

Township of Aberdeen



Strategic Recovery Planning Report

TOWNSHIP OF ABERDEEN STRATEGIC RECOVERY PLANNING REPORT

January 2013

Prepared by:



11 Tindall Road
Middletown, NJ 07748

Anthony R. Rodriguez, PP, AICP
NJ Professional Planner No.: 06203

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

Executive Summary

When Hurricane Sandy struck the coast of New Jersey on October 29, 2012, it brought extensive damage to Aberdeen Township from both storm surge and wind damage. Aberdeen reported that 26 properties within the Township's jurisdiction faced substantial damage. While damage to private property was minimal compared to other New Jersey municipalities, the Township sustained significant damage to both critical infrastructure and integral community features. Two of the Township's sewage pump stations were destroyed at the hands of Sandy's storm surge and the Township's facilities along the Raritan Bayfront including its dune system, sea wall, and several recreational features, sustained significant damage. Trees and power lines throughout the Township also fell, and the Township faced power outages for more than seven days.

In response to the impacts faced by Hurricane Sandy, Aberdeen's recovery efforts have been extensive. The Township has partially restored its eroded dunes, conducted emergency repairs to the Cliffwood Beach Seawall and walkway, and applied for funding to construct flood mitigation infrastructure improvements. The Township has also begun work on plans to reconstruct the two sanitary sewer pump stations lost in the Storm.

Aberdeen 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 \$200,000 for the Homeowner Resettlement Program, \$900,000 for the Homeowner Reconstruction, Rehabilitation, Elevation, and Mitigation program, \$1,738,300 for Small Business Loans, as well as \$784,291 for Continuation and Enhancement of Essential Public Services.

Aberdeen Township's recommended municipal actions to promote recovery from Hurricane Sandy and to reduce vulnerabilities from future storms include the following resiliency actions: replacing, reconstructing and hardening critical infrastructure and vital community features damaged during Sandy, studying the impacts of upstream development on existing drainage patterns and infrastructure within the Township, updating the Township Master Plan; and continuing its participation in FEMA's Community Rating System program.

Acknowledgements

Mayor and Council

Fred Tagliarini, Mayor
Margaret Montone, Deputy Mayor

Councilman Harvey M. Brenner
Councilman Greg Cannon
Councilwoman Concetta B. Kelly
Councilman Joseph Martucci
Councilman Robert L. Swindle

Township Officials

Holly Reycraft, Township Manager
Karen Ventura, Township Clerk

Special Thanks to:

Maxine Rescorl, Zoning Officer
Bob Brady, Director of Public Works
John Powers, Chief of Police/OEM Officer
Scott Kineavy, Tax Assessor
Tim Gillen, Township Engineer

Project Team

Anthony R. Rodriguez, PP, AICP, Township Planner
Jeffrey Cucinotta
Robert Dare, PP, AICP

Table of Contents

Introduction	1	FEMA’s Hazard Mitigation Grant Program (HMGP)	10
Description of Aberdeen Township.....	1	FEMA Public Assistance Grants	10
Assessment of Existing Planning Documents	1	Monmouth County Long Term Recovery Group.....	10
Aberdeen Township	1	Rebuilding Approaches That Will be More Resistant to Damage from Future Storms.....	11
Aberdeen Township Master Plan, 1999.....	1	Recommended Municipal Actions to Promote Recovery from Hurricane Sandy and to Reduce	
Master Plan and Development Regulations Reexamination Report, 2002.....	1	Vulnerabilities to Future Storms.....	11
Master Plan and Development Regulations Periodic Reexamination Report and Land Use Plan		Short-Term Range.....	11
Update Report, 2005.....	2	Long-Term Range	11
Township of Aberdeen Natural Resources Inventory, 2002.....	2		
2008 Housing Plan Element and Fair Share Plan and 2010 Fair Share Plan Amendment	2		
Stormwater Management Plan, 2008.....	2		
Open Space and Recreation Plan, 2004	2		
Township of Aberdeen Land Development Ordinance.....	3		
Aberdeen Township Emergency Operations Plan.....	3		
Monmouth County	3		
Monmouth County Growth Management Guide, 1982.....	3		
Monmouth County Master Plan Draft, 2013	4		
Monmouth County Bayshore Region Strategic Plan, 2006.....	4		
Monmouth County Multi-Jurisdictional Natural Hazard Mitigation Plan, 2009	5		
Monmouth County Farmland Preservation Plan, 2008.....	5		
Monmouth County Open Space Plan, 2006.....	5		
Evaluation of Superstorm Sandy’s Impact on Aberdeen Township	5		
Post-Storm Public Involvement	5		
Storm Surge and Precipitation	6		
Damage to Properties.....	6		
Land Use Impacts	7		
Damage to Sanitary Sewer Pump Stations	7		
Damage to Culverts	7		
Damage to Cliffwood Beach Area Facilities	7		
Community Vulnerabilities Exacerbated by Hurricane Sandy	8		
Community Opportunities Created by Hurricane Sandy.....	8		
Current Status of Post-Sandy Recovery Efforts	8		
Sewage Pump Stations.....	8		
Roads and Culverts	8		
Dune Restoration and Hardening.....	8		
Park Improvements	8		
Seawall Repair.....	8		
Other FEMA-Approved Improvements.....	9		
Upstream Development Impact Study and Flood Control Assessment	9		
Master Plan Reexamination Report.....	9		
Participation in FEMA’s Community Rating System	9		
Community Emergency Response Team.....	9		
Community Development Block Grant (CDBG) Disaster Recovery Programs	9		
Small Business Administration Disaster Loans	10		

List of Tables

Table 1: Census Tracts with “Severe” or “Major” Damage 6
Table 2: Assessment Reduction Code Guidelines..... 7

List of Figures

Cover Photos: <http://aberdeennjlife.blogspot.com/>
Figure 1: Sandy’s storm surge resulted in a significant amount of debris being washed ashore. 6
Figure 2: Pleasure boats pile up 30 yards or more from the water’s edge in the wake of Hurricane Sandy 6
Figure 3: The remnants of Pump Station #4 after Sandy 7

List of Maps

Map 1: Aberdeen Township Regional Location..... 12
Map 2: Properties with Substantial Damage in Aberdeen Township 13
Map 3: Community Facilities in Aberdeen Township..... 14
Map 4: Coastal Floodplain Boundaries..... 15
Map 5: Coastal Floodplain Boundaries Preliminary Work Map and Critical Municipal Infrastructure 16

Introduction

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

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

Description of Aberdeen Township

Aberdeen Township is located in northwestern Monmouth County along the Monmouth County-Middlesex County border. The Township is bordered by Old Bridge Township (Middlesex County) to the west, Raritan Bay to the north, Keyport Borough, Hazlet Township and Holmdel Township to the east, and Marlboro Township and Matawan Borough to the south. The Borough of Matawan divides the Township into two non-contiguous sections. Much of the Township is located north and east of Matawan Borough, while a small section of the Township known as Freneau is located southwest of Matawan.

Aberdeen has population of about 18,210 (according to the U.S. Census Bureau’s 2010 Demographic Profile). The Township is approximately 7.7 square miles in total area, with 5.5 miles of land area, approximately 2.2 square miles of lakes, creeks, streams, and associated wetlands, and about 2 miles of shoreline along the Raritan Bay. The Township is traversed by a number of key highways and roads including the Garden State Parkway, State Highway Routes 34 and 35, and Monmouth County Routes 3 (Lloyd Road), 6A

(Cliffwood Avenue), 6 (Amboy Avenue), and 516 (New Brunswick Avenue/Lower Main Street). In addition, New Jersey Transit’s North Jersey Coastline Railroad Line provides commuter service to New York City from the Aberdeen-Matawan Station.

Development patterns within the Township are typical of an auto-oriented suburban community. The Township is predominated by low- to medium-density single-family residential development, with non-residential uses concentrated along regional highway corridors and county routes. Approximately 98 percent of developable land within the Township has been developed, and development in recent years has largely taken place through small lot infill development and redevelopment. While single-family detached residences are the most common housing type within the Township, new residential development within the Township has trended toward townhome, condominium, and multi-family developments.

Assessment of Existing Planning Documents

This SRPR examines the adequacy of the existing municipal and county planning and emergency management documents and describes the changes needed to support and achieve municipal planning goals and address municipal needs related to post storm recovery and to mitigate future storm impacts. The following sections detail the existing policy documents relevant to the Township.

Aberdeen Township

Aberdeen Township Master Plan, 1999

Aberdeen Township’s Master Plan embraces the general purposes regarding the local planning process outlined in the New Jersey Municipal Land Use Law. The Plan outlines Aberdeen’s own objectives and policies under four major land use categories: residential, commercial, industrial and conservation, and articulates the following goals and objectives for each category:

- Residential
 - New single family residential lots should not be smaller than the minimum lot size permitted in the district.
 - The quality of existing housing should be maintained or improved by means of rehabilitation, code enforcement, supportive public improvements, and other available means.

- Smaller, moderately priced housing units should be encouraged.
- Senior citizen housing and adult communities should be encouraged as a conditional use.

- Commercial

- Renovations should meet present zoning and site design standards. In particular, the required spacing between street line and building front and between parking areas and property lines should be followed. Buffer areas should be adequately landscaped and maintained.
- Scattered commercial uses should continue to be phased out.

- Industrial

- Adverse environmental impacts shall be controlled by the use of performance standards which reference and reinforce state performance standards and regulations.
- Visual incompatibilities between industrial development and adjoining residential areas should be minimized by adequate buffering and other design techniques.
- Scattered industrial operations should be gradually eliminated.
- Renovations and expansions should bring site improvements to a level consistent with current site planning standards.

- Conservation

- Tidal and inland wetlands, as well as stream banks, should be conserved.

Master Plan and Development Regulations Reexamination Report, 2002

This Reexamination Report outlines an expansion of the Township’s “CR” Conservation/Recreation Zoning District. The increase in Township land area within the CR Zone was created in recognition of the Township’s estuarine areas and permits limited marine commercial development and public purpose uses. The 2002 Reexamination Report also outlines existing land use patterns in the Township, major land use problems, and ongoing redevelopment efforts.

Master Plan and Development Regulations Periodic Reexamination Report and Land Use Plan Update Report, 2005

This Plan Update upholds the same objectives and policies as the 1999 Master Plan, and addresses three additional major land use planning issues in Aberdeen: COAH obligations for affordable housing, vehicular traffic impacts, and planning for open space and recreational facilities. It also outlines recommended changes to the zoning map and land development ordinance provisions.

Township of Aberdeen Natural Resources Inventory, 2002

The Township's Natural Resource Inventory (NRI) identifies and evaluates the Township's natural features and outlines information that is integral to the Township's continued efforts to protect its environmental resources while promoting sound land development.

The NRI notes that significant 100-year floodplain areas and wetland areas exist along the Raritan Bay and the Matawan Creek and its tributaries. However, the NRI notes the likely presence of additional 100-year floodplain areas associated with the myriad number of stream tributaries in the Township. The NRI identifies freshwater wetlands as the most widespread constraint to development in Aberdeen, and that much of the freshwater wetland areas within the Township coincide with the 100-year floodplains along creeks, streams, and the Raritan Bay.

In addition to freshwater wetland areas and areas within the 100-year floodplain, the NRI also identifies hydric soils and steep slopes within the Township. The report states that reasonable care should be taken by developers, the Township Planning Board and Township Zoning Board of Adjustment to preserve land areas where such constraints exist.

2008 Housing Plan Element and Fair Share Plan and 2010 Fair Share Plan Amendment

The 2008 Housing Plan Element and Fair Share Plan contains the framework to address the Township's affordable housing obligation as determined by the Council on Affordable Housing (COAH). The plan contains a baseline inventory of the Township's housing, population, and economic characteristics; states the Township's "prior round" and "third round" (growth share) affordable housing obligation; and outlines the Township's compliance plan, which

includes a mix of existing group homes, proposed age-restricted rental units, and proposed family rental units.

The Township amended its Housing Plan Element and Fair Share Plan in 2010 to identify modifications to the compliance plan contained in the 2008 Housing Plan Element and Fair Share Plan. These revisions included density reductions to two proposed affordable housing projects and the addition of a new inclusionary housing development adjacent to the Aberdeen-Matawan Train Station.

Stormwater Management Plan, 2008

The Stormwater Management Plan provides a strategy to address existing and prevent future stormwater-related impacts. The Plan addresses groundwater recharge, stormwater quantity, and stormwater quality impacts by incorporating stormwater design and performance standards for new development subject to the state's Stormwater Management Rules. These standards are intended to minimize the adverse impact of stormwater runoff on surface water quality and quantity and minimize the loss of groundwater recharge that provides base flow in receiving water bodies. The Plan describes long-term operation and maintenance measures for existing and future stormwater facilities.

The goals of the Stormwater Management Plan, as they apply to the SRPR, are as follows:

- Reduce flood damage, including damage to life and property;
- Minimize, to the extent practical, any increase in stormwater runoff from any new development;
- Reduce soil erosion from any development or construction project;
- Assure the adequacy of existing and proposed culverts and bridges, and other in-stream structures to handle existing and projected future flows;
- Maintain groundwater recharge;
- Maintain the integrity of stream channels for their biological functions, as well as for drainage;
- Minimize pollutants in stormwater runoff from new and existing development;
- Restore, enhance, and maintain the chemical, physical, and biological integrity of the waters of the State;
- Protect the public health;

- Safeguard fish and aquatic life and scenic and ecological values;
- Protect the public safety through the proper design and operation of stormwater detention/retention systems;
- Encourage municipal action to guide the appropriate use or development of lands in the Municipality in a manner which will promote the public health, safety, morals, and general welfare;
- Secure safety from fire, flood, panic, and other natural and manmade disasters;
- Promote the conservation of historic sites and districts, open space, energy resources, and valuable natural resources in the Municipality; and
- Prevent urban sprawl and degradation of the environment through improper use of land.

Open Space and Recreation Plan, 2004

The overall goal of the Township's Open Space and Recreation Plan is to promote the highest quality of life for the Residents of Aberdeen Township by providing ample open spaces that preserve natural habitats, parks for families to enjoy, recreational fields and facilities for all Township residents, and walking and hiking trails to serve as connective links between parks and residential areas.

The Plan also articulates more specific goals and objectives as follows:

- Preserve adequate open space
 - Acquire land for environmental protection, including freshwater wetlands, lands with steep slopes, stream corridors, floodplains, and coastal barriers.
 - Acquire as much of the little remaining open space areas as possible in the near future, while such open space is still largely undeveloped.
 - Provide increased access and recreational opportunities along the saltwater and freshwater waterfronts of the Township, with particular attention to the waterfronts along Raritan Bay, including the provision of canoe and small craft access points.
 - Preserve and protect the waterfronts along the Raritan Bay and the stream corridors throughout Aberdeen Township with the creation of greenways, which should

allow for public access to provide opportunities for hiking and biking.

- Preserve and enhance the social and ecological environment for the inhabitants of Aberdeen Township
 - Preserve the environmentally “Critical Areas” and stream corridors throughout Aberdeen Township in order to maintain the remaining limited sustainable natural ecosystems.

Township of Aberdeen Land Development Ordinance

Aberdeen Township’s Land Development Ordinance (LDO) contains specific provisions to protect environmentally critical areas from the negative effects of development, as follows:

- A “Conservation/Recreation” zoning district (Section 25-4.8) is established for most of the marshland and wetlands associated with Raritan Bay and the stream corridors of Whale, Long Neck, and Matawan Creeks. This zoning district limits the types of permitted development to farms, boat yards, marinas and ancillary marina uses, and conservation areas, public parks, and other similar public purpose uses. All permitted land uses must have a “definite relationship to the estuarial zone” and must be approved by NJDEP, where required.
- Pursuant to Section 25-4.1.g of the Land Development Ordinance, all residential development is required to be located a minimum of 100 feet from any existing or proposed detention or retention basin, pond, lake, or other water body or watercourse, as measured from the highest topographic grade of said water body or course.
- Section 25-5.14 of the LDO regulates retaining walls, embankment slopes, and bulkheads. Slope returns for embankments are limited to a 3 to 1 slope. Bulkheads or other appropriate permanent bank stabilization acceptable to the Board are required for all development on or along waterways, and the design must be approved by the Township Engineer.
- Section 25-5.23 regulates Surface Water Management and Section 25-5.24 regulates Stormwater Management consistent with NJDEP regulations.
- Section 25-6.8 regulates “Critical Areas” which are defined by ordinance as 100-year floodplains, freshwater wetlands, wetlands transition areas and slopes of 15% or greater (steep

slopes). Stream corridors with buffer strips of 100 feet in width from the top of the channel banks or the floodplain area (whichever is large) area also regulated and protected from most types of development. All development in the Township is subject to the provisions of this section of the LDO. Design and performance standards are included within the regulations for those developments that are permitted when variances or waivers are granted.

Aberdeen Township Emergency Operations Plan

The Aberdeen Township Emergency Operations Plan outlines the protocol to be followed by Township officials, first responders, and other integral Township personnel for a number of different types of emergencies including earthquakes, fire, flood, or attack. The Plan is continually evaluated and updated by the Township’s Office of Emergency Management and has been developed in compliance with all applicable Federal, State, and County regulations and plans.

Monmouth County

Monmouth County Growth Management Guide, 1982

Adopted in 1982 as the Monmouth County Master Plan, Monmouth County’s Growth Management Guide (GMG) is the County’s primary planning tool. The GMG is intended to provide a framework for planning and decision making at the county and municipal levels and provides a “jumping off point” for the ongoing dialogue between the County and its municipalities.

The Guide categorizes the majority of the Township of Aberdeen as an Urban Center Growth Area, while the Southern part of the Township as a Suburban Settlement Growth Area. The Township’s Raritan Bay waterfront area is categorized as “Proposed Protection Areas” and the lands along Matawan Creek and the Aberdeen-Keyport boundary are “Environmentally Sensitive Areas.”

Urban Center growth policies in this plan mostly center on economic development goals and do not directly impact this SRPR.

Relevant Suburban Settlement policies in this plan include:

- Encourage a variety of residential [housing] types in the suburban settlement.
- Encourage the use of the neighborhood unit in the suburban settlement.

- Encourage the completion of missing freeway links.
- Encourage the use of cluster development in all parts of the county.

Protection Area policies in this plan that are relevant to the SRPR include:

- Encourage public acquisition of unique freshwater wetlands for conservation and groundwater recharge.
- Continue the policy of 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 that are relevant to the SRPR 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 Growth Management Guide. Goals of the GMG relevant to the 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 tool used by municipalities, school boards, businesses, and other government agencies to help guide efforts that contribute to a strong, stable, and sustainable Monmouth County.

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, 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."

For Aberdeen Township, the plan envisions the redevelopment of underutilized land and former industrial sites and the development of a mixed-use center near the train station. The plan also envisions the

preservation of remaining natural areas and the development of new recreational resources.

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 Aberdeen Township has very little remaining vacant land available and suitable for development. The County conducted general estimates of potentially developable vacant land in identified hazard areas. The plan identifies 739 vacant parcels in Aberdeen as of 2009, and notes that 407 of these parcels are located in key hazard areas. The plan notes that development within the Township typically takes place through small lot, infill development and redevelopment.

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 April 2014. The FEMA approval and jurisdictional adoptions of the updated plan are anticipated thereafter. Aberdeen Township 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.

Monmouth County Farmland Preservation Plan, 2008

According to the Monmouth County Farmland Preservation Plan, adopted in 2008, 139 acres of Aberdeen Township are devoted to agricultural uses.

Monmouth County Open Space Plan, 2006

The 2006 Monmouth County Open Space Plan establishes priorities for the land preservation program of the Monmouth County Park System. The goal of the Plan is to permanently preserve public land of County significance to support future regional conservation and County-wide recreational needs. The plan seeks to establish an integrated system of open space that is sufficiently diverse and comprehensive to protect the significant natural and man-made landscapes that have defined Monmouth County in past generations and to provide a wide range of resource-based recreation opportunities for current and future generations.

According to the Monmouth County Open Space Plan, as of 2005, 420.49 acres of Aberdeen Township was dedicated open space. The 2006 Plan proposes a target of 103.83 acres of open space for the area for the Township. The Township has a 316.66-acre surplus of dedicated open space when compared with the County's target.

Evaluation of Superstorm Sandy's Impact on Aberdeen Township

Post-Storm Public Involvement

In response to the devastation left in the wake of Sandy, Aberdeen Township held several public meetings and workshops to solicit input from the general public and to provide residents affected by Sandy with updated information regarding recovery efforts and types of assistance available to aid recovery and rebuilding.

The Township held the following events to solicit public input after Hurricane Sandy:

- November 9, 2012: Township officials held a public information session and public meeting to update residents

on recovery activity, anticipated timetables for restoration of electricity and to solicit public input regarding localized effects of the storm and assess the needs of Township residents.

- Township officials conducted walking tours of the Cliffwood Beach section of the Township and met with residents to assess immediate damage and needs in the wake of the storm.

The public meeting and tour of Sandy-affected areas highlighted the effects of the storm surge, flooding and wind in the Cliffwood Beach section of the Township. Such effects, including damage to property and lack of access to certain roads within Cliffwood Beach, form the basis of several of the projects contained within this report. The public meeting and walking tour also revealed residents' frustration with prolonged power outages caused by Sandy, and a lack of an accurate for restoration timeline from Jersey Central Power and Light (JCP&L). Residents also expressed public safety concerns related to looting, burglaries, and lack of adequate street lighting during nighttime hours during the public involvement process.

While the public involvement process provided direct insight to the types of problems plaguing Township residents immediately after Sandy, the Township shifted its public information and involvement process to take a more proactive approach in the months following Sandy's immediate aftermath. In particular, the Township held and/or sponsored the following workshops and meetings:

- May 23, 2013: The Township hosted Governor Christie's Mobile Cabinet to provide residents a chance to connect directly with state officials to have lingering questions answered and to receive assistance from state offices.
- July 25, 2013: The Township hosted an Emergency Preparedness workshop meeting for Township residents to stress the importance of emergency preparedness and to disseminate information including coastal evacuation route maps, emergency kit checklists, and emergency preparedness tips.

These public workshops provided residents with the opportunity to receive assistance from several state offices and to interact with emergency management officials in order to foster ongoing recovery and ensure preparedness for future disasters.

Storm Surge and Precipitation

Like all of the waterfront municipalities affected by Hurricane Sandy, Aberdeen Township was significantly impacted by the storm surge caused by Superstorm Sandy. Sandy-related flooding isolated significant portions of the Cliffwood section of Aberdeen, including areas in the vicinity of Lakeshore Drive, Amboy Avenue, and Route 35 from emergency services and stranded many residents in their homes until the floodwaters receded. In addition, the surge carried a significant amount of debris from the Raritan Bay and Matawan Creek inland. The debris migration caused physical damage to waterfront structures and resulted in tens of thousands of dollars of debris collection and removal costs.



Figure 1: Sandy’s storm surge resulted in a significant amount of debris being washed ashore. (Aberdeen-Matawan Patch)

Sandy also caused significant upstream flooding in areas where such flooding had never before been seen. The more widespread impact of flooding resulting from Sandy is likely due to the impacts of upstream development both within the Township and in adjacent municipalities. These impacts include the alteration of natural drainage patterns, sedimentation of local watercourses, debris snags in natural and manmade drainage features, and aging stormwater infrastructure.



Figure 2: Pleasure boats pile up 30 yards or more from the water’s edge in the wake of Hurricane Sandy, Tuesday, Oct. 30, 2012, in the Cliffwood Beach section of Aberdeen (Peter Hermann, III)

Damage to Properties

In the months following 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 quantify damages and 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 two census tracts in Aberdeen Township where homes sustained “severe” or “major” damage according to classifications made by HUD. This table does not include dwelling units that sustained minor damage sustained, which was far more common.

Table 1: Census Tracts with “Severe” or “Major” Damage

Census Tract	Percent of Households with Major or Severe Damage	Households	Housing Units	Median Household Income
34025802500	3%	1,161	1,161	\$57,448
34025802600	1%	1,792	1,875	\$79,655

Source: CDBG Disaster Recovery Action Plan (2013)

In addition, the Township provided a list of 26 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’s market value.” Most substantially damaged properties in Aberdeen are located in the Cliffwood Beach area and along Matawan Creek. Properties with dock access to Matawan Creek were significantly impacted. Two additional properties located south of the Garden State Parkway sustained substantial property damage from a house fire and a fallen tree as a result of Hurricane Sandy.

Properties that have been determined to be substantially damaged have been categorized based on the type of damage and assessment of reduction to the property, and have been given a special tax code based on the assessment. Although 26 properties in Aberdeen have faced substantial damage, 8 properties have more than one type of damage and are counted twice in Table 2.

Table 2: Assessment Reduction Code Guidelines

Special Tax Code	Description	Reduction in Improvement Assessment (IA)/Land Assessment (LA)	Affected Properties
H71	Minimal Basement Flooding	5% in IA	3
H72	Moderate Basement Flooding	10% in IA	3
H73	Moderate 1st Floor Flooding	15% in IA	1
H74	Significant 1st Floor Flooding	30% in IA	7
H81	Minimal Structural Damage	5% in IA	5
H82	Moderate Structural Damage	20% in IA	4
H83	Significant Structural Damage	60% in IA	6
H84	Extreme Structural Damage	90% in IA	1
H85	Total Structural Damage	100% in IA	1
H86	Accessory Damage Only	Manual reduction required in Coastal Area Management Act	3
H91	External Obsolescence	10% in LA	0
H92	External Obsolescence	25% in LA	0
H93	External Obsolescence	50% in LA	0

Source: Township of Aberdeen

Land Use Impacts

Aberdeen Township is a fully developed suburban residential community characterized by medium-density residential development. However, Sandy had relatively limited impacts on existing land use patterns within the Township. With respect to private property, only 26 dwelling units within the Township were classified as units sustaining “substantial damage”.

As a coastal community, Aberdeen Township’s Land Development Ordinance restricts the types of uses permitted within floodways, flood fringes and stream corridor areas and requires robust stream corridor and riparian buffer setback requirements. In addition, the Township’s Flood Damage Prevention provisions require compliance with FEMA established construction requirements for projects located within established FEMA Flood Hazard Areas to further limit damage to private property. As such, existing land use patterns and prevailing land uses are not anticipated to substantially change due to the effects of Sandy.

Damage to Sanitary Sewer Pump Stations

Pump Station #4, located at Lakeshore Drive at Ocean Boulevard, was completely destroyed by Sandy’s storm surge. Only a portion of the engine block remains. Pump Station #10, located at Beach Drive at South Concourse, was also completely destroyed by the surge. Each of these pump stations will require replacement in order to ensure adequate operation of the Township’s sanitary sewer infrastructure



Figure 3: The remnants of Pump Station #4 after Sandy (aberdeennjlife.blogspot.com)

Damage to Culverts

The Lakeshore Drive culvert both faced substantial damage from Hurricane Sandy. Damaged was related to storm surge, debris and sedimentation, and partial washouts.

Damage to Cliffwood Beach Area Facilities

Cliffwood Beach Park and the Cliffwood Beach waterfront sustained significant damage due to Sandy’s storm surge and wind. Cliffwood Beach Park experienced significant flood- and wind-related impacts that resulted in the destruction of the park’s roller hockey rink and damage to its playground equipment. Sandy’s storm surge also resulted in the erosion of the Township’s bayfront dune system and shifting of the existing seawall. Dunes were reduced from ten (10) feet in height to two (2) feet in height along much of the bayfront due to the storm surge and related erosion. Emergency restoration work undertaken by the Township’s Department of Public Works has partially restored the dunes to between five (5) and six (6) feet along the bayfront.

The Township’s dune system and seawall represents not only a vital flood protection feature, but also a valuable recreational asset to the Township and its residents. The existing walkway on top of the

Cliffwood Beach seawall includes approximately 2,500 linear feet from South Concourse to Lakeshore Drive. Storm-related erosion resulted in shifting of the seawall and subsequently damaged and undermined the walkway. In addition, several areas were impacted by the storm surge washing up and over the walkway and subsequently draining back through the concrete, rocks, and DGA sub base. This wave action, coupled with the shifting of the seawall shifted several of the concrete slabs that comprise the walkway. The walkway's aluminum handrail was also damaged and is missing along some sections. The shifting of the seawall and subsequent undermining of the walkway has created an unsafe community feature that is not ADA accessible.

Community Vulnerabilities Exacerbated by Hurricane Sandy

Hurricane Sandy exacerbated the vulnerability of homeowners and business owners located in low-lying areas to the flooded waterways that border and run through Aberdeen 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.

Community Opportunities Created by Hurricane Sandy

The impacts of Hurricane Sandy have shed light on the areas in which Aberdeen 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

Sewage Pump Stations

Aberdeen seeks to replace pump station #4 located on Lakeshore Drive by constructing a new pump station above the newly established FEMA flood elevations. The Township will also evaluate the feasibility of waterproofing critical equipment and utilizing submersible pumps to reduce the potential for damage or service interruption. This is estimated to cost \$564,000, and the Township has applied for full funding from FEMA, with an estimated project completion date of July 2014. Aberdeen also seeks to replace pump station #10 located at Beach Drive at South Concourse. Potential funding sources include FEMA's Hazard Mitigation Grant Program and the New Jersey Environmental Infrastructure Trust.

Roads and Culverts

During the public outreach process of the first Monmouth County Multi-Jurisdictional Natural Hazard Mitigation Plan, the Township identified flooding on both Route 35 and on Lakeshore Drive as priority issues and reported them to the County. In 2012 NJDOT began construction on a \$15.7 million project that will result in the raising of a segment of Route 35 in both Aberdeen and Old Bridge to mitigate flooding associated with tides and flooding. The Township also applied for a \$185,000 grant for proposed improvements to Lakeshore Drive which include raising the road as much as four feet and constructing a new culvert with a higher flow capacity. The Township engineer estimates that the repairs to Lakeshore Drive will cost approximately \$535,000. Completion of this project is dependent on the availability of funding from County, State and Federal Agencies.

In addition to the culvert on Lakeshore Drive, Aberdeen has received approval for partial funding from FEMA to reconstruct the Cypress culvert, which sustained significant damage due to Hurricane Irene. Work on this project has not yet commenced, but it is anticipated this project will be completed within twelve months of the start of construction.

Dune Restoration and Hardening

The Department of Public Works has undertaken a partial dune restoration at the Cliffwood Beach Park area along Ocean Boulevard

and also at Beach Drive and was able to rebuild the dunes to a height between five (5) and six (6) feet in the months following Sandy. However, the Township seeks a more resilient and permanent solution to mitigate erosion and flooding.

The Township has prepared a concept plan for improvements to the Raritan Bayfront area that includes a quasi-structural dune system and improvements to Cliffwood Beach Park. The project involves replacing 2,300 linear feet of eroded dunes with a combination trap bag and sand/planting system. Trap Bags are part of a flood-defense barrier system and are less labor intensive and more cost-effective than using traditional sandbags. Dunes will be filled in over the installed Trap Bags. Aberdeen plans to install approximately 1,200 Trap Bags in the Cliffwood Beach Park area and estimates the project cost to be approximately \$360,000. The Township will seek funding through the Hurricane Sandy Coastal Resiliency Competitive Grant Program administered by the National Fish and Wildlife Foundation as part of a comprehensive bayfront beach and wetland restoration project along the Raritan Bayfront.

Park Improvements

In addition to the dune restoration project, Aberdeen seeks to improve Cliffwood Beach Park, which sustained significant damage during Sandy. The Township proposes to remove the destroyed existing hockey rink surface, expand the existing parking area, construct two dog park/dog run areas, improve the existing tot lot, construct a new baseball field and a new multipurpose grass field and create a walkway throughout the park. The proposed improvements carry an estimated construction cost of \$300,000. The Township will seek recreational funding from the Monmouth County Open Space Grant Program, the NJDEP Green Acres Program, and several foundation grants, including the Baseball Tomorrow Fund.

Seawall Repair

The Township proposes make substantial repairs to the Cliffwood Beach Seawall Path extending from Ocean Boulevard to Beach Drive. Proposed repairs include:

- Removing and replacing 4,500 square feet of reinforced concrete walkway that was damaged.
- Removing and replacing 3,000 square feet of reinforced concrete walkway that was undermined by the storm.

- Removing and replacing 270 linear feet of anodized aluminum handrail.
- Removing and replacing 800 linear feet of anodized handrail to be reinstalled with slight modifications due to the concrete work and/or minor damage.
- Installing 2,000 square yards of rip rap stone slope protection.
- Restoring approximately 3,500 square yards of area with stabilized topsoil, to be seeded and mulched.
- Cleaning, removing, and/or replacing displaced stones.

In addition to the aforementioned repairs, Aberdeen has applied for FEMA funding in the amount of \$365,000 to repair 1,650 linear feet of 6' wide ADA accessible sidewalk along the top of the existing seawall. The estimated completion date for this repair is July 2014.

Other FEMA-Approved Improvements

The Township has received partial funding to replace a damaged pedestrian bridge between Deerfield Lane and Matawan Regional High School. The bridge was damaged by Hurricane Irene. The project will be funded by FEMA's Reconstruction of Public Infrastructure program authorized under Administrative Order 2012-13.

Upstream Development Impact Study and Flood Control Assessment

In recent years, the Township of Aberdeen has experienced a marked change in overland drainage flow and natural drainage patterns as a result of increased upstream development. The Township has experienced a significant increase in areas vulnerable to flooding related to storm events, and the frequencies at which these events occur. With this empirical evidence in mind, the Township intends to conduct a study that explores the impacts of existing and planned upstream development and the adequacy of existing natural and man-made flood control and drainage features with the overall goal of mitigating the frequency and intensity of periodic flooding and reducing the number of geographic areas vulnerable to flooding. It is also anticipated that this study will recommend capital projects intended to achieve the goals of the plan.

Master Plan Reexamination Report

The Township's Master Plan was last evaluated and updated in 2005. State law requires that municipal master plans be reexamined every

ten years. The Master Plan Reexamination Report should amend the goals and objectives of the comprehensive Master Plan and the key elements of the Master Plan to address post-Sandy strategies and policies including but not limited to hazard mitigation and community resiliency. The Master Plan Reexamination Report will also evaluate sustainable design principles and green building techniques and will contain a policy recommendation for implementing more creative approaches to sustainability, utilization of green infrastructure and environmental engineering techniques. This effort will include the preparation of up-to-date mapping of current land uses, new FEMA floodplain mapping, critical community facilities, and important natural resource areas.

Participation in FEMA's Community Rating System

Aberdeen Township has been a participant in FEMA's Community Rating System (CRS) since May 1, 2010. It has a Class 9 status, which means that Township residents located both in and out of the Special Flood Hazard Area receive a 5% discount on flood insurance premiums. As of January 2012, there were 123 National Flood Insurance Policies in place in Aberdeen Township with a total premium of \$97,755 and a CRS discount of \$3,877 (source: FEMA NFIP).

Under CRS, a municipality receives discounts on flood insurance premium based on its class rating and its implementation of local mitigation, outreach, and educational activities that go well beyond the minimum NFIP requirements. Premium benefits are just one of the benefits of participation in CRS, but it is more important that these communities are carrying 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.

Below is a list of the activities that Aberdeen received points for under CRS as of January 2012:

- #310 Elevation Certificates: 56 points
- #350 Flood Protection Information: 18 points
- #420 Open Space Preservation: 39 points
- #430 Higher Regulatory Standards: 271 points
- #450 Stormwater Management: 60 points

- #630 Dam Safety: 74 points
- Total Points: 518

Community Emergency Response Team

In 2013, Aberdeen passed Ordinance No. 1-2013 establishing a Community Emergency Response Team (CERT) for the Township, an initiative under FEMA's Citizens Corps program. Aberdeen's CERT will be comprised of a team of 50 volunteers/members, to be managed by the Township's Emergency Management Coordinator (the Township's Chief of Police). The CERT can provide essential assistance in the event of an emergency. Members will undergo training in areas such as disaster preparedness, disaster fire suppression, disaster medical operations, light search and rescue operations, disaster psychology and team organization, and anti-terrorism, to be organized by Aberdeen in accordance with curriculum established by FEMA.

On July 25, 2013, the CERT took part in an emergency preparedness meeting, alongside representatives from FEMA, the Monmouth County Office on Aging, JCP&L, Maxons Restoration, the Monmouth County Health Department, the Aberdeen Fire Districts #1 and 2, the Aberdeen Township Police Department, Aberdeen Township public works and construction officials, Helmetta Animal Control, and Castle of Dreams Animal Rescue. This event was free to all residents of Aberdeen, and covered such topics as preparing a disaster kit, the use of generators, care for the elderly and disabled, as well as animal care in emergency situations.

Community Development Block Grant (CDBG) Disaster Recovery Programs

The Township of Aberdeen has received recovery aid from various 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. Aberdeen's residents have received aid 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 (9) 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. The grant amount is \$10,000.

- **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.
- **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.

Below is an outline of CDBG housing project funds provided to residents of Aberdeen (LMI/ low and moderate income units and UN/urgent need units) in their recovery efforts:

- HRP
 - LMI Units: 11
 - UN Units: 13
 - Total Units: 24
 - Awarded: \$240,000
 - Disbursed: \$240,000
- RREM
 - LMI Units: 5
 - UN Units: 4
 - Total Units: 9
 - Awarded: \$900,000
 - Disbursed: \$0
- LRRP

- Units: 1
- Awarded: \$30,000
- Disbursed: \$0
- Total
 - Units: 34
 - Awarded: \$1,170,000
 - Disbursed: \$240,000

Data has not yet been reported on the following CDBG recovery programs, and will be updated on NJDCA’s online CDBG database as it becomes available for the following programs:

- Small Business Grants (SBG)
- Neighborhood and Community Revitalization (NCR)
- FEMA Match Program (FMP)
- Code Enforcement (FMP)
- Code Enforcement (CODE)
- Supportive Service Program (SSP)
- Administrative/Planning (AP)

Small Business Administration Disaster Loans

In the months following Hurricane Sandy, the Small Business Administration (SBA) has been issuing loans to homes 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 online. As of February 2013, Aberdeen had received 11 home loans totaling \$859,300 and 1 economic injury disaster loan in the amount of \$879,000.

FEMA’s Hazard Mitigation Grant Program (HMGP)

This is a \$100 million reimbursement grant program set up to assist homeowners elevate their homes after Hurricane 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 New Jersey standard is to elevate residential structures a minimum of one foot higher than the Advisory Base Flood Elevation (ABFE). This reduces the risk of damage to the property and its contents in the event of major flooding. It may also provide a significant reduction in flood insurance premiums compared to a structure that is not elevated.

FEMA Public Assistance Grants

Monmouth County has received grants distributed through the FEMA Public Assistance program. As of May 2013, the Monmouth County Public Works department was set to receive \$3,714,294 as partial reimbursement for its pre and post storm efforts. The Sheriff’s department was also set to receive \$1,291,688 for providing security at shelters, search and rescue operations, and other activities (source: Matawan-Aberdeen Patch).

FEMA has also provided public assistance grants to Aberdeen to aid with disaster recovery. NJ.com has also compiled this data from FEMA and made it available on their website, although due to privacy concerns, data on individual assistance grants that have been issued have not been released. As of April 25, 2013, Aberdeen had received the following FEMA Public Assistance Grants, totaling \$784,291:

- The Township received:
 - \$107,382 for protective measures
 - \$288 for public utilities
 - \$151,503 for recreational or other uses
 - \$201,836 for debris removal
 - \$69,771 for public utilities
 - \$243,223 for recreational or other uses
- Aberdeen Township Fire District 1 received \$10,288 for protective measures

Monmouth County Long Term Recovery Group

The Monmouth County Long Term Recovery Group’s (MCLTRG) goal is to assist all county residents in recovery from disasters by addressing and prioritizing unmet needs. The Group’s priorities include the following:

- Individuals and families who need assistance to maintain or obtain safe, sanitary and secure housing, including:
 - Those who are not served, or who are underserved, by other existing aid programs, including those who are ineligible for FEMA.
 - Those who are experiencing economic hardship in pursuing a plan for recovery.
 - Those who are isolated or have difficulty accessing services.
 - Those who have begun the recovery process but have encountered a setback and need assistance with their continued recovery.

- Those who 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 owner-occupied residential rental 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 31, 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 Aberdeen Township, but aid from this group remains available for Aberdeen’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 Aberdeen 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 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 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 Hurricane Sandy and to Reduce Vulnerabilities to Future Storms

Aberdeen 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. The Township also recognizes the importance of updating its master plan to reflect its commitment to mitigating the effects of natural disasters and increasing resiliency to such events. These actions have been categorized into the short-term range (spanning one to three years) and the long-term range (spanning three to six years).

Short-Term Range

- Reconstruct Sanitary Sewer Pump Stations 4 and 10
- Continue and complete Route 35 elevation in Aberdeen and Old Bridge (NJDOT)
- Complete the Cypress Culvert replacement
- Complete dune restoration/replacement along Raritan Bay Waterfront
- Complete Cliffwood Beach Park improvements
- Repair the Cliffwood Beach seawall and replace damaged walkway sections and amenities.
- Replace the Deerfield Lane pedestrian bridge
- Conduct a reexamination report to address hazard mitigation and resiliency measures undertaken and to be undertaken by the Township.

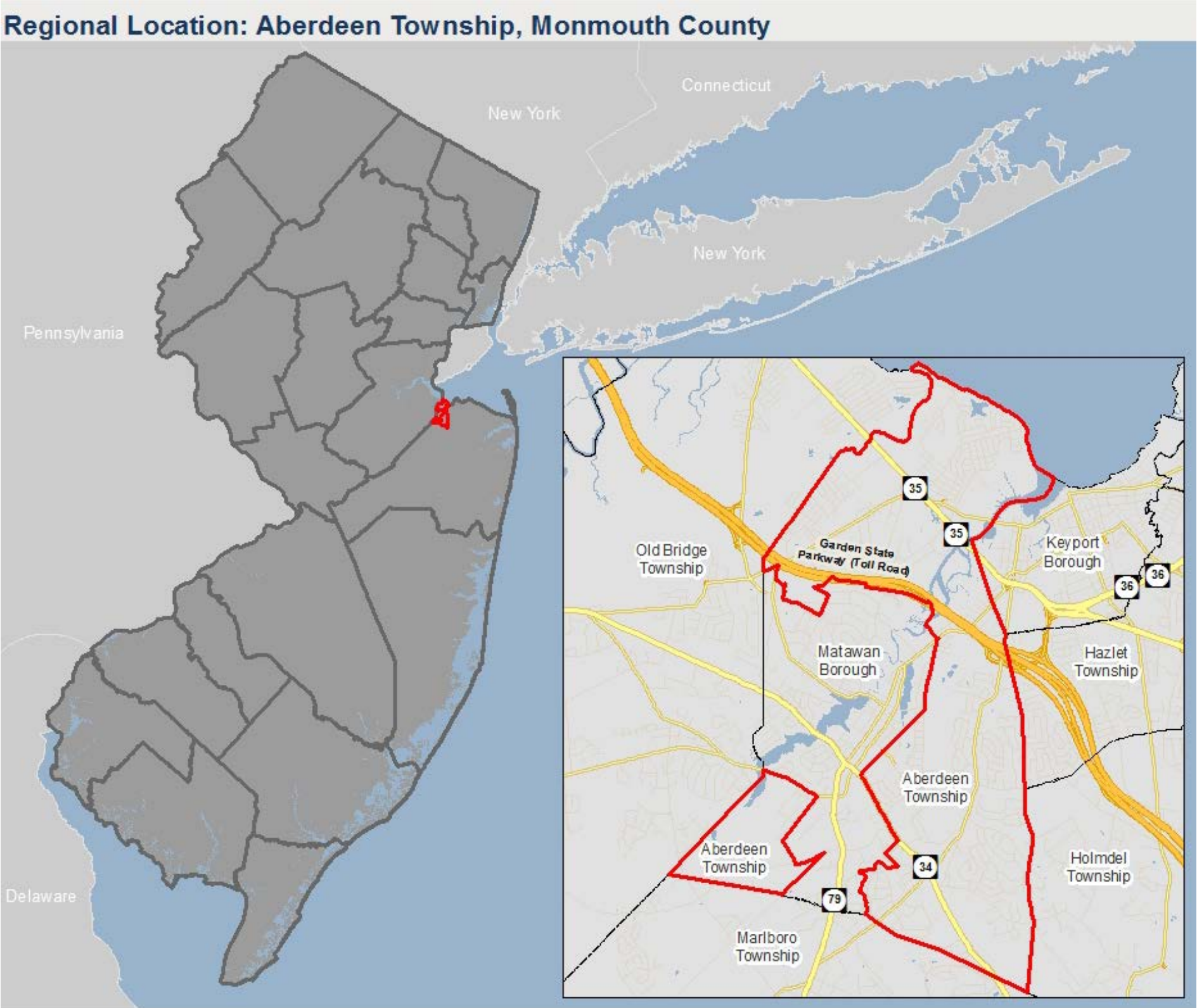
Long-Term Range

- Lakeshore Drive road elevation and culvert replacement
- Complete upstream development impact study and flood control assessment
- Continue participation in Community Rating System (in short- and long-term).

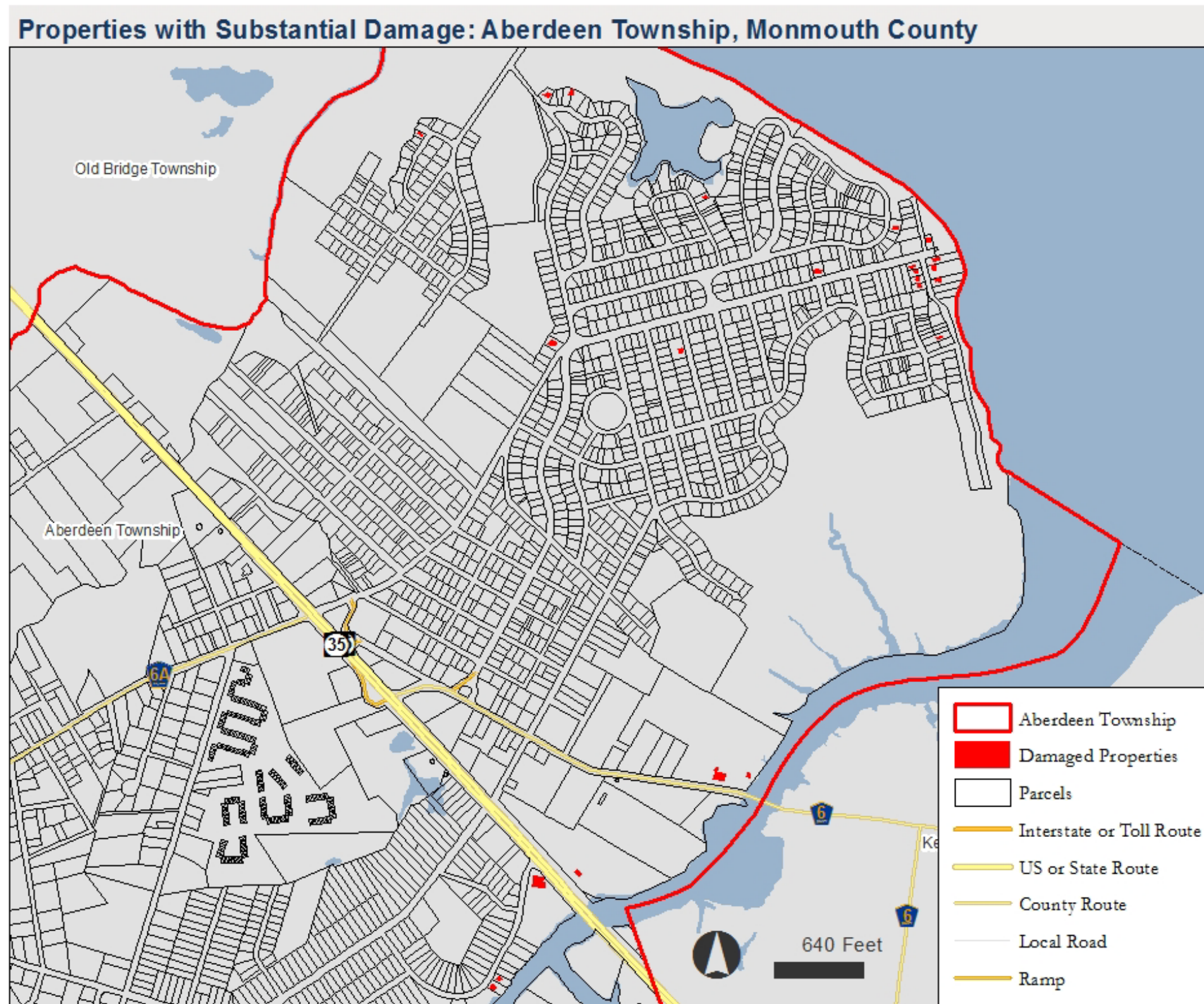
It is recommended that the Township pursue Phase II Post Sandy Planning Assistance Grant Funding for the following municipal actions:

- 1) Master Plan Reexamination Report Preparation
- 2) Upstream Development Impact Study and Flood Control Assessment

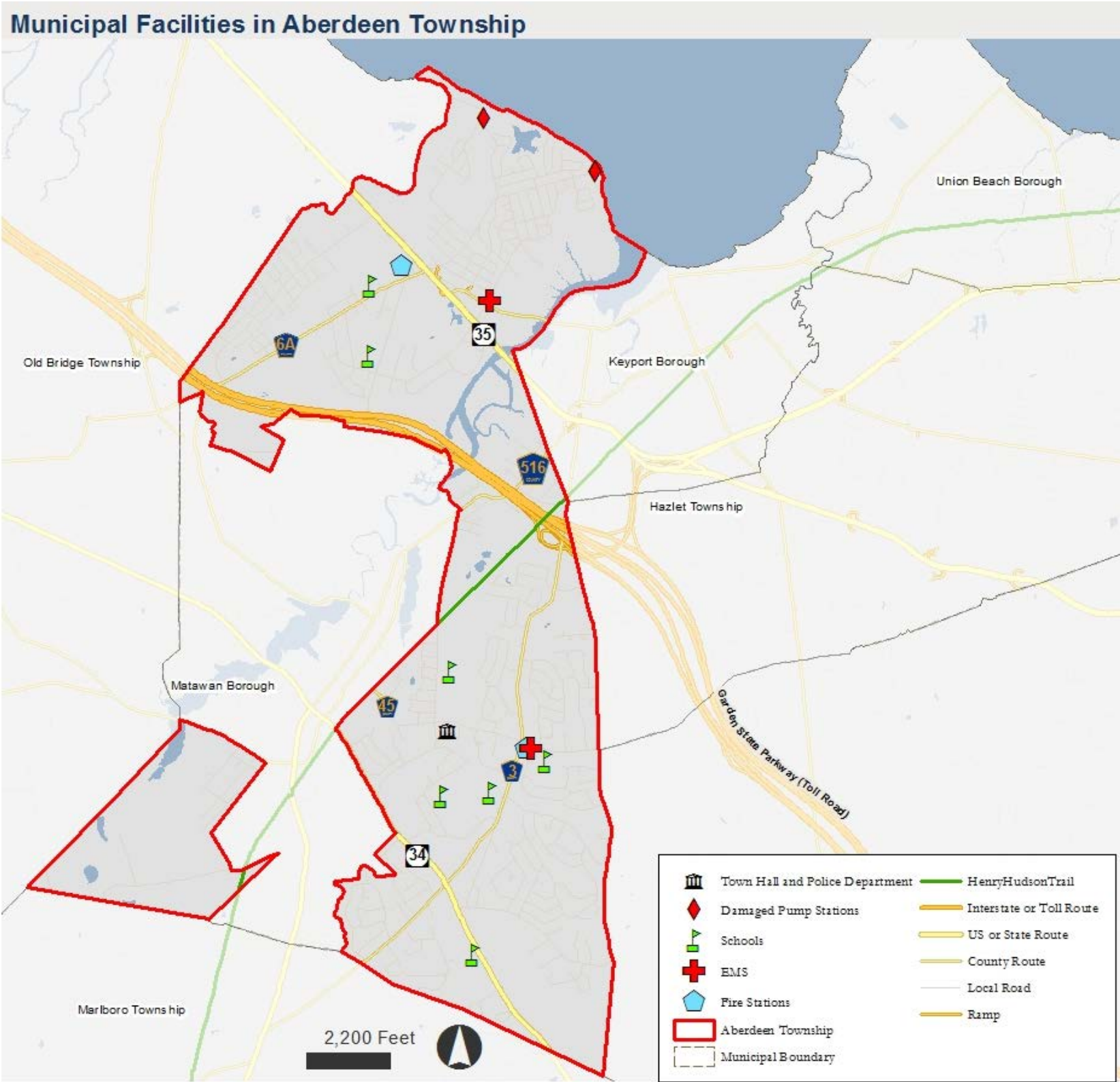
Map 1: Aberdeen Township Regional Location



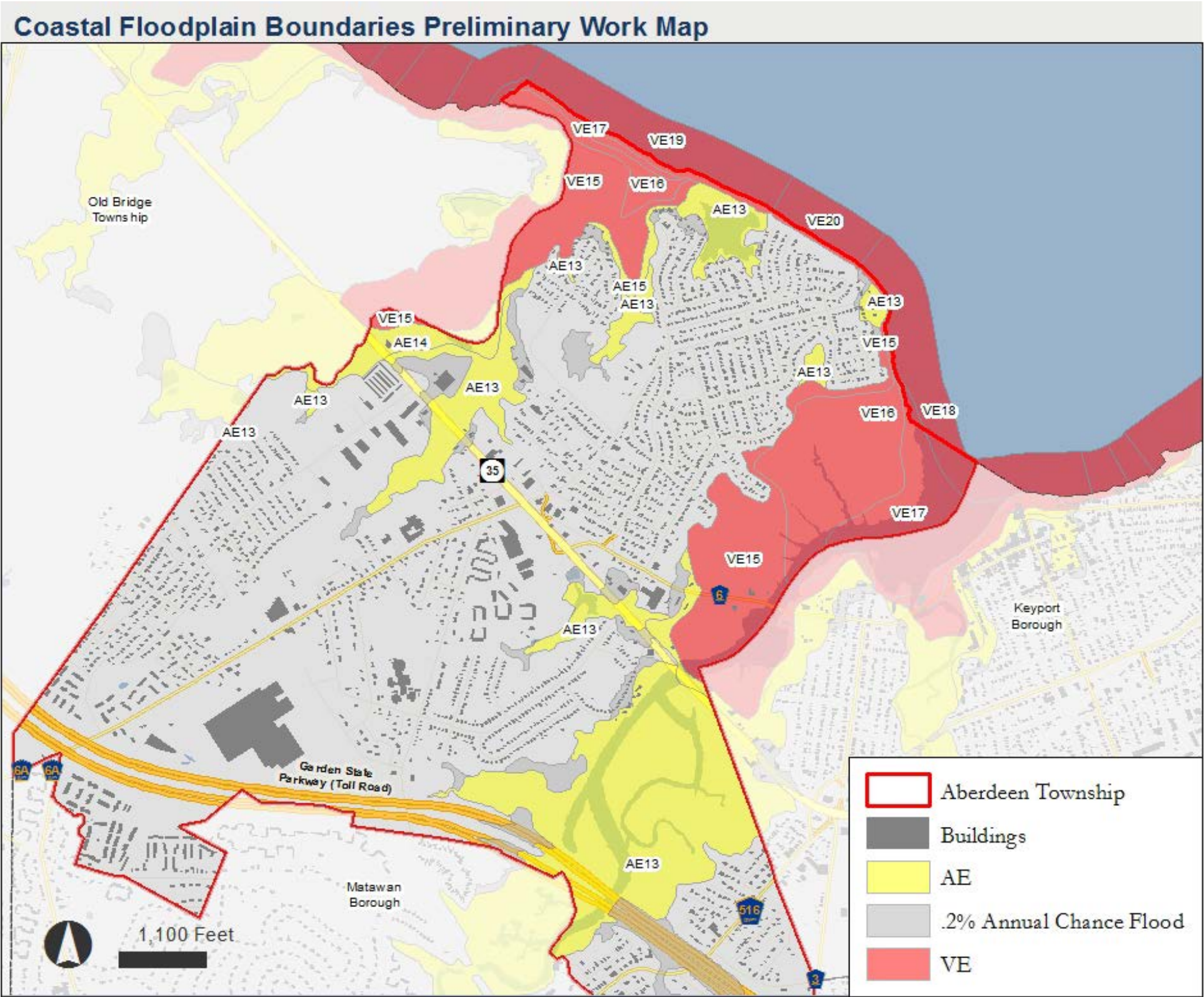
Map 2: Properties with Substantial Damage in Aberdeen Township



Map 3: Community Facilities in Aberdeen Township



Map 4: Coastal Floodplain Boundaries



Map 5: Coastal Floodplain Boundaries Preliminary Work Map and Critical Municipal Infrastructure

