretown Creek runs through the Township, Oyster Creek runs along the northern border of the Township, and Lochiel Creek runs along the southern border. These streams are all influenced by tides where development is located within the floodplain.

There are a total of 2,947 structures estimated within the Township's Special Flood Hazard Areas (SFHA), 2,807 of which are residential structures. The remaining are commercial (134 structures), industrial (1), religious or non-profit (4), and utilities (1). None of the Township's public buildings are located in a flood hazard area. Figure 2 outlines the Township's flood hazard area in relationship to key community facilities.

As of April 2012, The Township had 13 properties listed as repetitive losses, two (2) of which had been elevated to raise the first floor above the base flood elevation. A repetitive loss property is defined as one in which a NFIP claim of \$1,000 has been reported at least twice in the last ten years. The repetitive losses are located in the various lagoon lot sections of town.

Figure 1: Regional Location

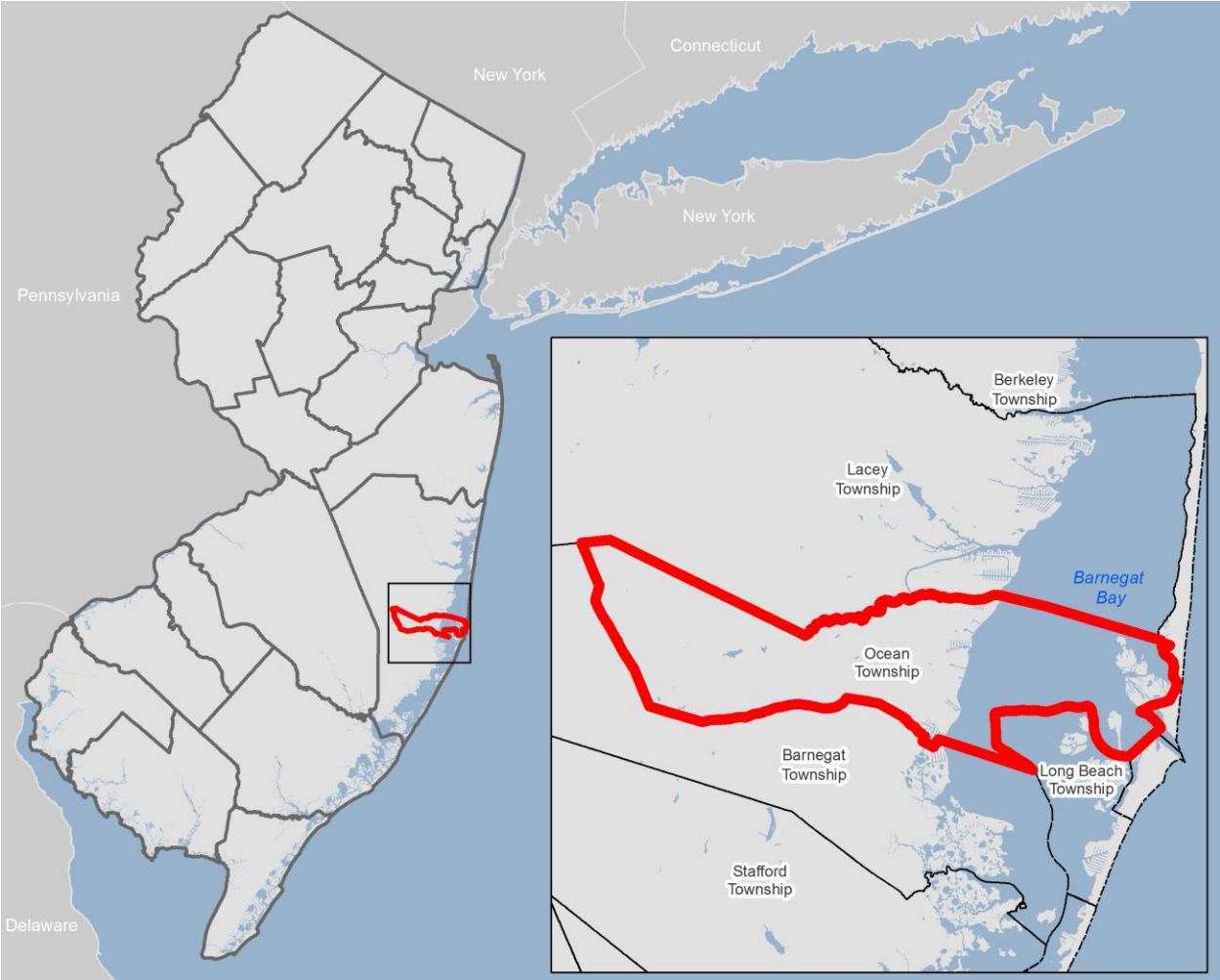
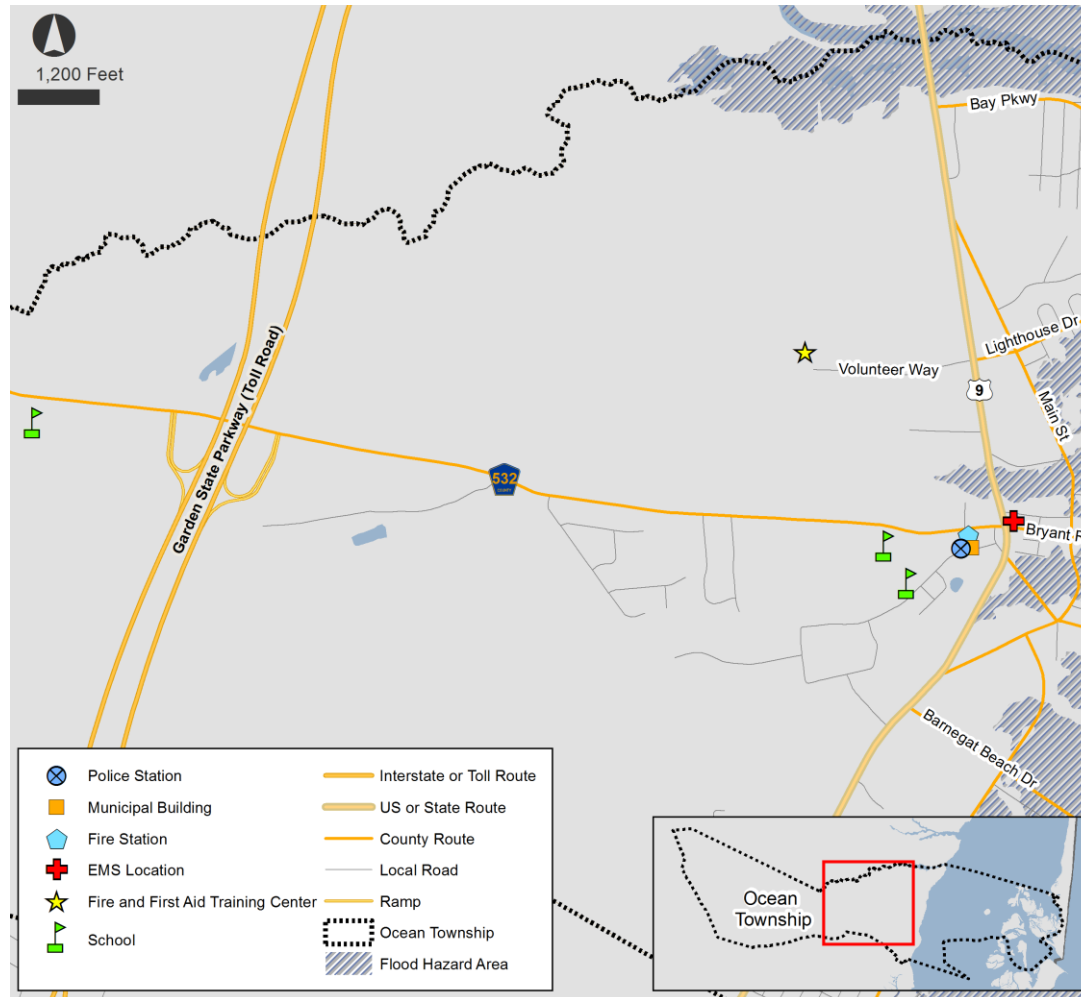


Figure 2: Key Community Facilities and Flood Hazard Areas



Assessment of Existing Planning Documents

Ocean Township

Master Plan Update, 1999

The 1999 Plan serves as an update to Ocean Township's prior Master Plan, which was adopted in 1982. The 1999 update develops guidelines for future land development and redevelopment within Ocean Township. Included in this plan are recommendations for the locations, types, and densities for residential and non-residential land uses.

The Plan includes the following objectives that are relevant to this SRPR:

General Development Goals:

- Encourage the use of best management policies for all development to ensure the least negative impact on the overall quality of residential life and the environment in 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.

Conservation and Environmental Protection:

- Provide for cluster design to conserve open space and natural amenities in residential subdivisions and projects.

- Establish a system of conservation areas which are designed to limit or restrict development in wetlands, along streams, and in undeveloped bay front locations; promote appropriate recreational uses in these conservation areas.

Residential Development:

- Encourage development of new residential housing units in areas that are served with adequate infrastructure including water, sewer, stormwater management, and streets, so as to minimize any negative environmental impacts.

Commercial Development:

- Maximize the economic benefit of resource-based development with the lowest possible negative environmental impact.

Economic Redevelopment Plan, 2000

The goals of the 2000 Economic Redevelopment Plan (ERP) are to provide a development plan for Ocean Township that will provide for a combination of private and public activities. The relevant goals of the 2000 ERP for this SRPR include:

- Reinforcing the goals of making Ocean Township a place where people will want to live and work.
- Capitalizing on the accessibility of Barnegat Bay through its many marinas, for both commercial and recreational opportunities.

- Developing underutilized and unused land in a manner which increases the Township’s economic viability without burdening its municipal services.
- Protecting to the greatest extent possible the existing environmentally sensitive resources of the area.
- Ensuring that the redevelopment plan is consistent with the Town’s Master Plan, the State Plan, and all other planning documents with jurisdiction in Ocean Township.
- Providing a program of rehabilitation of existing residential and commercial uses so they can become a viable component of the Town’s overall economic plan.

The Economic Redevelopment Plan was amended in 2007 and in 2013 to incorporate the Waretown Town Center (explained below), and to provide more specific land use categories and general design standards to regulate lands within the redevelopment area.

Master Plan Reexamination Report, 2001

After the adoption of the 1999 Master Plan, the Ocean Township’s governing body became concerned with the impact that single family development was having on the Township, and therefore directed the Land Use Board to conduct this Reexamination Report to include an updated Land Use Element, Single Family Dwelling Unit Build-out Analysis, and the municipality’s capacity to effectively manage that growth.

The intent and purpose of the Reexamination Report was to develop guidelines and future land development and redevelopment within the Township. Its goal was to address the Governing Body’s concern about Ocean Township’s ability to sustain and support the residential development that could take place under the prior Land Use Plan.

In this Report, the Ocean Township Land Use Board expressed its concern about the imbalance between the ratio of privately owned commercial property to residential property. Therefore, a goal of this Reexamination Report for residential development included using smart growth principals to create a balanced development plan that ensures sustainability and protection of the natural systems.

Open Space and Recreation Plan, 2002

The Open Space and Recreation Plan (OSRP) includes an inventory of existing open space and recreation facilities and activities, identification of open space and recreation goals, a recreation and open space needs analysis, and an action plan focused on the preservation of open land. As of 2002, when this Plan was adopted, Ocean Township had 2,748 acres of publicly owned land devoted to conservation and recreation purposes, 94% of which is owned by the Federal Government, the State of New Jersey, or Ocean County.

The OSRP proposes to meet the Township’s open space and recreation needs through the acquisition of strategic vacant parcels in the Township. The intent of the OSRP is to preserve

existing open space, environmentally sensitive lands, and greenways.

The Plan serves to guide future open space acquisitions and recreation development in Ocean Township. The Plan will also be utilized to address New Jersey Green Acres program requirements for Planning Incentive Grants and other funding programs.

The main goal of the OSRP is to preserve open space and natural lands for a range of recreational uses and for historical and environmental benefits. The Plan's objectives include the following:

- Improve the quantity, variety, and quality of useable active and passive open space.
- Provide open spaces that contribute to building and maintaining community and neighborhood identity.
- Maintain and enhance the natural environment by preserving lands for passive open space and resource conservation.
- Coordinate the acquisition, use, and management of open space lands.

The OSRP's needs analysis examines the adequacy of the current open space and recreation system to address the present and future needs of the Township.

The OSRP's action plan outlines specific Township recommendations, including:

- Acquire additional lands for conservation, preservation, and active recreation through the New Jersey Department of Environmental Protection Green Acres Program, the Ocean County Natural Lands Trust Program, the Ocean Township open space trust, developer dedications, and other conservation programs.
- Acquire open space for greenways along stream corridors to create hiking opportunities and to protect the streams and wetlands areas, which ultimately protect the water quality for the community.
- Acquire conservation and access easements to provide linkages between existing local, county, state, and federal open space areas.
- Acquire and develop land for active recreation facilities in close proximity to existing neighborhoods.

All of the objectives and components of the Ocean Township Open Space and Recreation Plan are relevant to this SRPR. Continuing to emphasize the importance of preserving its open space will help the Township be more resilient to future Sandy-type storms.

Amended Land Use Plan Element, 2003

This Amended Land Use Plan Element serves as one aspect of Ocean Township's continuing effort to upgrade and refine its planning documents. The Plan establishes Ocean's long-range

land use planning objectives and serves as a guide for the Township's officials in making decisions about land use and development within the Township. It has been designed to permit growth and development in the Township consistent with state and regional plans. The Plan seeks to update the Township's planning policies in accordance with the State Plan, continue to provide a high quality of life for Township residents, promote environmental protection, and to encourage growth and development where appropriate.

The Plan includes an outline of the Land Use Board's recommendations for changes in zoning, bulk regulations, and design standards based on a review of the previous Land Use Plan.

Waretown Town Center State Plan Endorsement, 2005

In 2005 Ocean Township received Plan Endorsement from the New Jersey State Planning Commission, which included the designation of the Waretown Town Center. This designation legitimized over a decade of planning in Ocean to create a vibrant new mixed-use town center at Waretown. The Waretown Town Center integrates land uses and smart growth planning principles into a comprehensive mixed-use center design. The Waretown TC District has also been designated a coastal town center under the Coastal Area Facility Review Act (CAFRA). The Plan Endorsement and Town Center Designation also included the extension of Volunteer Way to the Garden State Parkway, providing a key evacuation route for new and existing

development in the Township. The Waretown Town Center boundary is depicted in Figure 3.

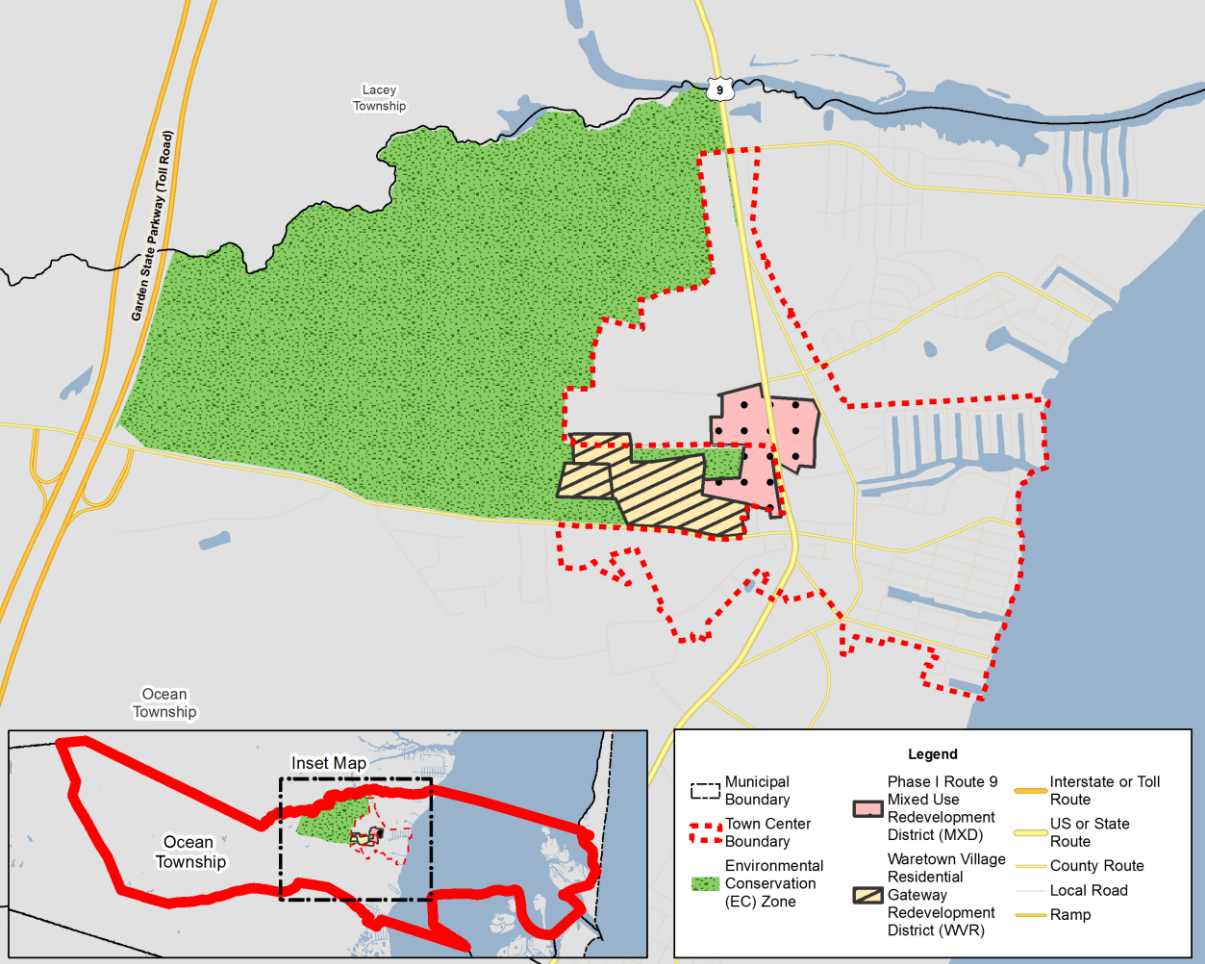
In 2007, the Economic Redevelopment Plan was amended to include the Town Center Conceptual Plan approved by the State Planning Commission.

In 2013, the Township's Economic Redevelopment Plan was further amended to outline more detailed design standards for the Waretown Town Center Redevelopment Area.

In addition to the Waretown Town Center, Ocean Township had undertaken various other redevelopment plans, including the:

- Waretown Village Residential Gateway District;
- Route 9 Corridor Phase 1; and
- Edgemont Park Subdivision

Figure 3: Waretown Town Center Location



Amended Land Use Plan Element, Circulation Plan Element, and Master Plan Reexamination Report, 2005

This Reexamination Report upholds the objectives outlined in the 1999 Master Plan Update. It also provides new objectives specific to the Waretown Town Center, the following of which are relevant to this SRPR:

- Create safe trail linkages between the destination nodes in the center, municipal facilities, elementary schools, and Barnegat Bay (Across Route 9);
- Provide, maintain, and expand utilities, community facilities, and essential services necessary to residents and the Town Center as a whole;
- Protect environmentally sensitive lands and direct growth towards areas of the Township with existing infrastructure.

This Reexamination Report also recommends various changes to the Township's Land Use Plan Element, Circulation Plan Element, and Goals and Objectives section of the Master Plan.

Housing Plan Element and Fair Share Plan, Cycles I, II, and III, 2005 & 2008

The 2005 Housing Plan Element included an inventory of Ocean Township's demographic, housing stock, and employment characteristics, as well as Ocean's affordable housing obligation and growth share projection. The Fair Share Plan included the

compliance plans for COAH Cycles I, II, and III, including the Township's fair share responsibilities based on three components: the rehabilitation component, the recalibrated Cycle I/Cycle II new construction component, and the growth share component.

The 2008 Housing Plan Element includes revisions that Ocean Township prepared in order to conform to COAH's new regulatory and statutory requirements. The plan serves as the Township's response to COAH's Cycle III regulations and outlines Ocean's new growth share obligation. The Plan includes the same base components as the 2005 plan, with demographics, housing stock, and employment characteristics updated based on new data. This plan is currently on file and being reviewed by COAH pending responses by COAH and recent court decisions overturning COAH's growth share methodology.

Land Use Element Amendment- Environmental Conservation and Bayfront Conservation Areas, 2006

This amendment created an Environmental Conservation (EC) district and expanded an existing Bayfront Conservation (BC) district in an effort to focus development from environmentally sensitive areas east of the Garden State Parkway within Ocean Township into the Town Center, which is more appropriate for development. Other benefits include the preservation of the environmental and open space amenities for all residents in the Center and surrounding areas and to create a green belt around the Center to delineate its boundaries.

Municipal Stormwater Management Plan, 2008

This plan documents Ocean Township’s strategy for addressing stormwater-related impacts, including groundwater recharge, stormwater quantity, and stormwater quality impacts. It also includes stormwater design and performance standards for new major development in areas in Ocean Township both inside and outside of the Pinelands Area.

The goals of this plan include:

- Reducing flood damage, including damage to life and property;
- Minimizing, to the extent practical, any increase in stormwater runoff from any new development;
- Reducing soil erosion from any development or construction project;
- Assuring the adequacy of existing and proposed culverts and bridges, and other in-stream structures;
- Maintaining groundwater recharge;
- Preventing, to the greatest extent feasible, an increase in nonpoint pollution;
- Maintaining the integrity of stream channels for their biological functions, as well as for drainage;
- Minimizing pollutants in stormwater runoff from new and existing development to restore, enhance, and maintain the chemical, physical, and biological integrity of the waters of the state, to protect public health, to safeguard fish and aquatic life and scenic and ecological

values, and to enhance the domestic, municipal, recreational, industrial, and other uses of water; and

- Protecting public safety through the proper design and operation of stormwater basins.

To achieve these goals, the Plan does the following:

- Outlines specific stormwater design and performance standards for new development;
- Proposes stormwater management controls to address impacts from existing development;
- Outlines preventative and corrective maintenance strategies to ensure long-term effectiveness of stormwater management facilities;
- Outlines safety standards for stormwater infrastructure to be implemented to protect public safety.

Community Forestry Management Plan, 2008-2012

The mission statement of this Plan is as follows:

To insure the health, safety, and sustainability of Ocean Township’s forest and shade trees for the economic, aesthetic, and environmental benefits provided to Township residents and visitors.

The Plan’s goals include the following:

- To increase the administrative capacity, awareness, knowledge, appreciation, and support for community trees and forests.

- To continue to plant trees to replace those lost and to increase species diversity and success of new plantings.
- To increase public safety and aesthetics by scheduling maintenance and thorough the reduction of hazardous trees.
- To train and educate elected officials, volunteer members of the new Shade Tree Advisory Committee, and parks department employees in community forestry technical and administrative topics.

Floodplain Management Plan, 2012

In 2011 the Township adopted ordinances authorizing the preparation of a Floodplain Management Plan and the creation of a Floodplain Management Plan Committee, consisting of officials responsible for implementing the plan, a local resident for the bayfront hazard area and a professional planner. Plan drafting began in 2012, and it was adopted in April 2012.

The Plan’s objective is to produce a program of activities that can best tackle the Township’s vulnerability to hazards and meet other community needs. The Plan’s goals include:

- Reducing loss from flood damage through codes and standards.
- Educating decision makers and the public about stormwater and floodplain management.
- Coordinating and prioritizing maintenance of the stormwater management system.

The plan also seeks to:

- Ensure that a comprehensive review of possible activities and mitigation measures is conducted so that the most appropriate solutions are used to address the hazard.
- Ensure that the recommended activities meet the goals and objectives of the Township.
- Educate residents about the hazards, loss-reduction measures, and the natural and beneficial functions of floodplains.
- Build public and political support for projects that prevent new problems, reduce losses, and protect the natural and beneficial functions of floodplains.

Emergency Operating Plan

This Plan, approved in 2010, sets forth the general policies and procedures to be carried out by municipal and volunteer entities (such as the Fire Department and EMS) in order to provide the citizens of the Township with an effective integrated emergency response plan designed to minimize the loss of life and property during an emergency. The manual is comprised of the Basic Plan and the following list of annexes providing response plans for such emergency situations as: alerting, warning, and communications; damage assessment; emergency operating centers; emergency public information; evacuation; fire and rescue; hazardous materials; law enforcement; public health; public works; radiological protection; resource management; shelter, reception, and care; social services; and terrorism and weapons of mass destruction.

The purpose of the Emergency Operating Plan is to protect life and property in emergencies by coordinating response activities of municipal and volunteer entities to ensure their optimum use. It provides for actions to be taken to mitigate, prepare for, respond to, and recover from the effects of an emergency. The plan is an “all-hazards” approach to emergency management and covers natural disasters, technological disasters, and national security crises.

The Township utilized the Emergency Operating Plan in its post-Sandy recovery efforts, but it did not cover all recovery and mitigation decisions that had to be made, as it is lacking a mitigation component. The Plan is updated every four years, and is due to be updated in March of 2014. Ocean Township is currently updating this Plan to incorporate updates and revisions based on key lessons learned from Sandy and related post-storm response efforts. Updates will be sent to Ocean County by mid-March 2014 for approval.

Ocean County

Ocean County Comprehensive Master Plan, 2011

The Ocean County Planning Board adopted the Comprehensive Master Plan on December 21, 2011. It is a policy statement about the future development of the County. The objectives of this plan are intended to address issues of regional concern and to provide a regional perspective on land use and other issues facing Ocean County. The plan seeks to provide some coordination

between local planning and state plans and regulations, and it also describes various services and programs that the County provides to its citizens. The plan was created to provide a platform for planners to base their decisions regarding capital improvements, land use, and location and intensity of new development.

For all municipalities in the County, the Comprehensive Master Plan outlines population and demographics, transportation and mobility, housing, land use, agriculture, open space, water resources, wastewater management, solid and hazardous waste, air quality. The Plan makes a number of recommendations on these topics that are relevant to Ocean Township’s recovery from the effects of Superstorm Sandy, and reducing vulnerabilities to future storms. These are outlined below:

- 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 Ocean 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 Ocean 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, in turn, provides extra security and protection during extreme weather events, such as hurricanes and storms.
- 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.
- 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 Ocean Township, will help the county to cope with future hurricanes and storms and mitigate their impacts.
- Continue to support the Ocean County Agriculture Development Board (OCADB) in its mission to protect and enhance the county’s agricultural resources.
 - Preservation of farmland helps to reduce vulnerabilities to storms by protecting and promoting agricultural land uses. Such land uses typically have a very low amount of impervious cover, and consequently support the infiltration of stormwater.
- Maintain an ongoing evaluation of the recreational needs of Ocean County residents, and assist in identifying new park and open space areas, as necessary.
 - Expansion of park and open space areas, particularly in the eastern part of Ocean Township, will help to preserve and protect natural and other areas with low impervious surface cover. This supports the infiltration of stormwater. Additionally, it eliminates the potential that such areas will be converted to residential uses. This helps to restrict population development in areas that may be vulnerable to hurricanes and other storms. It also protects the local and regional economy by guiding non-residential development (such as commercial and industrial uses) away from areas that may be susceptible to disturbance and interruptions caused by extreme weather events.
- Continue to work with all federal, state, local, and non-profit partners to acquire open space and maximize financial resources available for preservation.

- As has been previously noted, 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 to protect Ocean 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 to 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 to 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 to 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 to minimize their impacts and increase their safety. This is particularly important as highways generate stormwater runoff, and may serve as evacuation routes during emergencies.

Ocean County Multi-Jurisdictional All-Hazard Mitigation Plan, 2013

The Ocean County Multi-Jurisdictional All-Hazard Mitigation Plan was developed for the purpose of:

- Providing a blueprint for saving lives and reducing property damage from the effects of future natural and man-made disasters in Ocean County;
- Qualifying the County for pre-disaster and post-disaster grant funding;
- Complying with state and federal legislative requirements related to local hazard mitigation planning;
- Demonstrating a firm local commitment to hazard mitigation principles; and

- Improving community resiliency following a disaster event.

At the time of the preparation of this Strategic Recovery Planning Report, this Ocean County plan has not been formally adopted. The assessment of this plan has been completed for the draft plan, which was submitted by the county’s consultant on December 5, 2013. It is anticipated that Ocean County and each of its 33 municipalities will adopt the plan.

The Multi-Jurisdictional All Hazard Mitigation Plan was developed using a multi-jurisdictional approach to include all municipalities within Ocean County. All jurisdictions needed to and did participate in the multi-jurisdictional planning process in order to have their own plan be eligible for FEMA funding after a disaster. Representatives from Ocean Township (including its clerk, director of community development, emergency management coordinator, and municipal engineer) were involved throughout the plan development process.

This Plan is comprehensive in scope and, in addition to examining the county’s geography and natural environment, economic assets, population, land use, and built environment characteristics, includes a detailed risk assessment. Among the risks contemplated by the Multi-Jurisdictional All-Hazard Mitigation Plan are: natural hazards such as coastal erosion, drought, earthquakes, extreme temperature, flooding, storms (i.e., hurricanes, tropical storms, and nor’easters), tornadoes and windstorms, wildfires, and winter storms (i.e., heavy snowstorms

and blizzards, and sleet and ice storms); human-made hazards such as hazardous materials, nuclear incidents, transportation accidents, urban fire and explosion, and utility interruption; and climate change hazards associated with sea level rise.

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

- Encourage sustainable development to protect people, property, community resources, 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 in order 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 disasters.
 - 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.

As part of the planning process, each municipality in Ocean County identified its risks, and a mitigation strategy was developed to address those risks. The Hazard Mitigation Plan includes detailed action worksheets for each municipality, including assessing the risk, describing required actions, cost estimates, and implementation. The mitigation actions identified for the Township of Ocean include the following actions:

- Continue to participate in the NFIP;
- Continue participation in CRS program and consider upgrading to the next class level;
- Continue to enforce building codes;
- Develop and implement Shelter Management Plans;
- Acquire repetitive loss properties through the Blue Acres Program;
- Relocation of streetlight at Bryant Road;
- Elevate 203 homes;
- Install riprap along the shoreline;
- Maintain Forest Fire website; continue to post updates and share information through site;
- Continue the Community Emergency Response Team (CERT) program;

- Continue the Township’s police outreach programs in schools;
- Continue the Junior Police Academy Program; and
- Continue the ‘We Care’ Program (Ocean County’s program to look out for residents with special needs during emergencies)

The mitigation strategy and municipal actions that have been outlined in the Multi-Jurisdictional All-Hazard Mitigation Plan are generally supportive of and promote Ocean Township’s recovery from the effects of Superstorm Sandy, and the reduction of vulnerabilities to future storms.

Comprehensive Farmland Management Plan, 2008

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, Ocean Township has 16 acres of farmland-assessed property. No portion of Ocean Township 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 Ocean 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 Ocean 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.

Regional Plans

Ocean Township lies in a region of the State that contains 2 regulated areas that require special consideration when development is suggested. Both the Coastal Area Facilities Review Act (CAFRA) zone and the Pinelands National Reserve have a significant effect on the regulation of development and land use in the Township. These specialty regulation areas are designed to limit the negative effects that development has on environmentally sensitive habitats.

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 this plan are designed to promote orderly development of the Pinelands so as to preserve and protect the significant and unique natural, ecological, agricultural, archaeological, historical, scenic, cultural, and recreational resources of the Pinelands.

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.

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.

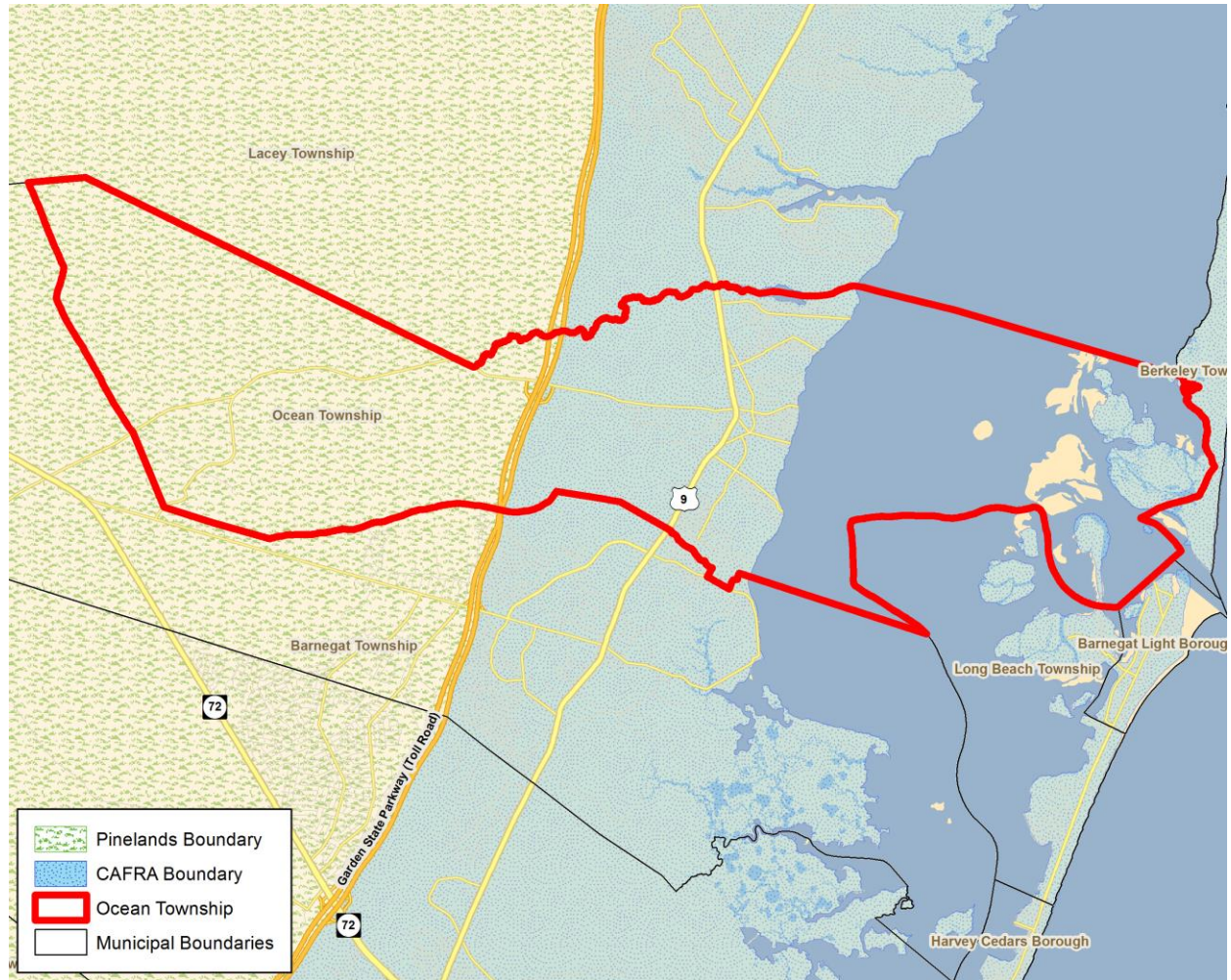
Approximately 8,204 acres in Ocean Township are within the Pinelands National Reserve. This includes all of the Township's land to the west of the Garden State Parkway (see Figure 4). The remainder of the Township's land (the land east of the Parkway, extending to Barnegat Bay and including some small barrier islands) falls within the CAFRA regulatory jurisdiction.

Coastal Area Facility Review Act (CAFRA)

The CAFRA zone applies to development projects near coastal waters from Middlesex County down to Cape May and up again to Salem County. Generally, the closer the project is to the water, the more likely it will be regulated. The CAFRA zone for Ocean Township generally applies to a portion of Township east of the Parkway (see Figure 4). Approximately 5,573 acres of the Township is under the jurisdiction of CAFRA.

The CAFRA divides the area 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, enlargement of buildings, excavation, grading, shore protection structures, and site preparation.

Figure 4: Pinelands and CAFRA Boundaries in Ocean Township



Evaluation of Superstorm Sandy's Impacts on Ocean Township

Superstorm Sandy brought high winds, heavy rains, and a record storm surge which resulted in:

- Flooding of entire neighborhoods and the bay shore area;
- Wind damage to the roofs of the Township building and the community center;
- Town-wide power outages due to downed trees;
- The JCP&L electric substation by St. Stephen's Church on Route 9 went offline; and
- Loss of cell phone power for many residents. Township personnel relied on radios for communication for three straight days. At times radios from the west of the Parkway did not reach the east, causing communication issues.

The storm also deposited vegetative, construction, and demolition debris throughout the Township requiring immediate removal which posed an immediate threat to lives, public health and safety, and improved property, and cost the Township \$591,529.79.

Figure 5: A Downed Tree and Traffic Light



Source: Ocean Township, October 29, 2012.

Figure 6: A Downed Tree and Power Line



Source: Ocean Township, October 29, 2012.

Figure 7: A Downed Tree and Power Line



Source: Ocean Township, October 29, 2012.

Figure 8: Debris from Superstorm Sandy at Bryant Road and Demmy Avenue



Source: Ocean Township, October 29, 2012.

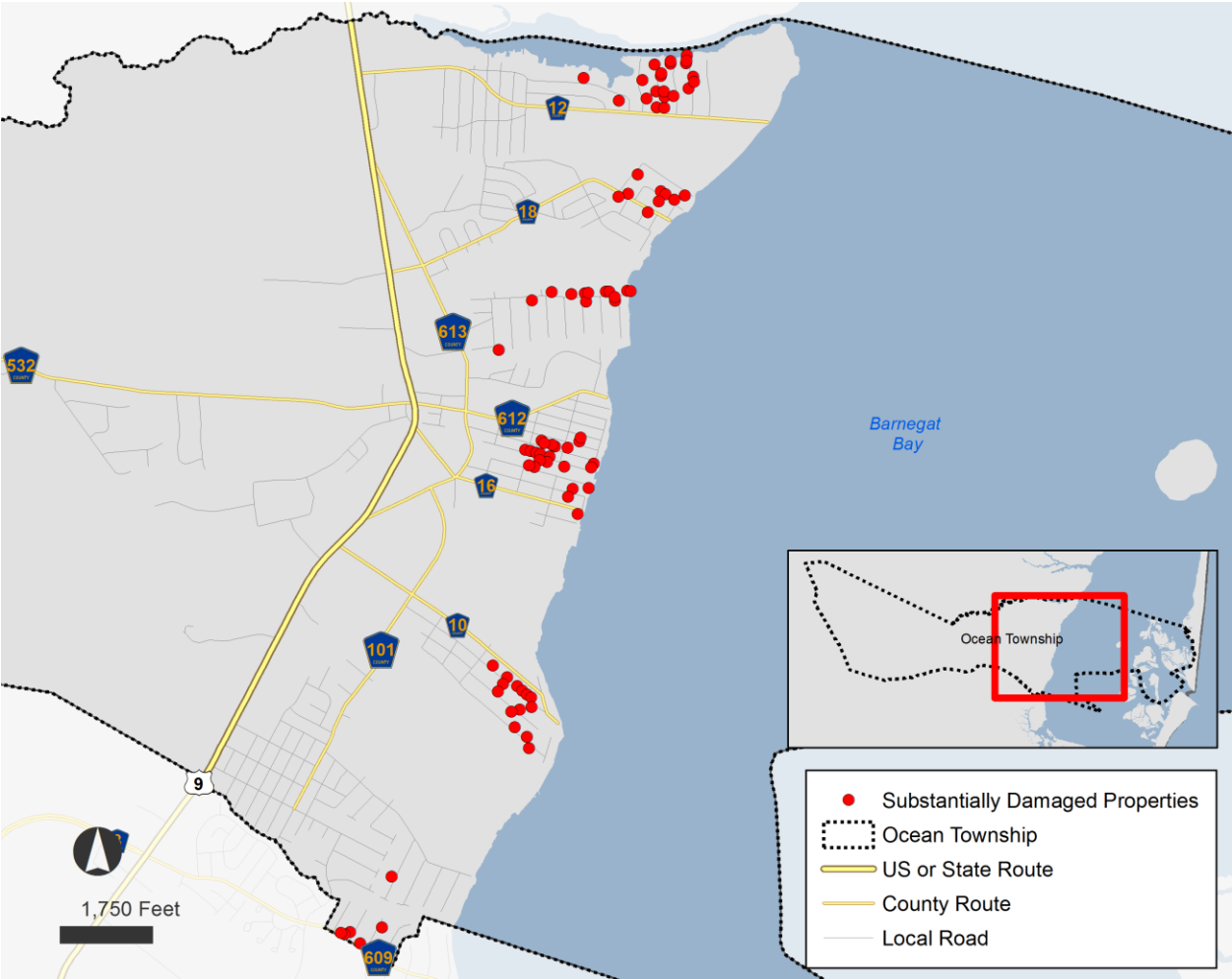
Damage to Properties

The State of New Jersey has analyzed the storm damage to heavily impacted communities, as determined by HUD, and has released the CDBG Disaster Recovery Action Plan. The data has been generated using the 2011 American Community Survey 5-Year Survey Data and FEMA Individual Assistance Data (effective March 12, 2013).

As a result of Superstorm Sandy, one census tract in Ocean Township (census tract 34029733000) sustained “severe” or “major” damage to housing units. This does not include minor damage sustained, which was common. The median household income in this census tract is \$73,917. This census tract has 3,305 households, and 10% of those households faced severe or major damage.

In addition, the Township provided a list of 87 properties with “substantial damage,” which is defined as damage of any origin sustained by a structure whereby the total costs of restoring the structure to its before damaged condition would equal or exceed 50% of the structure market value. Most of these properties in Ocean Township are located to the east of US Route 9 along the Bayfront (see Figure 9). The high distribution of damaged properties in the east of Township may be attributed to the location of many higher-density properties in a low-lying area close to Barnegat Bay.

Figure 9: Substantially Damaged Properties in Ocean Township



Damage to Parks

High winds and a record high storm surge from Superstorm Sandy flooded four of Ocean Township’s parks located on the shore of Barnegat Bay.

At the eastern end of Bryant Road at Barnegat Bay, the area faced damage to its wooden T-dock fishing pier, bulkhead, boardwalk, and gazebo. The entire 90 foot boardwalk and 16 feet of concrete access sidewalk were destroyed from the storm surge.

Figure 10: Destroyed Dock at Bryant Park



Source: Ocean Township, October 29, 2012

Figure 11: Damages at Bryant Park



Source: Ocean Township, November 1, 2012

The bulkhead that protects Tuscarora Park was overtopped by the storm surge. The bulkhead was not damaged, but the area faced the following damages due to erosion:

- Loss of 25,000 square yards of grass-covered, four inch thick topsoil;
- Loss of 277 cubic yards of back fill from behind the northeast corner of the bulkhead, and 123 cubic yards from the middle-west section;
- Loss of 300 linear feet of a 12 foot wide and four inch thick gravel access road; and
- Loss of 300 linear feet of a six foot wide and four inch thick gravel trail along the bulkhead.

Figure 12: Flooding at the Tuscarora Park Area



Source: Ocean Township, October 29, 2012

Figure 13: Flooding at the Tuscarora Park Area



Source: Ocean Township, October 29, 2012

Figure 14: Flooding at the Bay-End of Tuscarora Avenue



Source: Ocean Township, October 29, 2012

The storm also washed out the drainage system at the end of Dollmore Avenue, including filling with sand the 50 foot long 12 inch HDPE outlet pipe that runs from the catch basin on the corner with Sheridan Street to the Bay. Runoff from the heavy rains overwhelmed the blocked pipe resulting in the following damages:

- Washout and loss of one Type A basin;
- Washout and loss of 50 feet of the 12 inch HDPE culvert;
- Washout/erosion of 30 cubic yards of fill; and
- Washout of 55 square yards of 4 inch shoulder material.

Damage to Water Meters

At various sites across Ocean Township, the water system's meters were submersed in saltwater as a result of flooding. This corroded the affected meters' internal electrical connections to the transmitting devices, preventing certain important signals from being read. The following additional damages were reported with regards to water meters in the Township:

- 496 meters were damaged;
- 14 MXUs (meter readout devices) were damaged;
- 9 meter bottoms were damaged; and
- 384 pit pads were damaged.

All of these damaged items are attached to flood-damaged homes that were still not occupied as of July 2013.

Damage to Sanitary Sewer Pump Stations

Five pump stations throughout Ocean Township went offline from Superstorm Sandy damage, including:

- At the intersection of Bay Parkway at Dock Avenue,
- At the intersection of Lighthouse Drive at Anchor Drive,
- At the intersection of Marine Road and Lagoon View Road,
- At 262 Bayshore Drive, and
- At 225 Seneca Boulevard.

Community Vulnerabilities Exacerbated by Superstorm Sandy

Superstorm Sandy exacerbated the vulnerability of homeowners and business owners located in low-lying areas in close proximity to the flooded waterways that border and run through Ocean Township. The loss of power exposed residents to the dangers of cold fall nights. Furthermore, the damage to the pump stations threatened the health of residents by failing to prevent the backflow of raw sewage into flooded Township streets.

Other vulnerabilities that Ocean Township faces include:

- The land to the east of Route 9 is mostly built out, and the Township faced limited options for relocating debris. In the event of another storm, the Township would have minimal land to dump debris;
- The building that houses the zoning and construction departments has no generator;
- The Township Hall's generator is 30 years old; and
- The Township's community center has no generator and is in a flood zone.

Furthermore, the storm has also exacerbated the Township's vulnerability to Barnegat Bay. Land on the Bayshore of Ocean Township has been taken away by the bay over the past 30 years, and this erosion was further exacerbated by Superstorm Sandy. At the end of Bay Parkway along Barnegat Bay, the road has been partially eroded. This poses emergency problems for the single house located all the way at the end of the street. If a fire truck or

other emergency vehicle needed to reach the end of Bay Parkway, it would never be able to turn around because of the erosion, and would have to back up before reaching the next available street to turn around.

Community Opportunities Created by Superstorm Sandy

The impacts of Superstorm Sandy have shed light on the areas in which Ocean Township may improve its resiliency in future storm events by:

- Promoting public awareness of hazard mitigation and resiliency issues;
- Focusing public agencies on community vulnerabilities to hazards such as flooding;
- Encouraging regional solutions to flood- and storm-related impacts;
- Ensuring that future capital projects are designed and constructed to incorporate features that are resilient to storm- and flood-related impacts.

Current Status of Post-Sandy Recovery Efforts

Municipal Efforts

In the days and weeks following Superstorm Sandy, Ocean Township took the following emergency protective measures:

- Evacuated stranded residents, barricaded flooded roads and hazards, and patrolled evacuated neighborhoods to prevent looting;
- Prevented further damage to roads and public properties by purchasing stone fill to fill in washed out sections of roads and to maintain access to neighborhoods;
- Connected portable generators for temporary power at the police station to maintain communication and at critical intersections;
- Prevented failure of the bulkhead at Crystal Point Park by moving washed out sand from one side of the bulkhead back to the correct side;
- Connected portable generators to allow utilities to function;
- Inspected all flooded and damaged buildings for structural stability, electrical and plumbing status, and health and safety compliance in order to determine if they were safe to reoccupy. This action was performed under shared services agreements with Barnegat Township.

The Township has estimated that the cost for these joint projects was \$368,333.63.

Other general recovery efforts that Ocean Township undertook immediately following Superstorm Sandy include the following:

- Relaying most information to the public via the Township website, which it updated regularly;
- Sending residents to a joint temporary shelter at Barnegat High School;
- Briefings in 12 hour increments between The DPW and Police Department about the status of recovery work and other important updates, with a central location out of the emergency operations center; and
- Bringing in state code officials that assisted in the permit review process and in deeming houses habitable.

In addition, Ocean Township adopted Ordinance 2013-13, amending Chapter 18 “Zoning” of the Township Code. This ordinance changed definitions of “building height” for properties located in a Flood Hazard Area (FHA), “building area,” “decks,” and “impervious coverage,” and added the definition of “balcony.” This ordinance also amended building restrictions for tool and utility sheds, decks, and exterior stairs and unroofed porches.

Community Development Block Grant (CDBG) Disaster Recovery Programs

Ocean Township has also received recovery aid from various federal funding programs. The NJ Department of Community Affairs has put together an online database of CDBG programs that have aided in Superstorm Sandy recovery across New Jersey, updated as of March 20, 2014. Ocean Township's residents have been awarded \$22,366,612 from the following housing programs:

Homeowner Resettlement Program (HRP): \$180 million in federal funds have been allocated to support a Homeowner Resettlement Program designed to encourage homeowners to remain in the nine most impacted counties (Atlantic, Bergen, Cape May, Essex, Hudson, Middlesex, Monmouth, Ocean, and Union) that were severely impacted by Superstorm Sandy. The funds may be used for any non-construction purpose that assists the Homeowner to remain in, or return to, the county in which they lived prior to Superstorm Sandy.

In Ocean Township, 46 low- to moderate-income housing units and 69 urgent need units were awarded grant monies through the HRP, totaling 115 housing units for the Township. With a grant amount of \$10,000 per household, \$1,150,000 has been awarded to Ocean Township, all of which has been disbursed as of March 20, 2014.

Homeowner Reconstruction, Rehabilitation, Elevation, and Mitigation (RREM): \$600 million in federal funds have been allocated to help eligible primary homeowners repair or rebuild

their Superstorm Sandy impacted homes. The RREM program will assist homeowners in rehabilitation, reconstruction, elevation, and mitigation so that they can do the necessary work on their homes to make them livable and to comply with requirements for structures located in flood plains. RREM provides grants to eligible Homeowners up to \$150,000. The RREM program is intended to "fill the gap" between the cost of repairs and other funds the owner has received to repair the structure.

In Ocean Township, 30 low-to-moderate income housing units and 11 urgent need units were awarded funding through the RREM program, totaling 41 housing units for the Township. With an average award of \$100,000 per application, \$4,100,000 has been awarded to Ocean Township. As of March 20, 2014, none of this money has been disbursed yet.

Small Rental Properties/Landlord Rental Repair Program (LRRP): This program provides up to \$50,000 per unit in grant funding assistance to eligible owners of rental property from 1 to 25 units. The LRRP program will provide funds to help rental property owners restore their properties through rehabilitation, reconstruction, elevation, and mitigation to rental property damaged by Superstorm Sandy. The LRRP program is intended to help existing owners restore their properties and receive reimbursement for eligible building expenses incurred by owners prior to the LRRP implementation but not paid for by other programs.

In Ocean Township, 3 units have been awarded funding through the LRRP, totaling \$90,000 for the Township. As of March 20, 2014, none of this money has been disbursed yet.

Fund for Restoration of Large Multi-Family Housing (LMF): This program provides funding to qualified developers to leverage 9% and 4% low income housing tax credits, tax-exempt bonds, and stand-alone financing to support the development of rental housing in affordable or mixed-income projects. Development may include new construction, conversion of vacant commercial/industrial buildings, or substantial rehabilitation of uninhabitable dwellings. The allocation for this activity is \$179,520,000 statewide. Ocean Township has been awarded \$17,026,612 in LMF money, though none of it has been disbursed as of March 20, 2014.

Small Business Administration Disaster Loans

In the months following Superstorm Sandy, the Small Business Administration (SBA) has been issuing loans to homeowners and businesses in New Jersey to aid in their recovery and reconstruction efforts. NJ.com has compiled data from the SBA and made it available on their website. As of February 2013, Ocean had received 29 home loans totaling \$2,249,800 and 2 economic injury disaster loans in the amount of \$84,900.

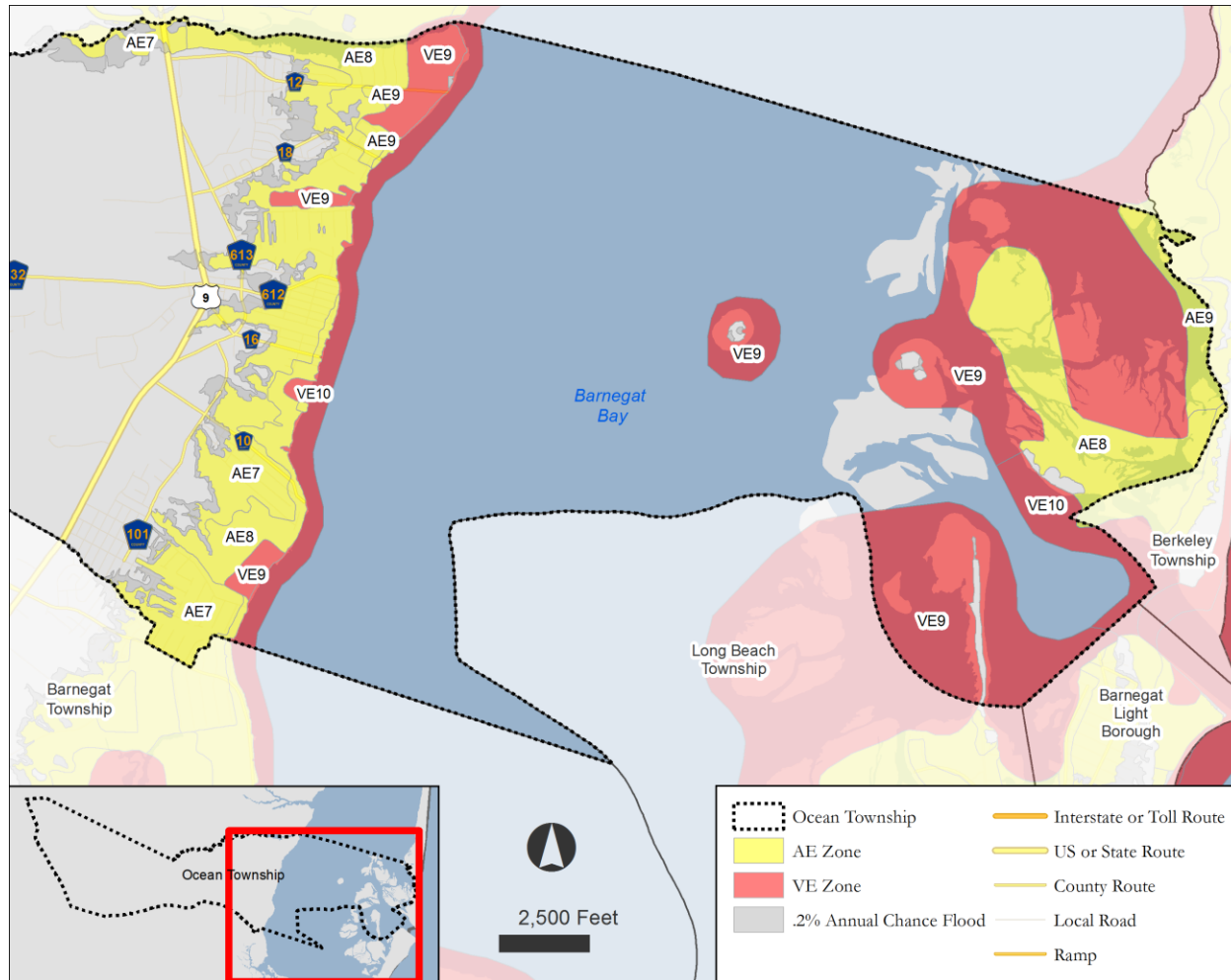
FEMA’s Hazard Mitigation Grant Program (HMGP) Elevation Program

This is a \$100 million reimbursement grant program set up to assist homeowners elevate their homes after Superstorm Sandy. The HMGP elevation program provides up to \$30,000 of reimbursement for eligible homeowners to elevate their primary single-family residences. The program is being paid for by FEMA funds. The application period for homeowners closed on September 15, 2013. The purpose of this project is to reduce the risk of damage to properties and their contents in the event of major flooding. It may also provide a significant reduction in flood insurance premiums compared to structures that are not elevated.

Residential Elevation of 203 Homes

Ocean applied for funding to elevate 203 homes. 135 of the homes are located in the Coastal “AE” Flood Zone, while 67 are located within the “VE” Velocity zone on the Preliminary Flood Insurance Rate Maps (FIRMs) that were established by FEMA and adopted by the State of New Jersey after Superstorm Sandy. The Coastal Floodplain Boundaries Preliminary Work Map with flood elevations is depicted in Figure 15.

Figure 15: Preliminary Flood Insurance Rate Map (FIRMs) Elevations in Ocean Township



The goal of this elevation project is to protect lives and property from flood inundation and hazards, to reduce the need for emergency services during flood events, and to reduce or eliminate repetitive flooding of these homes thereby reducing claims under the National Flood Insurance Program. This project will mitigate the repetitive flooding of the structures by elevating the house above flood areas.

The proposed mitigation measures will cost \$150,000 per residential structure pursuant to federal prevailing wage standards. The Township requested \$22,837,500.00 (75 percent of the total project cost of \$30,450,000.00) for the 203 houses. Individual homeowners would be expected to provide the remaining 25 percent of the total cost.

Park Improvements

Ocean Township applied for a FEMA grant for improvements to Tuscarora Park and Dollmore Avenue areas. The application consists of replacing the following amenities at Tuscarora Park:

- 2,500 square yards of four-inch thick topsoil;
- 277 cubic yards of back fill from behind the bulkhead;
- Replacing 400 cubic yards of the four-inch thick gravel access road; and
- Replacing 200 square yards of the four-inch thick gravel trail along the bulkhead.

This application also consists of the following work at Dollmore Avenue:

- Replacing one Type A basin;
- Replacing 50 feet of the damaged 12 inch HDPE culvert;
- Excavating and replacing 30 cubic yards of fill that was eroded; and
- Replacing 55 square yards of 4 inch shoulder material

The cost estimate of this joint project is \$38,472.22.

Another FEMA application involved improvements to the Bryant Park area. The wooden T-dock, bulkhead, boardwalk, and gazebo are to be repaired to their pre-disaster condition. The estimated total cost of this project is \$192,937.24.

Water Meter Improvements

The Township also applied to replace and repair the damaged water meters and parts, including all 496 damaged meters, 14 MXUs (meter readout units), 384 damaged pit pads, and 9 meter bottoms. This work, along with necessary time, labor, and equipment, has an estimated total cost of \$102,572.04.

Emergency Generator Replacement Project

The Township requested funding from the New Jersey Environmental Infrastructure Financing Program to finance the purchase and installation of new emergency generators and the relocation of an existing generator. The two new generators are for existing sanitary sewer pump stations that were damaged or failed after Superstorm Sandy hit Ocean Township. These new generators will be trailer mounted and towable. One towable

emergency generator will be used and stored at the Dock Avenue Pump Station site. The second new generator will be stored at the Municipal Complex, but used for the remaining sanitary sewer station as it is needed. Construction for these emergency generators is expected to start in December of 2014 and end in April of 2015.

Participation in FEMA’s Community Rating System

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.

Ocean Township’s CRS participation status was at a Class 10 level in 2012. As of May 1, 2013, the Township’s participation has increased to a Class 6. At the Class 6 level, Ocean Township’s residents living inside the Special Flood Hazard Area (SFHA)

receive a 20% discount on flood insurance premiums, and those living outside the SFHA receive a 10% discount. The rapid increase in Ocean Township’s CRS participation level since 2012 is among the best of New Jersey municipalities, and speaks to the Township’s commitment to resiliency and response to future storms.

Community Involvement

FEMA conducted a public information session for residents of both Ocean and Barnegat Township on February 23, 2013 at Barnegat High School. Issues discussed and explained to the public involved some of the various assistance programs discussed in this SRPR, such as the National Flood Insurance Program, the Hazard Mitigation Grant Program, and the Small Business Administration financing programs. At this meeting, residents of both Townships had the opportunity to discuss any concerns or issues regarding their individual storm recovery work.

Additional community involvement actions that this SRPR considers include: a steering committee with participating Township personnel to discuss priority recovery, response, and resiliency actions, and a noticed public meeting for Ocean Township residents to discuss public input for this SRPR.

Ocean County Long Term Recovery Group

The Ocean County Long Term Recovery Group (OCLTRG) seeks to provide a coordinated recovery effort to the victims of disasters affecting Ocean County by identifying and assisting

households affected by the disaster who do not have adequate personal resources for basic needs and recovery. The group's priorities include the following:

- Individuals and families who need assistance to maintain or obtain safe, sanitary, and secure housing, and who:
 - Are not served or are underserved by other existing aid programs, including people who are ineligible for FEMA.
 - Are experiencing economic hardship in pursuing a plan for recovery.
 - Are isolated or have difficulty accessing services.
 - Have begun the recovery process but have encountered a setback and need assistance with their continued recovery.
 - Need assistance in order to prevent deterioration in their continued recovery.
- Landlords of owner-occupied residential rental property of four units or less when such assistance will provide safe, sanitary, and secure housing that will be affordable and permanent for the owner-occupant and his or her residential tenants.
- Landlords of non-owner occupied residential property of three units or less when such assistance will provide safe, sanitary, and secure housing that will be affordable and permanent for residential tenants.

There is no publicly available data regarding OCLTRG's recovery aid in Ocean Township, but aid from this group remains available for Ocean's residents.

Rebuilding Approaches That Will be More Resistant to Damage from Future Storms

The recovery efforts previously mentioned all serve as rebuilding approaches that Ocean Township is taking to be more resilient in the future. They serve to protect residents from the dangers of potential storm events by providing a solution to damaged services. The Township also may consider the following rebuilding approaches in its recovery efforts:

- Rebuilding and renovating homes and structures in accordance with flood hazard and construction codes.
- Elevating emergency generators of pump stations and key community facilities above the base flood elevation.
- Educating residents and builders about flood hazards and flood-resistant provisions in codes.
- Protecting natural areas that currently buffer developed areas from storm damage and storm surge.

Recommended Municipal Actions to Promote Recovery from Superstorm Sandy and to Reduce Vulnerabilities to Future Storms

Ocean Township has discussed several capital and programmatic improvements in order to storm harden the Township's infrastructure and to improve the response during a catastrophic event. These actions have been categorized into the immediate/short-term range (within the next 12 months) and mid- to long-term range (within the next 36 months). However, the various actions presented could be changed between the short- and long-term as opportunities arise and funding becomes available. For example, the actions identified as long-term priorities could be completed within 12 months if funding becomes available.

Immediate/Short-Term Range

Ocean Township has several immediate needs. In particular, the Township should focus on the following capital improvements:

- Stabilizing the bay shoreline by installing riprap;
- Installing new generators at Township Hall, the Department of Public Works complex, the building that houses the Construction and Zoning Departments, and the first aid building;
- Creating a Township Debris Management Plan including such components as allocating debris removal sites, collection strategies, and debris reduction methods; and
- Providing more radios for emergency communication.

The Township should also make updates to its Master Plan. The last time the Master Plan was updated was in 2005. It is essential for Ocean Township to amend the goals, objectives, and key elements of the comprehensive Master Plan to address post-Sandy strategies and policies including, but not limited to, hazard mitigation and community resiliency. This effort will include the preparation of up-to-date mapping of current land uses, new FEMA floodplain and wetland mapping, critical community facilities, and important natural resources areas.

Ocean would also like to install a town-wide Supervisory Control and Data Acquisition (SCADA) system throughout the Township in conjunction with its owned and operated facilities (including at pump stations, Township Hall, the Police Department, fire houses, etc.) to communicate critical alarms to a centralized location or operational personnel. 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 will help protect the environmental quality of the Township by preventing sewer spills into local waterways. The SCADA also will monitor fire, security, power failures, and generator operations for the Township.

The Township also needs to automate and update its system for processing zoning and construction permits. The construction

office currently uses laptops in this process, which has not proven to be the best tool for streamlining the office's work. An upgraded permit program in which inspectors receive and manage permits using state of the art technology such as electronic tablets would significantly increase the Township's efficiency in this task and in recovering from future storm events.

Mid- to Long-Term Range

At the mid- to long-term range, the Township should review its zoning in its waterfront development districts located in redevelopment areas. This should involve determining if the existing zoning is appropriate, or if it should be revised or updated to promote sustainable development and resiliency to future Sandy-type storms.

The Township plans to prepare a Capital Improvement Plan that will identify needed municipal investments in public facilities, fleets, and equipment to build community resiliency in plants and equipment.

Ocean Township also should update its Floodplain Management Plan

Ocean Township would also like to develop a GIS database and user interface to catalog and inventory all infrastructure owned by the Township, including roadways, its stormwater collection system, and its sanitary sewer collection system. This effort would include up-to-date GPS mapping of the utility infrastructure for both systems, inventory and classification of the road network to

build a Township-wide capital improvement plan, and digitizing the tax maps.

The aforementioned GIS database and user interface would also be developed to include essential residential and commercial property information. This could include, but not be limited to, zoning permit application data, building permit application data, number of occupants, age of occupants, dog and cat license information, and fire arm permit information. Linking the GIS into the automated zoning and construction permit system will provide real time data to officials and inspectors in the field. This system will be more cost effective and will increase the Township's operating efficiencies.

In addition, the Township seeks to compile low-elevation aerials to produce high-quality aerial mapping with 6" contour levels within identified special flood hazard areas. This mapping would allow the Township the ability to complement the FEMA flood maps with the best available topographic information and to better delineate the FEMA flood elevations for buildings.

The combination of the GIS database/user interface with the compilation of low-elevation aerials/mapping will improve community resiliency by providing a geographic foundation to highlight at-risk areas that need to be addressed. The identification of these areas will complement Ocean Township's current participation in the revision of the Ocean County Multi-Jurisdictional Natural Hazard Mitigation Plan. It can also provide

the basis for updating the Township’s Emergency Operating Plan.

The Township also would like to continue to increase its participation in FEMA’s Community Rating System (CRS) program and improve its rating, if grant monies are available. Along with increased participation and an improved rating, Ocean Township seeks to promote education and awareness among residents about the Township’s CRS involvement and what that means for homeowners within the Township.

As part of these planning efforts, the Township will also evaluate the relevancy of green infrastructure techniques and engineering controls that could further enhance resiliency within the Township.

Summary of Actions and Priorities

The recommended actions for Ocean Township serve as a comprehensive approach to both recovering from Superstorm Sandy and reducing vulnerabilities to future storms.

Immediate/Short-term needs include:

- Stabilizing the bay shoreline by installing riprap;
- Installing new generators at Township Hall, the Department of Public Works complex, the Construction and Zoning building, and the first aid building;
- Allocating a place for Township debris removal;
- Providing more radios for emergency communication;
- Updating the Comprehensive Master Plan;
- Installing a town-wide SCADA system; and
- Automating and upgrading the zoning and construction permit program.

Mid- to Long-term needs include:

- Reviewing and updating zoning in the waterfront development districts as it relates to resiliency;
- Preparing a Capital Improvement Plan identifying needed capital investments in public facilities to improve local resiliency;
- Updating the Floodplain Management Plan;
- Developing a GIS database/inventory of Township-owned infrastructure;

- Compiling low-elevation aerial mapping of identified special flood hazard areas;
- Continuing to increase participation in FEMA’s CRS program, including improving the Township’s rating;
- Promoting education and awareness among residents about the Township’s CRS involvement; and
- Evaluating the relevancy of green infrastructure techniques and engineering controls that could further enhance resiliency within the Township.

Based on the foregoing priorities, the Township will be seeking additional funding from the NJ Department of Community Affairs as part of the Post Sandy Planning Assistance Grant Program (PSPAGP) for the following activities eligible for funding under the program:

- Updating the Comprehensive Master Plan;
- Automating and updating the zoning and construction permit program;
- Reviewing and updating zoning in the waterfront development districts as it relates to resiliency;
- Preparing a Capital Improvement Plan identifying needed capital investments in public facilities to improve local resiliency as described above;
- Updating the Floodplain Management Plan; and
- Developing a GIS database and low elevation aerial mapping to support future planning efforts.

All of the foregoing will help the Township improve resiliency by improving the Township’s knowledge base, establishing clear procedures and protocols for addressing future emergencies and facilitating restoration, and creating a comprehensive planning framework that will enhance the resiliency and sustainability of the Township and minimize the impacts of future storm events.

Filler