



# Keansburg Borough



## Strategic Recovery Planning Report

# Keansburg Borough Strategic Recovery Planning Report

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Prepared by:



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*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 Keansburg Borough from both storm surge and wind damage. Protective dunes were breached by storm waters at four separate locations, and 2.6 miles of dunes were substantially damaged or washed away. Flood waters ranging from two to six feet in depth inundated approximately 50 percent of the structures in the Borough. Five (5) homes were destroyed by Superstorm Sandy and 347 were substantially damaged. Approximately 40,400 cubic yards of storm damage debris littered the Borough. Trees and power lines throughout the Borough fell. The Borough also faced total power outages for up to 14 days. This list of impacts that Superstorm Sandy had on Keansburg is not exhaustive; the remaining impacts are extensive and will be identified and discussed throughout this Strategic Recovery Planning Report.

Both in preparation for and in response to Superstorm Sandy, Keansburg Borough's actions have been comprehensive. Before and during Superstorm Sandy's landfall, Keansburg evacuated residents and rescued stranded residents. In the days and weeks immediately following Superstorm Sandy, Keansburg barricaded flooded roads and hazards, patrolled the community, secured evacuated areas, deposited 40,400 cubic yards of storm-related debris in a temporary staging area, and performed inspections of 1,804 homes and 61 commercial properties in order to determine which properties were safe for habitation.

In the weeks and months following Superstorm Sandy, Keansburg has taken the following recovery actions (some of which are ongoing and continue to date): Demolished 84 homes; elevated four (4) homes (while 40 more homes are in the process of being elevated); applied for FEMA grants to repair and improve heavily damaged roads, parks, the shorefront parking areas, among other grants; temporarily relocated the Police Department out of its damaged building in a flood hazard area; and held various public meetings for residents regarding recovery options and assistance.

Keansburg Borough'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 Borough's Master Plan Elements; automating and updating the zoning and construction permit process; renewing efforts to make the Route 36 Corridor redevelopment area a priority; permanently relocating the Police Department; demolishing the remaining homes that serve as hazards to public health and safety; preparing a Capital Improvement Plan; and developing a GIS database to support future planning and capital programming efforts.

## Acknowledgements

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## Introduction

This Strategic Recovery Planning Report (SRPR) will serve as a blueprint to guide Keansburg Borough’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 Keansburg and addresses 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 Keansburg Borough

Keansburg Borough is located in northern Monmouth County. It is bordered to the north by over two miles of beachfront and dunes along Raritan Bay and Sandy Hook Bay, to the west by the Waackaack Creek (across which lies Hazlet Township), to the south by Route 36, and to the east by Middletown Township (as seen in Figure 1).

Keansburg's land area consists of approximately 1 square mile of land, of which 450 acres (0.7 square mile) drains into the Raritan/Sandy Hook Bay via six existing drainage outfall pipes. The remaining area (0.3 square mile) drains via various storm inlets and piping to a series of small outlet pipes that discharge directly into Waackaack Creek.

As Keansburg is a Bayshore community, it is low lying and is subject to flooding from surface runoff, tidal events, and hurricanes and tropical storms. Flooding in the Borough is also adversely affected by tidal action in the Raritan Bay, and the Borough experiences severe coastal erosion. Roughly 98% of the Borough's land is located in a flood hazard area, and this includes majority of the Borough's buildings and key community facilities, as seen in Figure 2.

Keansburg has a population of approximately 10,097 (according to the U.S. Census Bureau's American Community Survey 2012 estimate) and 4,372 housing units, which have both decreased

since the 1990s. These estimates do not take into consideration changes in population as a result of Superstorm Sandy.

Land use in Keansburg is mainly residential with single family homes being the predominant residential building type. Only approximately 6.4 percent of land in Keansburg is vacant. The Borough also has 22 acres classified as a critical environmental site, covering its entire waterfront. Commercial activity in Keansburg is located primarily in the downtown area surrounding Main and Church Streets and near the waterfront at the end of Carr Avenue. The main commercial attraction in Keansburg is the amusement/water park along the waterfront near Point Comfort.

In 2005 the entire Borough of Keansburg was designated as an area in need of rehabilitation. This allows the Borough to proceed with redevelopment plans without the use of eminent domain.

Furthermore, the entire Borough is in the Coastal Area Facility Review Act (CAFRA) zone. The CAFRA zone applies to development projects near coastal waters, and generally the closer an area is to the coast, the more heavily it is regulated by CAFRA law. 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 1: Regional Location

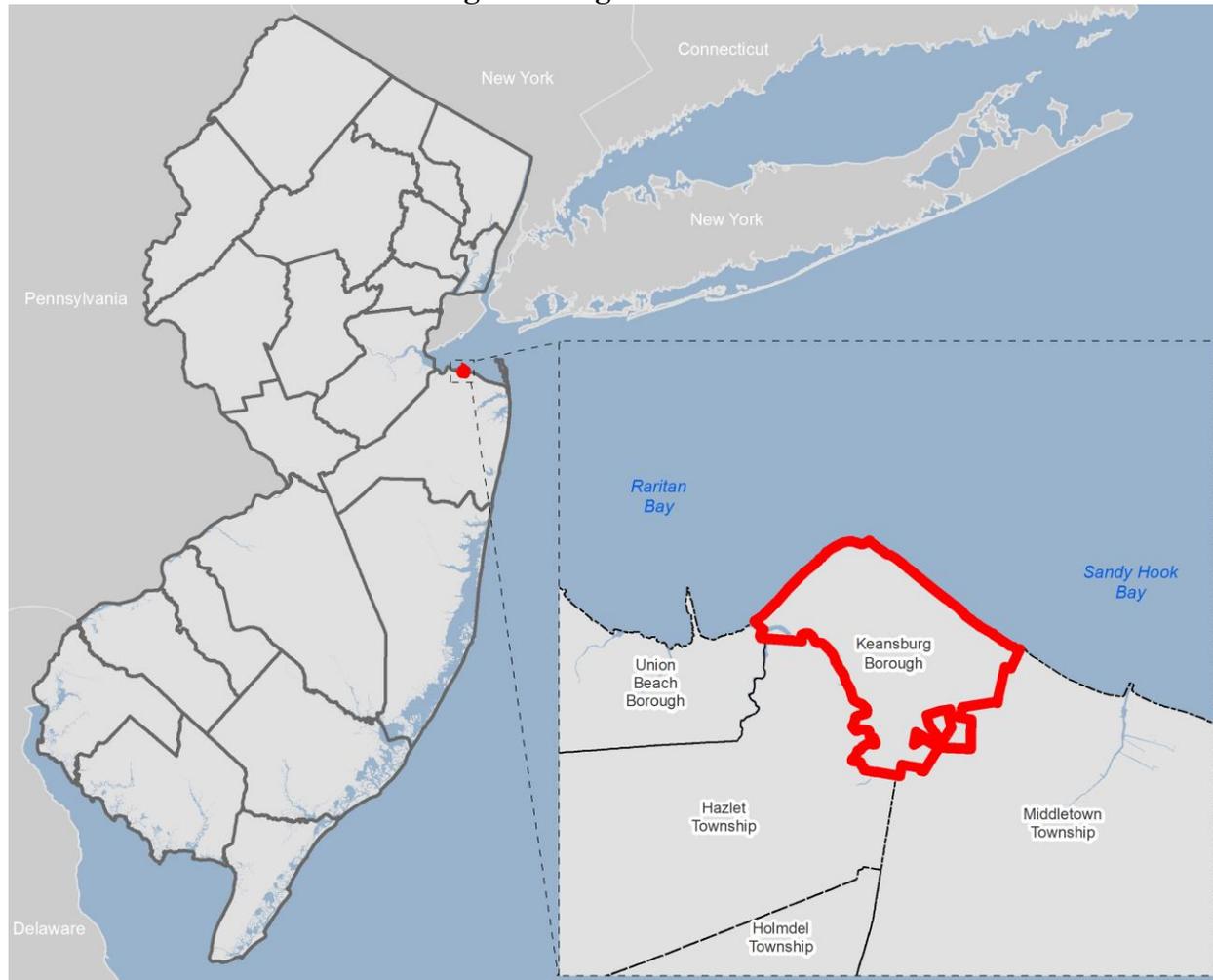
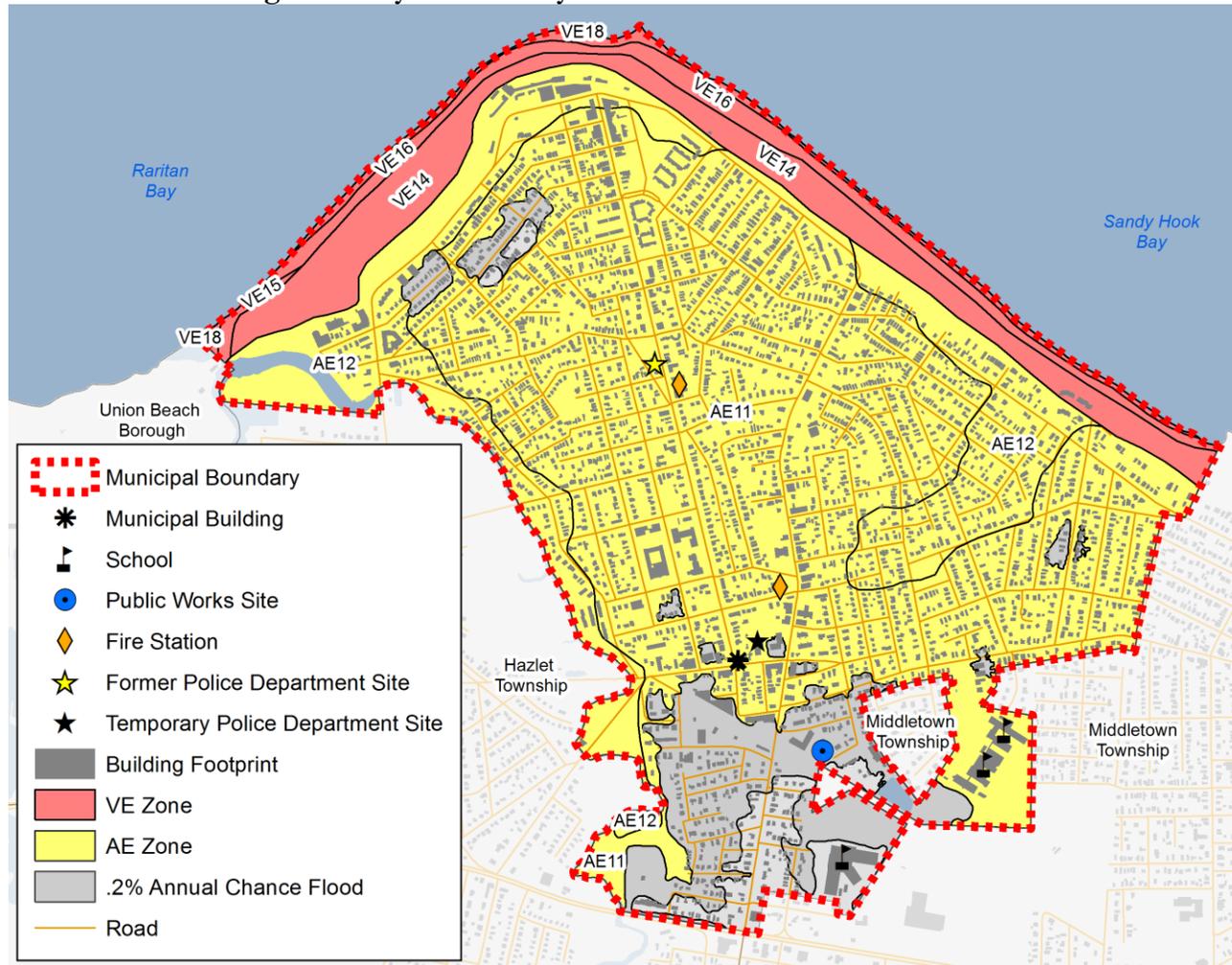


Figure 2: Key Community Facilities and Flood Hazard Areas



## Assessment of Existing Planning Documents

### Keansburg Master Plan, 1988

The following objectives and recommendations that were identified in the Land Use Plan Element at the time of the 1988 Master Plan are relevant to this Strategic Recovery Planning Report:

- Secure public safety from fire, flood, panic, and other natural and man-made disaster with particular emphasis on preserving and maintaining the integrity and protective features of the Borough beach-dune system.
- Develop and maintain a satisfactory level of public facilities and services.
- Establish appropriate population densities and control the intensity of development to ensure neighborhood, community, and regional well-being and to preserve the natural environment.
- Provide sufficient space in appropriate locations for residential, recreational, commercial, and open space use.
- Protect wetlands and areas with scenic, cultural, and recreational values.

The 1988 Master Plan also outlines a Bayfront Development policy statement as follows: Guide waterfront development, which protects the public need for shore protection and flood control, visual and pedestrian access to the waterfront, recreation

and open space, and economic development. The Borough should encourage appropriate use of waterfront locations and coordinate its efforts with the County’s plan to improve waterfront access along the Raritan Bayshore.

Also regarding the Bayfront Development planning issues, the 1988 Master Plan also states,

“Keansburg’s bayfront is an invaluable resource which must be managed to assure that the community benefits from the Borough’s waterfront location. These benefits can best be secured by guiding waterfront development in accordance with an overall plan which protects the public need for shore protection and flood control, visual and pedestrian access to the waterfront, recreation and open space, and economic development.”

Land Use Plan recommendations identified in this Master Plan include:

- Allow for innovative redevelopment of commercial recreation areas that distributes to the community’s economic base and to the waterfront’s potential for recreation. Such redevelopment may encompass mixed-use development, which combines residential, retail, restaurant, entertainment, and marina uses.
- Any structures located within a flood hazard area must satisfy flood-proofing and construction requirements as well as underlying zoning district and land use requirements.

### Master Plan Reexamination Report, 2003

The 2003 Master Plan Reexamination Report identified objectives and recommendations outlined in the 1988 Master Plan and explained how they were still valid, or how they had changed by 2003 (in italics).

- Secure public safety from fire, flood, panic, and other natural and man-made disaster with particular emphasis on preserving and maintaining the integrity and protective features of the Borough beach-dune system.

*The Borough has emphasized preserving and maintaining the beach-dune system. The upgrade to certain areas of the Storm Water system has further minimized the public risk from fire, flood, panic, and other natural and man-made disasters.*

- Develop and maintain a satisfactory level of public facilities and services.

*The Borough has provided an increased level of public services and is dedicated to continuing the efforts to improve public facilities.*

- Establish appropriate population densities and control the intensity of development to ensure neighborhood, community, and regional well-being and to preserve the natural environment.

*The Borough Council and Planning Board have attempted to control development to an appropriate density without jeopardizing the well-being of the community and the natural environment. This remains an objective of the Borough.*

- Provide sufficient space in appropriate locations for residential, recreational, commercial, and open space use.

*Providing sufficient space in appropriate locations for residential, recreational, commercial, and open space use remains a goal of the Borough.*

- Protect wetlands and areas with scenic, cultural, and recreational values.

*The Borough has been committed to guiding development away from areas with ecological, scenic, cultural, and recreational values.*

The 2003 Master Plan Reexamination Report also identified Land Use Plan recommendations that were outlined in the 1988 Master Plan and explained how they were still valid, or how they had changed by 2003 (in italics).

- Allow for innovative redevelopment of commercial recreation areas that distributes to the community's economic base and to the waterfront's potential for recreation. Such redevelopment may encompass mixed-use development, which combines residential, retail, restaurant, entertainment, and marina uses.

*The redevelopment of commercial recreation areas that contributes to the community's economic base remains a topic of concern to the Borough. With the exception of the improvements to the amusement and water park area, there has been very little accomplished in the matter of redevelopment or mixed-use development, which would contribute to the community's economic base. It should remain the Borough's intention to explore the opportunities associated with mixed-use development and other commercial and recreational uses that could enhance the waterfront's potential.*

- Any structures located within a flood hazard area must satisfy flood-proofing and construction requirements as well as underlying zoning district and land use requirements.

*Efforts to regulate and restrict any structures located within the Flood Hazard Area have been exercised by the Borough through local building codes and FEMA requirements administered by the Borough's building inspector.*

In addition to the recommendations mentioned above, the 2003 Master Plan Reexamination offered the following recommendations concerning incorporation of redevelopment plans:

- A study should be considered for the Main Street, Beachway, and Carr Avenue Commercial Districts as well as the residential district near the beachfront between Carr Avenue and Laurel Avenue to determine if these areas can be classified as areas in need of redevelopment.
- A study should be considered to explore the possibilities of designating the areas of the Borough as redevelopment areas with special attention on the waterfront.
- A petition should be submitted to the State Planning Commission for plan endorsement and Center designation.

### **Master Plan Reexamination Report, 2012**

The 2012 Master Plan Reexamination Report identified objectives and recommendations outlined in the 1988 Master Plan and

explained how they were still valid, or how they had changed by 2012 (in italics).

- Secure public safety from fire, flood, panic, and other natural and man-made disaster with particular emphasis on preserving and maintaining the integrity and protective features of the Borough beach-dune system.

*The Borough has continued to preserve and maintain the beach-dune system. Improvements in the storm water management system recently undertaken by the Borough will assist to minimize flooding and drainage problems. The Borough Department of Public Works cleans and maintains the beach area. An annual permit is secured from the NJ Department of Environmental Protection to permit the beach cleaning activities.*

- Develop and maintain a satisfactory level of public facilities and services.

*Keansburg is committed to providing the best public facilities such as municipal roads and recreation and public services, including but not limited to law and code enforcement.*

- Establish appropriate population densities and control the intensity of development to ensure neighborhood, community, and regional well-being and to preserve the natural environment.

*The Borough continues to maintain appropriate population and development intensities through its land use plan, zone plan, and zoning regulations. The integrity and the currency of the master plan and development regulations are addressed through periodic reexamination reports.*

- Provide sufficient space in appropriate locations for residential, recreational, commercial, and open space use. *The Borough provides sufficient spaces in appropriate locations for residential, recreational, commercial, and open space use through its zone plan.*
- Protect wetlands and areas with scenic, cultural, and recreational values. *The Raritan Bay beach area and some of the wetlands areas associated with Waackaack Creek are zoned as “Conservation Recreation” to “promote the conservation of valuable natural resources and prevent environmental degradation.”*

In addition to the recommendations mentioned above, the 2012 Master Plan Reexamination offered the following comments (in italics) to recommendations from the 2003 Reexamination Report concerning incorporation of redevelopment plans:

- A study should be considered for the Main Street, Beachway, and Carr Avenue Commercial Districts as well as the residential district near the beachfront between Carr Avenue and Laurel Avenue to determine if these areas can be classified as areas in need of redevelopment.
- A study should be considered to explore the possibilities of designating the areas of the Borough as redevelopment areas with special attention on the waterfront. *The Borough adopted a comprehensive redevelopment plan addressing four distinct areas within the municipality. The area along Beachway is currently under consideration for a Redevelopment Plan.*

- A petition should be submitted to the State Planning Commission for plan endorsement and Center designation. *A petition for Plan Endorsement has not been submitted. The NJ Office of Planning Advocacy, the office which staffs the NJ State Planning Commission and is the successor agency to the former Office of Smart Growth, is preparing recommendations for a major reform of the Plan Endorsement process. Therefore, the Borough should await the promulgation of new rules, review the revised process for consistency with the State Plan, and decide an appropriate course of action.*

As part of the 2012 Master Plan Reexamination, the Planning Board makes the following specific recommendations:

- That the Borough not prepare a new comprehensive master plan. However, an amendment to the Land Use Plan Element is recommended to address the adoption of the two redevelopment plans in 2005 and 2006.
- That the Borough continue to minimize the impacts of property caused by flooding through improvements to the storm water management system such as replacement of the storm drainage outfall pipes and gate valve structures. Improvements to the municipal storm water management system are critical to the Borough and should be continued.

## Redevelopment Plans

In July 2005, the entire Borough of Keansburg was designated as an “Area in Need of Rehabilitation” pursuant to the NJ Local Housing and Redevelopment Law. The designation is based upon the age of the housing stock in the municipality and the age of the water and sewer infrastructure. As a result of the designation, the Borough may establish plans (zoning and building standards) for the redevelopment of areas within the town. In addition, the Borough may adopt limited five-year tax abatement programs for homeowners to assist in revitalization efforts.

### Beachway Avenue Waterfront Redevelopment Plan, 2005

In December 2005 the borough Council adopted the Beachway Avenue Waterfront Redevelopment Plan (Ordinance #1403). The Plan provides development guidelines for the redevelopment of the Beachway Avenue Waterfront Redevelopment District, which is located along Raritan Bay to the west of the amusement park, roughly between Carr and Laurel Avenues.

The goal of this Redevelopment Plan is to return vacant, non-productive properties to full productivity by creating new development opportunities for private and public-private investment. The Plan will provide a range of quality public, commercial, and residential uses that will capitalize on the property’s strategic waterfront location.

The objectives of this plan are to:

- Advance the revitalization of the Borough.
- Develop a mixture of residential uses, supportive neighborhood retail services, and recreational opportunities that will add needed taxable improvements to the Borough’s ratable base.
- Increase year-round employment opportunities.
- Establish the Keansburg waterfront as a destination point for the region.
- Create new water-based uses such as ferry services for recreation and commutation.
- Enhance public access to waterfront recreation uses.
- Maintain views of the coastline and enjoyment for the public.
- Provide parcels of land of sufficient size and dimension to enable an orderly arrangement of new land uses.
- Develop land use and building requirements specific to the redevelopment parcels that are sensitive to the adjoining neighborhoods.
- Address existing and future traffic, environmental and flooding issues that could result from redevelopment.
- Undertake infrastructure improvements involving the water and sewer lines, streets, curbs, sidewalks, and parking.
- Ensure a long-term productive reuse of each of the redevelopment parcels.

### **Borough-Wide Redevelopment Plan, 2006**

On July 26, 2006 the Borough Council adopted a Borough-wide Redevelopment Plan (Ordinance #1415) for four redevelopment subareas for the commercial nodes and gateways. They are as follows:

- Subarea 1: Main Street Commercial Node—19 acres, along Main Street between Randolph Place and the Henry Hudson Trail
- Subarea 2: Main/Beachway Node—5 acres along Main Street near Beachway Avenue.
- Subarea 3: Carr/Raritan—18 acres with boundaries of Beachway Avenue to the north, Highland Avenue to the west, Center Avenue to the south, and Raritan Avenue to the east.
- Subarea 4: Route 36 Gateway—one two-acre lot on Route 36.

The purpose of the 2006 Redevelopment Plan is to set forth design guidelines to enhance and revitalize the Borough's commercial activity at the Route 36 gateway and its largely commercial downtown nodes along Main Street and Carr Avenue.

The objectives of this Redevelopment Plan are to:

- Advance the revitalization and rehabilitation of the Borough.
- Create year-round employment opportunities that will complement the existing amusement park and other local seasonal businesses.
- Develop a mix of residential uses, supportive neighborhood retail services, and recreational opportunities that will add needed taxable improvements to the Borough's ratable base and inject new households with disposable income to support the Borough's business districts
- Develop a comprehensive design program for rehabilitation that addresses façade improvements, streetscaping, and uniform signage, sidewalk, and lighting design.
- Enhance the sense of “gateway” to the Borough and the amusement park for New Jersey State Highway 36.
- Strengthen the main commercial nodes along Carr Avenue and Main Street.
- Utilize state and county funding sources and technical assistance such as the Main Street New Jersey Program, the Monmouth County Municipal Open Space Grant Program and/or Community Design & Physical Planning financing assistance from OSG, to assist with the Borough's downtown revitalization and increase open space and recreational opportunities within Keansburg.

- Establish the Keansburg waterfront as a destination point for the region.
- Enhance public access to waterfront recreation uses.
- Maintain views of the coastline and enjoyment for the public.
- Provide parcels of land of sufficient size and dimension to enable an orderly arrangement of new land uses.
- Develop land use and building requirements specific to the redevelopment parcels that are sensitive to the adjoining neighborhoods.
- Address existing and future traffic, environmental, and flooding issues that could result from redevelopment.
- Undertake infrastructure improvements involving the water and sewer lines, streets, curbs, sidewalks, and parking.
- Ensure a long-term productive reuse of each of the redevelopment parcels.

Furthermore, the Plan is intended to accommodate a mix of neighborhood retail services, regional commercial uses and services, pocket parks, and residential uses in the sub-areas. It is intended that each Redevelopment Plan Subarea be planned block by block as a coordinated project so that both the privately owned and publicly owned parcels contribute to the public welfare to their greatest potential. The subareas are to be redeveloped in such a manner that is complementary to the surrounding environment.

### **Stormwater Master Plan and Capital Improvement Recommendations, 2012**

The purpose of the Borough Stormwater Master Plan is to provide the Borough with a multi-year, multi-phase drainage capital improvement program and budget to improve the overall Borough stormwater collection system.

The Plan also outlines the construction of two stormwater pump stations and construction contracts for six bayfront outfalls.

Furthermore, this Plan recommends a drainage improvement program in order for the new pump stations and outfalls to have a significant impact on flooding within the Borough. Recommendations include improvements at Raritan Avenue, Beacon Light Avenue, Beachway Avenue, Twilight Avenue, and Carr Avenue at the Fishing Pier Outfall.

### **Monmouth County Growth Management Guide, 1982**

The Growth Management Guide (GMG) is the main planning tool used in Monmouth County. In 1982 it was adopted as the Monmouth County Master Plan. The GMG is intended to be a framework for other planning and decision making, and is a point of departure and a catalyst for an ongoing dialogue between the County and its municipalities.

The Guide categorizes the Borough of Keansburg as primarily a Suburban Settlement Growth Area, while the Borough's coastal

and wetland areas are located in both the Proposed Protection Area and the Environmentally Sensitive Area.

Suburban Settlement policies in this plan include:

- Encourage a variety of residential types in the suburban settlement.
- Encourage the use of the neighborhood unit in the suburban settlement.
- Encourage the use of cluster development in all parts of the county.

Proposed Protection Area policies in this plan include:

- Encourage public acquisition of unique freshwater wetlands for conservation and groundwater recharge.
- Continue the policy or supporting a county-wide system of linear greenbelts along primary and secondary streams.
- Encourage public acquisition of lands that are geologically unstable and unsuitable for development.

Environmentally Sensitive Area policies in this plan include:

- Restrict non-water related development in coastal flooding and high-risk erosion areas.
- Establish a coastal development district to set density, location, and use standards for areas adjacent to the Atlantic Ocean and the Sandy Hook and Raritan Bays.
- Prohibit high-rise structures from all areas east of the first public roadway from the Bay and discourage structures within 1,000 feet of the Bay shoreline.

- Allow for oceanfront development of beach-related commercial and recreational activities where such uses have been traditionally located.
- Encourage new coastal development compatible with the surrounding environment.
- Continue to protect tidal wetlands through state and federal wetlands management programs.
- Encourage municipalities to adopt ordinances providing for the protection and conservation of freshwater wetlands.
- Encourage municipalities to adopt and enforce floodplain ordinances to protect life and property against floodwaters, and to protect floodplains from development.

In 1995, the Monmouth County Planning Board adopted the Goals, Objectives, and Policies as an element of the GMG. Goals of the GMG relevant to this SRPR include the following:

- **Air Resources:** To promote land use planning that encourages the use of transit, walking and cycling, and the creation of centers in order to improve air quality by reducing automobile trips and congestion.
- **Centers:** To promote new and revitalize older urban areas into well designed mixed use centers with an easily accessible compact but varied core of residential, commercial, and community services which provide employment and create a specific identity.

- **Comprehensive Planning:** To promote comprehensive planning among all levels of government as well as the private sector by sharing information and developing a continuing dialogue on regulations, plans, policies, and issues.
- **Economic Development:** To promote managed growth by providing a suitable long-term economic climate and preserving and enhancing the quality of life in Monmouth County for the attraction of new businesses and the retention of existing businesses.
- **Historic, Cultural, Natural, and Scenic Resources:** To preserve the valuable historic, cultural, natural, and scenic resources of Monmouth County.
- **Housing:** To provide housing opportunities for all residents of Monmouth County.
- **Transportation:** To plan for a comprehensive and reliable intermodal transportation system that properly provides for public safety and meets the needs of the County's workers, residents, and visitors as well as respects the environment.
- **Water Resources:** To provide all of Monmouth County with a safe and pollution-free water environment, and conserve valuable water-oriented resources.

### **Monmouth County Master Plan Draft, 2013**

The Monmouth County Planning Board is in the process of undergoing a comprehensive update to the County Master Plan, with drafts of its vision statement as well as goals, principles, and

objectives available on the Monmouth County Division of Planning website.

The Plan's draft principles that are relevant to this SRPR include the following:

- **Comprehensive Planning:** Planning issues are to be addressed from interdisciplinary perspectives to identify and assess both interdependent and collective impacts and opportunities. This will minimize adverse impacts while maximizing benefits for all parties.
- **Coordination:** Effectual planning requires integration and coordination both internally (horizontally) and with other levels of government (vertically).
- **Approach:** Comprehensive planning relies on the use of new and emerging technologies as well as traditional methods of input from stakeholders and citizens.
- **Natural Resources:** Natural resources are life supporting infrastructure that all human and built environments are dependent upon to function and prosper.
- **Investments in Preservation Areas:** Aligning state, local, and county preservation strategies improves efficiency and reduces cost in protecting natural and unique resources.
- **Preservation of Community Character:** Protect and strengthen the established character of municipalities and their unique, individual qualities.
- **Recovery and Community Resiliency:** Promote planning, land use, and design strategies that increase the capacity

to adapt physically and economically to long-term environmental changes and natural hazards.

– Objectives:

- Participate in long-term recovery, mitigation, and resiliency efforts to better protect people, businesses, and resources against environmental damage and natural disasters.
  - Assist in the coordination of the County’s long-term disaster recovery planning initiatives.
  - Provide assistance to other County agencies involved in disaster response and emergency management.
  - Provide technical assistance to municipalities in disaster recovery efforts.
- Investment in Growth Areas: Aligning state, local, and county investment strategies improves efficiency and reduces cost in repairing, and expanding systemic infrastructure.

The Plan will be a vital coordinating tool used by municipalities, school boards, businesses, and other government agencies to help guide efforts and actions that contribute to a strong, stable, and sustainable prosperity for those that call Monmouth County home.

### **Monmouth County Bayshore Region Strategic Plan, 2006**

The Monmouth County Bayshore Region Strategic Plan was adopted in 2006. The plan is the result of the collective planning effort of nine municipalities in Monmouth County (including Keansburg), each of which faces a similar set of planning issues, and seeks to mitigate and solve these issues through collaborative, multi-jurisdictional planning efforts. The plan emphasizes the importance of pursuing common objectives and working together to facilitate regional solutions. There is a great deal at stake as downtown businesses continue to struggle, the region’s historic maritime character is challenged by physical and market forces, and waterfront and open space access are compromised by new development and a lack of resources.

The Bayshore Region Strategic Plan has the following goals and objectives relevant to the SRPR:

- Goal:
  - To create a vision and planning strategy to spur economic development in the region in a manner that recognizes the importance of preserving the region’s environmentally sensitive natural resources and beauty.
- Objectives:
  - To identify and assess current and future land use, economic development, urban design, and transportation issues along the Route 36 corridor.

- To identify and assess needs for the preservation of the region’s sensitive natural resources.
- To identify an economic development strategy consistent with the character of the region.
- To protect the maritime character of the region.
- To identify redevelopment and revitalization opportunities.

In addition, this Plan articulates a vision for the waterfront and open space of the Bayshore Region and envisions: “that the few remaining large tracts of upland natural areas are preserved and enhanced for open space and flood preservation where appropriate and feasible to preserve open space, protect the natural environment, or provide flood protection.”

This Plan’s municipal vision for Keansburg states: The downtown areas are strengthened and revitalized, and underutilized land along the waterfront west of the amusement park is redeveloped.

The Bayshore Region Strategic Plan offers implementation strategies for planning issues relevant to the Borough. These strategies mostly center on developing the Waackaack Creek Greenway to create a protected conservation area. This is in reference to the area of the Borough just west and south of Keansburg’s downtown area where the Henry Hudson Trail and Waackaack Creek converge with Church Street. The Bayshore Region Strategic Plan suggests that Keansburg actively join the current efforts in Hazlet to create the Waackaack Creek

Greenway as an ecotourism destination. This recommendation also envisions new neighborhood-scale retail activity along Church Street that extends the downtown area to connect with the creek and the bike trail. The Bayshore Region Strategic Plan also suggests that Keansburg consider modifying its zoning to encourage “live/work spaces” for artists and to encourage ecotourism-related uses in the Church Street area.

### **Monmouth County Multi-Jurisdictional Natural Hazard Mitigation Plan, 2009**

The Monmouth County Multi-Jurisdictional Natural Hazard Mitigation Plan was adopted in 2009 to meet the requirements of the Disaster Mitigation Act (DMA) of 2000. The plan’s development was led by the County and was funded through a FEMA planning grant. Monmouth County employed a multi-jurisdictional approach to develop the plan, and every municipality in the County was invited to participate as an equal partner with the County.

The Plan represents the collective efforts of citizens, elected and appointed government officials, business leaders, volunteers of non-profit organizations, and other stakeholders. The Plan identifies natural hazards that could affect the County’s jurisdictions, evaluates the risks associated with these hazards, identifies the mitigation actions to lessen the impacts of a disaster on Monmouth County communities, and prioritizes them based on the municipal master plans and other planning documents.

The successful implementation of the Plan will result in an increasingly resilient Monmouth County. In addition, the Plan ensures that Monmouth County and its jurisdictions are compliant with the Disaster Mitigation Act of 2000, which makes the County and its jurisdictions eligible to apply for Federal aid for technical assistance and post-disaster hazard mitigation project funding.

The Plan states that Keansburg Borough experiences severe coastal erosion. The Borough’s land use and development trends in hazard areas include town house, condo development, and retail development near waterfront areas. To protect new development from natural hazards, the Borough enforces floodplain management ordinances for new construction in floodplain zones.

To remain compliant with the DMA, the Plan must be updated every five years. The County is currently undertaking a comprehensive update of the Plan, with a draft expected to be completed in 2014. The FEMA approval and jurisdictional adoptions of the updated plan are anticipated thereafter. Keansburg Borough is actively participating in the Plan’s update and has provided progress reports to the County regarding mitigation and resiliency measures undertaken since the Plan’s adoption in 2009. Table 1 outlines a list of six priority mitigation action strategies identified by Keansburg Borough in the 2009 Plan, and summarizes each project’s status as of 2013.

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

Coastal Area Facility Review Act (CAFRA) regulations apply to development activities near coastal waters. Generally, the closer the project is to the water, the more likely it will be regulated. 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.

The Borough of Keansburg is located entirely within the coastal zone boundaries, so any regulated development requires a CAFRA permit. In Keansburg, as well as areas in other municipalities located within the CAFRA boundary, development is regulated and therefore a permit shall be required for:

- Any development on a beach or dune
- Any development located in the CAFRA area between the mean high water line of any tidal waters, or the landward limit of a beach or dune, whichever is most landward, and a point 150 feet landward. This includes single family homes, commercial, industrial, and public development.
- Residential development within the CAFRA area has varying regulation depending on how many dwelling units it has and the development’s location in relation to the mean high water line.
- Commercial development within the CAFRA area has varying degrees of regulation depending on the number

of parking spaces and the development's location in relation to the mean high water line.

Further, CAFRA separates the coastal region into zones and centers where development is regulated by varying degrees. The Borough is located within the Coastal Metropolitan Planning Area. This area within the CAFRA boundary guides development and redevelopment to ensure efficient use of scarce land while capitalizing on the inherent public facility and service efficiencies of concentrated development patterns.

**Table 1: Flood Hazard Mitigation Action Strategies Identified by Keansburg Borough in the Monmouth County Multi-Jurisdictional Natural Hazard Mitigation Plan**

Mitigation Action Strategy	Priority Ranking	Status as of 06/2014	Status Details
Enact hazard zoning ordinances.	High	Completed and ongoing	This issue is ongoing; Hazard zoning ordinances are still enforced.
Specifically allow variances on foundations of newly built structures.	High	Completed and ongoing	To be addressed on a case-by-case basis due to the newly adopted maps and elevations that have been changed.
Develop mitigation steps to reduce damage and losses due to flooding, throughout the control of water flow and a more efficient drainage system.	High	Initiated but not completed; ongoing	There is not enough funding available at this time; the pump station is not completed; the bulkhead project has been recently completed.
Create an outreach program to help residents prepare for disasters.	High	Completed and ongoing	Funding for a phone system is needed; Brochures were made and distributed throughout the Borough.
Develop a plan and seek funding for backup electricity in critical care facilities.	High	Initiated but not completed; ongoing	Funding has been applied for through Hazards Mitigation Grant Program for backup generators at the Raritan Avenue and Beacon Light pump stations.

## Evaluation of Superstorm Sandy's Impacts on Keansburg Borough

Superstorm Sandy brought high winds, heavy rains, and a record tidal surge and waves to Keansburg Borough. Impacts on Keansburg include (but are not limited to) the following:

- Flood waters ranging from two to six feet in depth inundating approximately 50 percent of the structures in the Borough;
- Breaches of protective dunes at four separate locations;
- 2.6 miles of dunes (encompassing the entire Borough coastline) that were substantially damaged from storm surge and flooding;
- 5 destroyed homes;
- 347 substantially damaged homes;
- Loss of power for up to 14 days;
- 40,400 cubic yards of disaster generated debris throughout the Borough (including 1,800 cubic yards of vegetative debris, 25,200 cubic yards of construction and demolition, 9,800 cubic yards of White Goods, and 3,600 cubic yards of sand);
- Inoperability due to damages of the Police Department building;
- Extensive damages to the Borough's parks;
- Significant damage to 22 roads in the Borough;
- Prevention of the circulation of emergency vehicles;
- Forced evacuation of hundreds of Borough residents from their homes.

## Storm Surge and Flooding

Superstorm Sandy caused severe damage within Keansburg. Streets, homes, and businesses within the Borough were inundated with floodwaters up to three feet causing severe damages and losses.

As a result of the drastic inundation of floodwater caused by Superstorm Sandy and other major storm events, the banks of the Waackaack Creek have become severely eroded and laden with silt and sand that was washed in from the Bayshore beaches. As a result, areas of roadway located along the creek have begun to collapse. In addition, the structural integrity of surrounding residential properties has been compromised, posing an imminent threat to life, health, and public safety.

Figure 3: Flooding at the Intersection of Highlands Avenue and Beachway Avenue



Figure 5: Flooding on Beacon and Shore Boulevards



Figure 4: Flooding on Beachway Avenue



Figure 6: Flood Waters Marked on a Damaged House



### Damage to the Waackaack Creek Bulkhead

Furthermore, the bulkhead and ground in the vicinity of Waackaack Creek sustained damage and was in danger of collapse post-storm. The collapse would have also affected the road and grounds around the bulkhead. The damage is located at an area of 200 linear feet long along Creek Road. The damaged area is surrounded by homes and other improved property and also is a danger to vehicles travelling through the area as well as the general public. The project area had previous damage to the bulkhead that was exacerbated and further diminished by Superstorm Sandy.

Figure 7: Damage to the Waackaack Creek Bulkhead



Figure 8: Damage to the Waackaack Creek Bulkhead (2)



### Damage to Homes

Superstorm Sandy destroyed approximately five (5) homes in Keansburg Borough. Sandy’s record storm surge inundated about 50 percent of the structures in the Borough by flood waters ranging from two to six feet in depth.

347 properties were “substantially damaged.” This 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’s pre-storm market value.

In the months following Superstorm Sandy, the New Jersey Department of Community Affairs compared 2011 American

Community Survey 5-Year Survey Data and FEMA Individual Assistance Data (effective March 12, 2013) with observed storm-related damage in order to identify damages and to determine the most efficient use of Community Development Block Grant Disaster Recovery (CDBG-DR) funds. This effort resulted in the completion of a Statewide CDBG Disaster Recovery Action Plan.

The CDBG Disaster Recovery Action Plan identifies one census tract in Keansburg Borough (census tract 34025801600) where homes sustained “severe” or “major” damage according to classifications made by HUD. This does not include dwelling units that sustained minor damage, which was far more common. The median household income in this census tract is \$35,982. This census tract has 2,150 households, and 24% of these households faced severe or major damage.

As a result of the destruction and damages mentioned above, Keansburg faces a significant financial burden. The Borough as a whole has sustained a 5.3% loss in home values and tax revenue. 1,291 properties faced reduced property values resulting from Superstorm Sandy.

**Figure 9: Home Damages on Ocean Boulevard**



**Figure 10: Home Damages on Ocean Boulevard (2)**



Figure 11: Home Damages on Ocean Boulevard (3)



Figure 13: Home Damages on Ocean Boulevard (5)



Figure 12: Home Damages on Ocean Boulevard (4)



Figure 14: Damage to a Home on Creek Road



Figure 15: A Fallen Tree at a Home on Shore Street



Figure 17: A Damaged Keansburg Home



Figure 16: Damage to a Home on Brookside Avenue



Figure 18: A Damaged Keansburg Home (1)



### Damage to the Police Station

Keansburg's Police Station Headquarters (a 4,500 square foot facility consisting of a two-story main building and an additional one-story storage area, located between Carr Avenue and Circuit Street) was damaged by 18 inches of flood waters on the entirety of the first floor. This included, but was not limited to, damages to finishes, doors, floors, walls, electrical, mechanical, plumbing, and Information Technology (IT).

At the Police Station main building, storm surge water rose to a high water mark of approximately twelve inches above the first finish floor. Here, all gypsum board installed has moisture levels adequate to support mold growth up to forty two inches above the finish floor. Central corridor walls also tested for moisture. In addition, the plumbing chase addition exterior walls were underwater to a point thirty six inches above the finish floor. Exterior wood siding was warped from water exposure. Furthermore, the first floor air handler, boiler, hot water heater, emergency generator, and controls were damaged beyond repair and require replacement.

The building also suffered from post-storm damage related to cold temperatures sustained over the winter. The domestic water lines in the ceiling as well as the hot water distribution piping received freeze damage consisting of failed joints and burst pipes in multiple locations.

The Police storage building, located directly west of the Police Station building sustained approximately 30 inches of flood

waters. Flood damage to the building included damage to the carpet, base floor molding, drywall, wall insulation, wall paint, exterior PVC doors, and metal door frames. There was also damage to a number of equipment and storage items, including but not limited to 20 drawer file cabinets, one copier machine, one podium microphone, 10 cases of flares, 1,000 bottles of drinking water, and 500 backpacks. Police equipment in the main building was also destroyed, including office supplies, a backpack vacuum, printer toners, various police firearms and ammunition, and handheld radios.

After site inspections, it was determined that the building was left structurally sound after Superstorm Sandy, but will require significant structural repair work. All Police Station activity has been temporarily relocated to the building behind the church that is located on Church Street next to Borough Hall.

The Borough is currently in the early stages of negotiating funds with FEMA for a project to relocate the Police Department to another location in town.

### Damage to Roads

Flood waters resulting from Superstorm Sandy caused Borough-wide road damages, including but not limited to damages to road pavement surface, storm drainage structures and pipe connections, curbs and sidewalks, and damage to adjacent roads and walk shoulder areas. 22 sites were identified with substantial damage that required repairs, and are outlined in Table 2.

Table 2: Severely Damaged Roads in Keansburg

Road	Damage: Asphalt	Curbing	Storm Drainage	Pre-existing damages from inadequate drainage	Pre-existing damages from utility repairs	Comments
1 Raritan Ave			✓			Damage to stormwater catch basin access door and trash rack inside the basin
2 Shore Blvd	✓					Asphalt damage was 1360 feet long, 50 feet wide, and 2 feet deep
3 Circuit St	✓			✓		
4 Victory Park	✓	✓				Damage also to a concrete wheelchair sidewalk access ramp
5 Maple Ave at Carr Ave	✓			✓		
6 Grove Pl at Woodside Ave	✓				✓	
7 Woodside Ave	✓				✓	
8 Lawrence Ave at Brianwood Ave	✓				✓	

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	Damage:	Asphalt	Curbing	Storm Drainage	Pre-existing damages from inadequate drainage	Pre-existing damages from utility repairs	Comments
Road							
9	Lawrence Ave at Beachwood Ave	✓				✓	
10	Lawrence Ave at Woodside Ave	✓		✓		✓	Storm water inlets and catch basins were filled with sand and flood debris
11	Lakewood Ave at Beaconlight Ave	✓		✓		✓	Two storm water inlets and catch basins were filled with sand and flood debris
12	Crescent St at Twilight Ave	✓		✓		✓	Storm water inlets and catch basins were filled with sand and flood debris
13	Park Ave at Cottage Pl	✓				✓	
14	Park Ave at Twilight Ave	✓				✓	
15	Park Ave (Forest Ave to Twilight Ave)	✓	✓	✓			Storm water inlets and catch basins were filled with sand and flood debris Pavement sunk in six locations along a 500' curb line

	Damage:	Asphalt	Curbing	Storm Drainage	Pre-existing damages from inadequate drainage	Pre-existing damages from utility repairs	Comments
Road							
16	Leola Ave (From Willis Ave to Main St)	✓		✓			Storm water inlets and catch basins were filled with flood debris
17	Manning Pl	✓				✓	
18	Ramsey Pl	✓				✓	
19	Locust St at Lincoln Ct	✓				✓	
20	Twilight Ave (From Shore Ave to Woodland Ave)	✓				✓	
21	Seeley Ave at St. Peter's Pl	✓	✓			✓	
22	Terrace Pl at Creek Rd	✓				✓	

### Damage to Pump Stations

At the sewer pump station located at 120 Main Street, a powerful storm surge of up to five feet inundated the site. The pumping facility continued to operate throughout the storm and flood water infiltrated the meter pit, but did not damage the pump station building. Flood water surge pushed over four sections of eight feet long by six feet high galvanized chain link fence. Flood waters also damaged the meter pit sewage flow meter, duplex electrical outlet, light switch, and light fixture.

### Damage to Water and Sewer Lines

Superstorm Sandy's powerful storm surge damaged water sewer mains in Keansburg Borough. The damages occurred at seven locations throughout the Borough. Damaged water mains occurred at: 42 Snyder Avenue; Forest and Park Avenues; Shore and Woodland Avenues; Lawrence and Woodside Avenues; 193 Carr Avenue; and 288 Carr Avenue. The damaged sewer main occurred at 48 Forest Avenue.

### Damage to the Keansburg Water Treatment Plant

The Keansburg Water Treatment Plant is located on Frazee Place. It sustained damages from high winds during Superstorm Sandy, including:

- Damaged roof membrane of the lime feed building, totaling 300 square feet;
- Damaged roof membrane of the lime storage building, totaling 144 square feet; and

- Damaged dome and fan motors to the direct drive downdraft exhaust fan (aerator) with aluminum dome hood.

### Damage to the Keansburg Waterfront Library

The Keansburg Waterfront Library is located at 55 Shore Boulevard and fronts the Sandy Hook Bay. Damage to the building was caused by high winds and flood waters. High winds damaged asphalt shingles on the roof, metal flashing on the front of the building, an exterior ceiling fan on the outside patio, and the building's sprinkler system. Flood waters damaged four exterior air conditioning condensing units.

### Damage to the Keansburg Historical Society Building

The Keansburg Historical Society Building is located at 59 Carr Avenue. Approximately 4 feet of flood water, entered the building during Superstorm Sandy and damaged the carpet, moldings, wall paneling, wall insulation, wood doors, door trim, floor heaters, copper heat pipes, window sills, mini-blinds, counter top, shelving, electrical outlets and switches, circuit breakers, hot water heater, and the water boiler. Contents owned by the Historical Society that were inside of the building were also damaged.

### Damage to the Beachfront Areas

Flooding and storm surge from Superstorm Sandy substantially damaged 2.6 miles of dunes in Keansburg. High winds and unprecedented storm surge caused the already diminished dune system to breach in four locations.

The East and West Bay Walks, located along different ends of Beachway Avenue, were damaged due to high winds. The Bay walks are wood and timber boardwalk-type facilities that had damages to the wood decking and wood deck sitting areas as well as the access ramps from the parking area. The damages to the decking were in a total of 400 linear feet long by 6 feet wide. The damages to the sitting areas are to three sitting areas which are 15 feet by 15 feet square each. Damages also occurred to the access ramps leading from the parking areas to the bay walks. The ramp damage was in total 200 linear feet long by 6 feet wide.

Further damage occurred at various parking areas along Beachway Avenue. At the western Beachway Avenue parking area, Superstorm Sandy’s storm surge damaged 28 litter receptacles. The flood water, strong winds, and heavy rain damaged five parking pay stations along the Beachway southern/eastern end and four pay stations at the Beachway parking lot. Flood water damaged 44 double and 36 single parking meters collectively along the Beachway parking lot, the Raritan Avenue parking lot, on Carr Avenue, and on Highland Avneue. A “Parking Lot Entrance- Pay & Display” sign was also damaged by strong winds. Furthermore, the storm surge displaced gravel in the parking lot.

Along Beachway Avenue, from Pineview to Raritan Avenue, storm flood waters, heavy rain, and strong winds damaged 30 litter receptacles, seven park benches, two picnic tables, and one “Special Beach Rules” sign. At the Bath House on the eastern stretch of Beachway Avenue, portions of the structure’s framework and roof were damaged.

Sections of the fishing pier at Point Comfort were also severely damaged, including entire sections of railings, floor boards, and support beams.

**Figure 19: Destroyed Beach and Dunes**



**Figure 20: Damage at the Keansburg Amusement Park**



### **Damage to Parks**

Superstorm Sandy caused widespread damage from storm surge, flood waters, and strong winds to Donohue Park, Forest Park, Saint Johns Fields, Friendship Park, Hill Street Park, and Collins Field.

At Donohue Park (located at the corner of Carr Avenue and Seeley Avenue) storm surge and flood debris from Superstorm Sandy contaminated 83 cubic yards of playground mulch in the tot lot and also damaged 178.5 linear feet of chain link fencing.

At Forest Park (located at the corner of Forest Avenue and Park Avenue) the storm surge and debris contaminated 66 cubic yards of playground mulch in three different tot lot areas. In addition, four litter receptacles were washed away, two park benches were damaged, and gazebo roofing was damaged.

Damage at the Saint Johns Fields (located at the end of St Johns Place) included: 81 cubic yards of crushed and washed away parking lot material; 6 cubic yards of contaminated playground mulch from storm surge and debris, 20 square feet of blown away asphalt shingles off the field house roof due to strong winds; and a rooted up tree.

Damage at Friendship Park (located at the corner of Main Street and Francis Place) included: one blown over tree, which lifted 120 square feet of brick pavers; 60 square feet of moved landscaping wall; five damaged litter receptacles; damages to the side rails and posts on the gazebo; and two damaged park benches.

At Hill Street Park and Collins Field (located between Hill Street and Garfield Avenue) damages included: 32 cubic yards of contaminated mulch in two tot lot areas from storm surge and debris; three damaged litter receptacles and two damaged park benches due to storm surge; 40 square feet of asphalt shingles blown off of the field house; rain damage to the field house second floor; and a missing vinyl air vent on the south side of the field house.

### Community Vulnerabilities Exacerbated by Superstorm Sandy

Superstorm Sandy exacerbated the vulnerability of homeowners and business owners in the following ways:

- The loss of fuel exposed residents to the dangers of cold fall nights;
- The loss of power and cell phone service impacted the communication between emergency personnel;
- Breaches and gaps in the Borough’s dune system allowed stormwater to reach the community;
- Residences and businesses located in low-lying areas close to Raritan Bay and the Waackaack Creek were especially vulnerable to flooding;
- Regular moon tide inundation has increased as a result of stream siltation from Superstorm Sandy;
- Damages to roads and flooding throughout the Borough hindered the capacity of emergency response vehicles;
- Many local businesses (mainly centralized on Carr Avenue, but also on Main Street and Church Street), were unable to recover and left empty store frontage throughout the Borough’s commercial centers;

Figure 21: Empty Store Frontage after Superstorm Sandy on Carr Avenue



Figure 22: Empty Store Frontage after Superstorm Sandy on Carr Avenue (2)



Figure 23: Empty Store Frontage after Superstorm Sandy on Carr Avenue (3)



Figure 24: Empty Store Frontage after Superstorm Sandy on Church Street



Figure 25: Empty Store Frontage after Superstorm Sandy on Church Street (2)



Figure 26: Empty Store Frontage after Superstorm Sandy on Church Street (3)



**Figure 27: Empty Store Frontage after Superstorm Sandy on Main Street**



**Figure 28: Empty Store Frontage after Superstorm Sandy on Main Street (2)**



### **Community Opportunities Created by Superstorm Sandy**

The impacts of Superstorm Sandy have shed light on the ways in which Keansburg may improve its resiliency in future storm events. As such, the Borough may improve its resiliency by implementing the following opportunities that have been created:

- 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; and
- Encouraging/supporting the use of sustainable development techniques and green building design in future development and redevelopment.

## Current Status of Post-Sandy Recovery Efforts

Both in preparation for and in immediate response to Superstorm Sandy, Keansburg took the following emergency protective measures:

- Evacuated stranded residents;
- Barricaded flooded roads and hazards;
- Utilized police officers and dispatchers to patrol the community, secure evacuated areas, and perform rescues, among other duties;
- Conducted building safety inspections to address structural safety on 1,804 homes and 61 commercial properties;
- Deposited 40,400 cubic yards of storm-related debris in a temporary staging area located at the Municipal parking lot on Beachway Avenue between Oakwood Avenue and Pinewood Avenue before being removed from the Borough.

In the weeks and months following Superstorm Sandy, Keansburg has taken (and continues to take) the following recover actions:

- Adopted an ordinance adopting FEMA’s ABFE levels;
- Repaired all damaged water and sewer mains;
- Repaired damages to the Keansburg Water Plant;
- Repaired damages at the Keansburg Waterfront Library;

- Removed 4,350 cubic yards of debris from 87 private properties.

**Figure 29: Debris is removed from a temporary staging area.**



## Demolition of Homes

A number of homes throughout Keansburg Borough were determined to be structurally unstable as a result of damage incurred during Superstorm Sandy. As a result, the Borough has begun a FEMA-funded house demolition project throughout the Borough to make way for the construction of new homes. 85 properties have been certified for demolition and 61 of those have been demolished through FEMA funding. 23

additional properties have been demolished through private funding.

### Elevation of Homes

To date, four (4) homes in Keansburg have been elevated since Superstorm Sandy. 40 homes are in the process of being elevated or are scheduled to be elevated in the weeks and months to come.

**Figure 30: A Keansburg Home Elevation in Progress**



**Figure 31: A Keansburg Home Elevation in Progress (2)**



### Temporary Police Building

As the Police Department Headquarters was severely damaged from Superstorm Sandy, the site became unusable. Monmouth County provided trailers for immediate use by the Police Department for two months until the Borough could secure another more appropriate facility. Prisoners had to be taken 20 miles away to the Holmdel Police Department for incarceration, so the Borough rented the only facility that was available at the time; the Police Department was temporarily relocated to the back building of the United Methodist Church located at 23 Church Street. The Borough then made reasonable alterations of the temporary facility to make the space functional and meet the pre-disaster needs of the Police Department, including but not limited to carpeting, awnings, repaired parking spaces, emergency

phone repair and installation, locksmith, painting, dispatch window replacement, air conditioning and heating repair, reestablished IT connections, drywall patches and repairs, emergency fire system, emergency repairs to radios and antenna communication, and electric wiring.

Keansburg Borough has also applied for a FEMA Public Assistance Grant to fund improvements to the former Police Department building located between Carr Avenue and Circuit Street. The scope of work includes (but is not limited to) mold remediation, asbestos removal, removal and replacement of wood floors, sub floors, carpeting, moldings, trim, wall paneling, wall insulation, drywall, ceiling tiles, doors, door frames, door molding, wall baseboard, heaters, wall electrical receptacles, water boilers, water heater, exterior wood wall siding, emergency generator, and exterior air conditioning condensing units.

### **Improvements to Roads**

Keansburg Borough applied for a FEMA Public Assistance Grant to fund the improvements to the 22 substantially damaged roads described in the “Superstorm Sandy’s Impacts” section. Funding requested was in the amount of \$192,261.40.

### **Improvements to Pump Stations**

At the sewer pump station located at 120 Main Street, the chain link fence has been repaired. The meter pit parts that were damaged have also been removed and replaced.

### **Improvements to Water and Sewer Lines**

The one sewer main break and six water main breaks described in the “Superstorm Sandy’s Impacts” section were excavated, repaired, and backfilled. The Borough intends to remove the temporary “cold patches” and to use hot mix asphalt to replace paving at all locations.

### **Borough-Wide Dune Improvements**

Keansburg had requested FEMA funding in the amount of \$3,671,250 in order to repair and reinforce 2.6 miles of dunes that were substantially damaged due to storm surge and flooding. It was the intent of the Borough to increase the height and width of the dunes in order to protect the residents and businesses from 100-year flood levels. The Borough sought to provide continuous protection along its coast and to create a more secure barrier along the entire northern border. By providing a continuous barrier along the waterfront it will strengthen the protection from storm surges for the entire community and limit the access points of the stormwater into the Borough.

After further correspondence with state and federal agencies, the Army Corps of Engineers and NJDEP determined that these improvements will be included as part of its federally funded \$30 million beach fill and dune restoration project.

**Figure 32: A Coordinated Effort to Improve Keansburg's Dunes**



### **Army Corps of Engineers Beach Fill and Dune Restoration Project**

The Federal Government and the Army Corps of Engineers, in conjunction with the New Jersey Department of Environmental Protection, are well underway with this federally-funded \$30 million project. Beach fill operations began in March of 2014 and will restore the beach and dune system to the original 1960s design. Construction duration is expected to last approximately 4 months and be completed in early June 2014.

**Figure 33: The ACOE Beach Fill Project Underway**



**Figure 34: The ACOE Beach Fill Project Underway (2)**



### Improvements to Beachfront Areas

At the Beachway Park areas, improvements to be completed include replacement of: nine pay stations; 44 double parking meters; 36 single parking meters; 28 litter receptacles; one parking lot sign; and 44 tons of gravel that was displaced.

Along Beachway Avenue, from Pineview to Raritan Avenue, improvements to be completed include replacement of: 30 litter receptacles; seven park benches; two picnic tables; and one “Special Beach Rules” sign.

The fishing pier at Point Comfort also has been restored to its pre-Sandy condition and has since re-opened.

**Figure 35: Improvements to the Fishing Pier at Point Comfort**



**Figure 36: Improvements to the Fishing Pier at Point Comfort (2)**



### Improvements to Parks

Superstorm Sandy caused widespread damage from storm surge, flood waters, and strong winds to Donohue Park, Forest Park, Saint Johns Fields, Friendship Park, Hill Street Park, and Collins Field.

Improvements to Donohue Park took place on Saturday January 12, 2013 and Saturday January 19, 2013, with the coordination of Keansburg personnel and the help of volunteers. Workers removed 83 cubic yards of contaminated mulch and installed the same amount of new playground mulch in the tot lot play surfaces. Work to be completed includes the replacement of a chain link fence gate measuring five feet wide and six feet tall.

At Forest Park, the gazebo roofing has been repaired. Work to be completed includes the replacement of two park benches and four litter receptacles, as well as the removal and replacement of 66 cubic yards of playground mulch in three different tot lot areas.

At the Saint Johns Fields, the shingles that were blown off of the field house roof have been replaced. Work to be completed includes: replacement of 6 cubic yards of playground mulch; grading and replacement of 44 tons of gravel in the parking lot; and removal of an uprooted tree.

All improvements to Friendship Park are to be completed and include: removal of one blown over tree; replacement of 120 square feet of brick pavers; replacement of three damaged litter receptacles; replacement of two park benches; and repairs to the gazebo.

At Hill Street Park and Collins Field, the field house roof shingles were repaired and three litter receptacles were replaced. Work to be completed includes replacement of two park benches

### **Improvements to Waackaack Creek**

The New Jersey Department of Transportation removed debris and obstructions from Waackaack Creek in order to restore the integrity of the Creek and its banks and to improve water flow. The Creek is located in a low-lying area of the Borough and serves as the main channel for stormwater runoff in the event of flooding and/or severe weather events. By removing debris,

desnagging, and desilting Waackaack Creek, the natural integrity of the Creek can be restored and it can function as a runoff collection area while mitigating future hazards to public safety and property. This project has been completed.

The Borough will also dredge the Waackaack Creek. All suitable dredged materials are to be recycled by depositing them within the existing dune system, and used to further fortify the dune's core. This project is expected to begin in the summer of 2014.

### **Improvements to the Waackaack Creek Bulkhead**

The Borough has sought FEMA funding to improve the property surrounding the damaged ground around the Waackaack Creek bulkhead, located on Creek Road, between Laurel Avenue and Seeley Avenue. The project requires seven steel sheets of piling each 30 feet long for emergency protective measures. The steel sheet piling is to be embedded in the ground 12 feet, with 4 feet above ground and visible. The section of roadway is closed for the duration of the project. This project began in early December of 2013 and was completed in May of 2014.

### **Community Development Block Grant (CDBG) Disaster Recovery Programs**

Keansburg Borough has 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 May 12, 2014. Keansburg’s residents have been awarded \$23,800,000 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 Keansburg, 199 low-to-moderate income housing units and 209 urgent need units were awarded grant monies through the HRP, totaling 408 housing units for the Borough. With a grant amount of \$10,000 per household, \$4,080,000 has been awarded to Keansburg, \$4,030,000 of which has been disbursed as of May 12, 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, though the state has

estimated an average award of \$100,000 per application. 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 Keansburg, 120 low-to-moderate income housing units and 33 urgent need units were awarded funding through the RREM program, totaling 155 housing units for the Borough. With an average award of \$100,000 per application, \$15,300,000 has been awarded to Keansburg. As of May 12, 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 Keansburg, 150 units have been awarded funding through the LRRP, totaling \$4,500,000 for the Borough. As of May 12, 2014, none of this money has been disbursed yet.

**Small Business Grants (SBG):** In addition to the CDBG housing programs, Keansburg has also been awarded one small business grant (SBG) totaling \$50,000. SBGs through the CDBG's economic development programs are forgivable loans that help small business pay for Sandy-related expenses including building repairs, equipment and inventory purchases, rent or mortgage payments, salary expenses, and utility costs for which they may need assistance.

**Continuation and Enhancement of Essential Public Services (EPS):** The Keansburg local government has also been awarded \$149,277.15 for essential services under the EPS program, all of which has been disbursed as of April 2, 2014. EPS grants are available for local governments that: 1) applied for FEMA Community Disaster Loans, and 2) continue to experience funding gaps that prevent adoption of a budget that delivers essential services.

### **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. Keansburg has received 83 home loans totaling \$4,868,700 and 7 business and economic injury disaster loans in the amount of \$274,500.

### **Participation in FEMA's Community Rating System**

The Community Rating System (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, including reducing flood damage to insurable property, strengthening and supporting the insurance aspects of the NFIP, and encouraging a comprehensive approach to floodplain management. Keansburg Borough is a participating municipality in the NFIP but not in the CRS. However, the Borough has expressed interest and is actively pursuing participation in the CRS.

Municipalities that participate in these programs earn CRS points, which result in discounted flood insurance premium rates to reflect the reduced flood risk. Discounted premiums are just one of the benefits of participating in the CRS. It is more important that these communities carry out activities to save lives and reduce property damage. Other benefits include enhanced public safety, reduced property damage and public infrastructure, avoidance of economic disruption and losses, reduction of human suffering, and protection of the environment.

### Community Outreach and Involvement

Keansburg Borough has also taken part in community involvement actions as part of its response to and recovery from Superstorm Sandy.

On December 2, 2013, the Christie Administration held a Mobile Cabinet in Keansburg to assist residents and businesses that were impacted by Superstorm Sandy. This Mobile Cabinet allowed residents and business owners the chance to check the status of their grants and to speak to state departments regarding individual concerns and casework.

Keansburg will hold a public hearing before the Borough Council on Wednesday May 28, 2014 to include discussion with residents of the Borough on inputs for this SRPR.

### Monmouth County Long Term Recovery Group

The Monmouth County Long Term Recovery Group (MCLTRG) seeks to assist all Monmouth County residents and homeowners in recovery from disasters by addressing and prioritizing unmet needs. MCLTRG's priorities include:

- Individuals and families who:
  - Need assistance to maintain or obtain safe, sanitary, and secure housing, including:
  - Are not served, or who are underserved, by other existing aid programs, including those 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.

In October of 2013, the American Red Cross awarded a grant to the MCLTRG in the amount of \$1.1 million. With this grant, the MCLTRG plans to prioritize 150 Monmouth County residents who have exhausted other available resources, but still face unmet needs in terms of home repair and rebuilding assistance. As of August 2013, the Red Cross had received \$308 million in donations for its Hurricane Sandy emergency relief and recovery efforts, with \$272 million spent or committed.

There is no publicly available data regarding MCLTRG's recovery aid in Keansburg Borough, but aid from this group remains available for Keansburg'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 Keansburg 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 Borough may also consider the following rebuilding approaches in their recovery efforts:

- Rebuilding and renovating homes and structures in accordance with flood hazard and construction codes.
- Elevating 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**

This Strategic Recovery Planning Report recommends that Keansburg Borough promote recovery from Hurricane Sandy and resiliency to future hurricanes and storms by taking the actions that are detailed in Table 3. These actions have been developed in consultation with the officials from a variety of Borough offices, and are intended to promote recovery from Superstorm Sandy and resiliency to future hurricanes and storms. They are classified in order of priority, with: short-term priority meaning that the particular action should be implemented within 12 months; mid-term priority within 24 months, and long-term priority within 36 months. The prioritization could shift depending on available funding. Actual costs of each project will be prepared at the time that the specific scope of work is determined.

**Table 3: Recommended Actions to Recover from Superstorm Sandy and to Improve Response and Increase Resiliency to Future Storms**

Action	Relation to Superstorm Sandy’s Impacts	Importance to Promoting Recovery, Response, and Resiliency	Length of Project/Priority
<p>Reexamine the Borough’s Master Plan Elements and prepare a sustainability element 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, as well as up-to-date mapping of current land uses, new FEMA mapping, community facilities, and important natural resources areas.</p>	<p>The last time the Master Plan was reexamined was in 2012. However, after Superstorm Sandy, it is important that planning documents address natural resources and recovery, response, and resiliency, especially issues dealt with in the aftermath of Superstorm Sandy.</p>	<p>Planning can mitigate risks and vulnerabilities, and protect property and safety.</p>	<p>Short-term (Within 12 months)</p>
<p>Automate, update, and expedite the Borough’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</p>	<p>The Borough is processing high quantities of zoning and construction permits in the aftermath of Superstorm Sandy.</p>	<p>This action will significantly increase the Borough’s efficiency in processing permits and in recovering from future storm events.</p>	<p>Short-term (Within 12 months)</p>

<b>Action</b>	<b>Relation to Superstorm Sandy’s Impacts</b>	<b>Importance to Promoting Recovery, Response, and Resiliency</b>	<b>Length of Project/Priority</b>
Renew efforts to make the Route 36 Corridor redevelopment area a priority. This should involve promoting new business and economic development as well as non-residential design standards.	Parts of the Route 36 corridor were flooded during Superstorm Sandy, and several buildings along the corridor had to be demolished as a result. Better design standards are needed.	This action serves as a renewed Borough effort to help build a sense of community and economic growth and well-being for the Borough’s main commercial district.	Short-term (Within 12 months)
Permanently relocate Keansburg’s Police Department activity out of the temporary site, to include redevelopment of the former site, which is in a flood prone area	This former site is in a flood hazard area and faced severe structural damages to the buildings and equipment.	Much of the equipment and material located at this site are essential for emergency response and for providing recovery services to residents.	Short-term (Within 12 months)
Finish demolishing the damaged homes that remain standing, vacant, and serve as a hazard to public health and safety.	These homes are in this condition because of damage from Superstorm Sandy. They are dangerous to the health and safety of neighbors.	This action will increase the health and safety to the neighboring areas. It will also allow surrounding property values to rise, which will help reverse the loss the Borough faced to its tax ratables.	Short-term (Within 12 months)
Participate in FEMA’s Community Rating System (CRS).	FEMA’s CRS promotes recovery from Sandy-type storms.	CRS participation results enhanced public safety, reduced property damage, and discounted flood insurance premium rates, among other benefits.	Short-term (but ongoing for longer than 12 months)

Action	Relation to Superstorm Sandy's Impacts	Importance to Promoting Recovery, Response, and Resiliency	Length of Project/Priority
Amend flood zone lines in flood maps to more accurately depict which properties are truly at risk to flooding.	Flood zone map discrepancies caused problems for homeowners.	This action will determine true hazard areas, will help homeowners with insurance, and is a more accurate plan for promoting recovery, response, and resiliency.	Short-term (Within 12 months)
Install a Borough-wide Supervisory Control and Data Acquisition (SCADA) system in conjunction with the Borough's owned and operated facilities (including Borough Hall and Police Department, fire houses, etc.) to communicate critical alarms to a centralized location or operational personnel.	Keansburg faced devastating damages to many of its services and municipal facilities.	This can: provide the Borough accurate information on water and wastewater collection, pump control and station performance; provide alarm notifications of system failure and emergency levels; protect quality of environment by preventing sewer spills into local waterways; and monitor fire, security, power failures, and generator operations.	Short-term (Within 12-months)
Provide backup power at key community facilities, including at Borough Hall, the future permanent Police Department site, fire stations and EMS locations, pump stations, and at the water treatment plant. This should include considering alternative forms of backup power such as diesel generators when gas is shut off.	Borough-wide power outages after Superstorm Sandy caused delays in providing emergency services to residents.	This could improve reliability in service, response time, and access for emergency services post-storm.	Short-term (Within 12-months)

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<b>Action</b>	<b>Relation to Superstorm Sandy’s Impacts</b>	<b>Importance to Promoting Recovery, Response, and Resiliency</b>	<b>Length of Project/Priority</b>
Contract a construction company for sand and debris removal after natural disasters.	Superstorm Sandy littered Keansburg with about 40,400 cubic yards of storm damage.	Being prepared to quickly remove debris from future storms will improve recovery, response, and resiliency.	Short-term (Within 12 months)
Prepare a Capital Improvement Plan identifying needed capital improvements to improve local resiliency.	Keansburg faced devastating damages to many of its services and municipal facilities.	An up-to-date catalog and inventory of Borough-owned infrastructure will better prepare Keansburg to provide recovery and response services in future Sandy-type storms	Mid-term (Within 24 months)
Develop a GIS database and user interface to catalog and inventory all infrastructure owned by the Borough, 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 Borough-wide capital improvement plan.	Keansburg faced devastating damages to many of its services and municipal facilities.	An up-to-date catalog and inventory of Borough-owned infrastructure will better prepare Keansburg to provide recovery and response services in future Sandy-type storms	Long-term (Within 36 months)
Increase and update signage on streets and on empty lots.	Signage across the entire Borough was destroyed and damaged.	This action is essential for the upkeep of road maintenance and service provision.	Long-term (Within 36 months)

## Summary of Actions and Priorities

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

Immediate/Short-term needs include:

- Reexamining the Borough’s Master Plan Elements;
- Automating and updating the zoning and construction permit process;
- Renewing efforts to make the Route 36 Corridor redevelopment area a priority;
- Permanently relocating Keansburg’s Police Department activity out of the temporary site, to include redevelopment of the former site, which is in a flood prone area;
- Finishing demolishing the damaged homes that remain standing, vacant, and serve as a hazard to public health and safety;
- Participating in FEMA’s Community Rating System (CRS);
- Amending flood zone lines in flood maps to more accurately depict which properties are truly at risk;
- Installing a town-wide Supervisory Control and Data Acquisition (SCADA) system;
- Providing backup power at key community facilities; and
- Contracting a construction company for sand and debris removal after natural disasters.

Mid-term needs include:

- Preparing a Capital Improvement Plan identifying needed capital improvements to improve local resiliency.

Long-term needs include:

- Developing a GIS database and user interface to catalog all Borough-owned infrastructure; and
- Increasing and updating street signage and signage on empty lots.

In addition to the above recommended actions, this SRPR also recommends that any new development within Keansburg Borough employ storm-resistant infrastructure and building strategies. Green infrastructure and resilient design are encouraged for future developments. Keansburg should prioritize and assess the use of sustainable building design and techniques as they relates to housing and infrastructure in the Borough.

Keansburg Borough 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:

- Reexamining the Borough’s Master Plan Elements;
- Automating and updating the zoning and construction permit process;
- Renewing efforts to make the Route 36 Corridor redevelopment area a priority;

- Permanently relocating Keansburg’s Police Department activity out of the temporary site, to include redevelopment of the former site, which is in a flood prone area;
- Preparing a Capital Improvement Plan identifying needed capital improvements to improve local resiliency as described above; and
- Developing a GIS database to support future planning efforts.

All of the foregoing will help the Borough improve resiliency by improving the Borough’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 Borough and minimize the impacts of future storm events.

