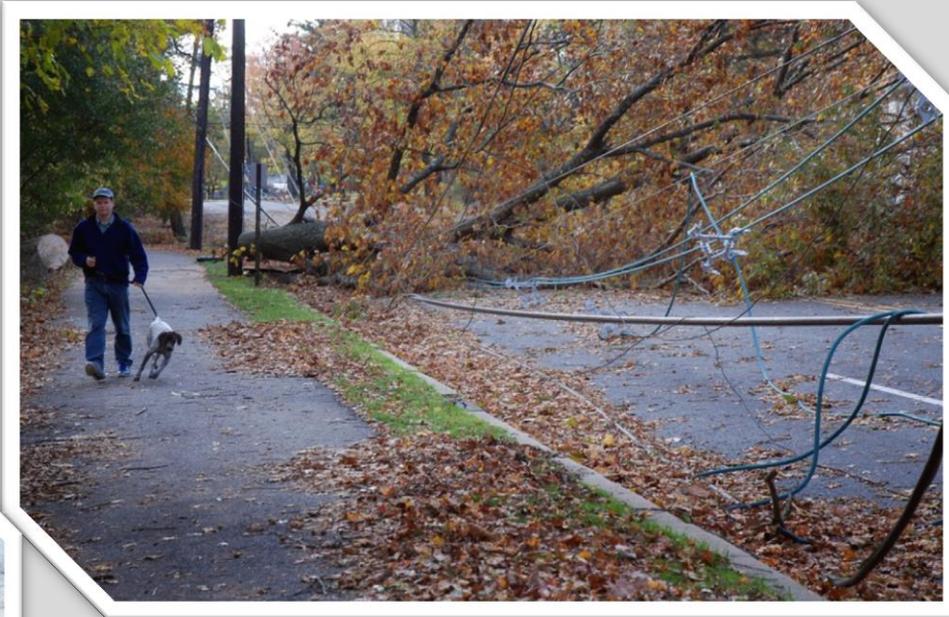


# Union County, New Jersey



## Strategic Recovery Planning Report

# Union County Strategic Recovery Planning Report

**Prepared for:**  
**Union County Board of Chosen Freeholders**  
**July 31, 2014**

**Prepared by:**



T&M Associates  
11 Tindall Road  
Middletown, NJ 07748



---

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

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

## Executive Summary

When Superstorm Sandy struck the coast of New Jersey on October 29, 2012, it brought unprecedented damage to Union County. The sheer magnitude of the storm and its ripple effect from other parts of the state put the County's preparedness to the test. Trees throughout the County fell, damaging property, blocking roadways, interrupting phone service, and bringing down power lines. All municipalities in Union County experienced power outages, some lasting up to two weeks. In Linden, localized flooding was reported in the downtown area and along the Arthur Kill. The pump station at Tremley Point went offline and was impacted by a tidal surge for three to four days.

In response to the impacts faced by Superstorm Sandy, Union County's recovery efforts have been extensive. In the days and weeks immediately following Superstorm Sandy, Union County evacuated stranded residents, barricaded flooded roads and hazards, cleared fallen trees from roads and parks, and held daily conference calls with power suppliers and local mayors. In the months following Superstorm Sandy, Union County has updated its Emergency Operations Plan, applied for grants to install emergency backup generators at key public facilities, and renovated the County Emergency Operations Center, among other actions.

At the time of this Strategic Recovery Planning Report (SRPR), Union County property and business owners have received recovery aid from the New Jersey Department of Community Affairs Community Development Block Grant (CDBG) programs. The County's municipalities have been awarded \$770,000 for the Homeowner Resettlement Program, \$1,644,515 for the Homeowner Reconstruction, Rehabilitation, Elevation, and Mitigation Program, \$630,000 for the Small Rental Properties/Landlord Rental Repair Program, \$119,431 for the Incentives for Landlords Program, \$3,743,917 for the Neighborhood Enhancement Program, and \$664,433 for the Sandy Special Needs Housing Fund, \$500,000 for the Pre-Development Fund, and \$150,000 for the Sandy Homebuyer Assistance Program. These programs are funded by the U.S. Department of Housing and Urban Development. Detailed descriptions of each of these projects as well as fund allocations by municipality are located in Appendices A and B.

Apart from CDBG programs, Union County’s residents have received 99 home loans totaling \$2,135,500, 4 business/economic injury disaster loans totaling \$919,700, and 6 stand-alone economic injury disaster loans totaling \$311,600. The County has also been awarded a total of \$1,426,700 to date as part of the Sandy Homeowner/Renter Assistance Program

Union County’s recommended priority actions to promote recovery from Superstorm Sandy and to reduce vulnerabilities from future storms include (but are not limited to) the following actions:

- Evaluate options for evacuating or providing aid to vulnerable populations and neighborhoods;
- Provide recommendations to urban coastal towns about resilient land uses and land use planning practices;
- Analyze the Raritan Valley stream corridor development designs, redevelopment plans, and site plans;
- Improve the system for documenting what work is done during an emergency;
- Develop a virtual “emergency operation center”; and
- Prepare a comprehensive Recovery and Resiliency Plan that is designed to integrate and coordinate the goals, objectives, and recommended strategies and actions in the County’s updated Hazard Mitigation Plan, Health and Wellbeing Assessment, sustainability initiative, and evaluation of vulnerable populations and neighborhoods.

Union County recognizes that this SRPR is a first step in a comprehensive strategy to aid recovery, reduce hazards, and improve resiliency in the County. The next steps in the County’s plan are described in the recommended actions at the end of this report (on pages 26-34).

## Acknowledgements

### **Board of Chosen Freeholders**

Christopher Hudak, Chairman  
Mohamed S. Jalloh, Vice Chairman  
Bruce Bergen, Freeholder  
Linda Carter, Freeholder  
Angel G. Estrada, Freeholder  
Sergio Granados, Freeholder  
Bette Jane Kowalski, Freeholder  
Alexander Mirabella, Freeholder  
Vernell Wright, Freeholder

### **Alfred Faella, County Manager**

**William Reyes, Jr., Deputy County Manager and Director, Department of Economic Development**

### **Department of Economic Development**

Amy C. Wagner, Deputy Director  
Colleen Mahr, Director, Division of Strategic Planning & Intergovernmental Relations  
William Inglefield, Economic Development Representative, Project Manager  
Amy Vitale, Project Coordinator  
Hannah Peterson, Project Coordinator  
Kamal Saleh, Bureau of Planning and Economic Development  
Liza Betz, Bureau of Transportation Planning  
Thomas O. Mineo, P.E., Director, Division of Engineering  
Ray Sullivan, Division of Engineering

**Department of Parks and Recreation**

Ronald Zuber, Director  
Michael Brennan, Director, Division of Park Maintenance

**Department of Public Safety**

Andrew Moran, Director  
Christopher Scaturo, Division of Emergency Services  
William Kane, Deputy Director, Division of Emergency Services  
Salena Carroll, Bureau of Domestic Preparedness, Office of Emergency Management  
Virginia Franco, Health Officer, Director, Division of Health  
Roberta Milano, Coordinator, Division of Health

**Department of Public Works and Facilities Management**

Joseph A. Graziano, Sr. Director  
Joe Policay, Director, Division of Public Works  
Mike Brennan, Acting Director, Division of Facilities Management

**City of Linden**

Captain Dave Hart, Patrol Division Commander, Police Department

**Town of Westfield**

Chief Daniel J. Kelly, Westfield Fire Department

**T&M Associates**

Stan Slachetka, PP, AICP  
Fran Mullan, PE, CME  
Ryan Garner  
Jeffrey Cucinotta

## Table of Contents

Introduction.....	1
Assessment of Existing Planning Documents.....	4
Union County Master Plan, 1998.....	4
Union County Master Plan, Open Space and Recreation Plan Element, 1999 .....	5
Union County Land Development Standards, 1999.....	5
Union County Master Plan, Open Space and Recreation Plan Element Amendment, 2002 .....	5
Union County Parks, Recreation, & Open Space Master Plan, 2010.....	6
Union County Multi-Jurisdictional Hazard Mitigation Plan, 2010 .....	6
Evaluation of Superstorm Sandy’s Impacts on Union County.....	8
Downed Trees .....	8
Power Outages.....	10
Flooding.....	11
Damage to Properties .....	12
Community Vulnerabilities Exacerbated by Superstorm Sandy.....	13
Flooding .....	13
High Hazard Dams.....	14
Communication and Coordination .....	14
Personnel and Resources .....	15
Population Growth.....	15

Community Opportunities Created by Superstorm Sandy ..... 16

Current Status of Post-Sandy Recovery Efforts..... 18

    Community Development Block Grant (CDBG) Disaster Recovery Programs..... 19

    FEMA’s Hazard Mitigation Grant Program (HMGP) Elevation Program..... 20

    Small Business Administration Disaster Loans ..... 20

    River Desnagging Project..... 22

    Sandy Homeowner/Renter Assistance Program..... 22

    Storm Recovery Loan Program..... 22

    Participation in FEMA’s Community Rating System ..... 23

    Community Involvement..... 25

    Union County Long Term Recovery Group ..... 25

    Rebuilding Approaches That Will be More Resistant to Damage from Future Storms..... 25

Recommended Actions to Promote Recovery from Superstorm Sandy and to Reduce Vulnerabilities to Future Storms..... 26

    Summary of Actions and Priorities..... 33

## List of Figures

Figure 1: Union County Regional Location .....	3
Figure 2: Devastation from the Storm Surge in Eastern Union County .....	8
Figure 3: A fallen mature tree just missed Washington School in Garwood. ....	8
Figure 4: Downed Trees in Cranford Township.....	9
Figure 5: Downed Trees in Fanwood Borough .....	9
Figure 6: Downed Trees in Kenilworth Borough.....	9
Figure 7: Downed Trees in Plainfield City.....	9
Figure 8: Downed Trees and Damaged Power Lines in Union Township.....	10
Figure 9: Downed Power Lines in Elizabeth.....	11
Figure 10: A Downed Tree in Roselle Park Borough .....	11
Figure 11: Veterans Memorial Park Devastation in Elizabeth at Confluence of Elizabeth River and Arthur Kill.....	11
Figure 12: Property Damage Caused by Fallen Trees .....	12
Figure 13: A Damaged Property from a Fallen Tree in Westfield Township.....	13
Figure 14: Community Vulnerabilities in Union County .....	17
Figure 15: Fallen trees are cleared from a road in Echo Lake Park in Westfield. ....	18
Figure 16: Fallen trees are cleared from a road in Echo Lake Park in Westfield. ....	19
Figure 17: Electrical lines are repaired on Chestnut Street in Roselle Borough. ....	19
Figure 18: A Snag in the Passaic River .....	22
Figure 19: A Fallen Tree Damages a Home in Fanwood (Photo Credit: Tom Kranz).....	22

**\*All photos were provided by Union County unless otherwise noted.**

**List of Tables**

Table 1: Census Tracts with “Severe” or “Major” Damage ..... 12  
Table 2: SBA Disaster Loans by Municipality ..... 21  
Table 3: CRS Activity Points ..... 24  
Table 4: Recommended Actions to Recover from Superstorm Sandy and to Improve Response and Increase Resiliency to Future Storms 27

**List of Appendices**

Appendix A: List of Community Development Block Grant (CDBG) Disaster Recovery Programs Awarded to Union County Municipalities  
Appendix B: CDBG Disaster Recovery Program Awarded Amounts to Union County Municipalities  
Appendix C: Superstorm Sandy Health & Wellbeing Assessment Report Template

## Introduction

This Strategic Recovery Planning Report (SRPR) will serve as a blueprint to guide Union County’s recovery 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 Union County and address the conditions created or exacerbated by the storm;
- Articulate 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
- Contain 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.

Union County upholds six community livability principles by which it guides planning efforts in the County. They are:

- **Provide more transportation choices.** Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation’s dependence on foreign oil, improve air quality,

reduce greenhouse gas emissions, and promote public health.

- **Promote equitable, affordable housing.** Expand location- and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.
- **Enhance economic competitiveness.** Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services, and other basic needs by workers, as well as expanded business access to markets.
- **Support existing communities.** Target federal funding toward existing communities—through strategies like transit-oriented, mixed-use development and land recycling—to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.
- **Coordinate and leverage federal policies and investment.** Align federal policies and funding to remove barriers to collaboration, leverage funding, and increase accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.
- **Value communities and neighborhoods.** Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods.

## Description of Union County

Union County is located in Northern New Jersey, to the southwest of Manhattan, and just to the west of Staten Island to which is connected by the Goethals Bridge. Within New Jersey it is bordered by Middlesex County to the south, Somerset and Morris Counties to the west, Essex County to the north, and Hudson County to the northeast.

Union County is about 102.86 square miles in area and is comprised of 21 municipalities, including the City of Elizabeth, New Jersey’s fourth largest city. Union County’s municipalities (shown in Figure 1) include:

Berkeley Heights	Kenilworth	Roselle Park
Clark	Linden	Scotch Plains
Cranford	Mountainside	Springfield
Elizabeth	New Providence	Summit
Fanwood	Plainfield	Union Township
Garwood	Rahway	Westfield
Hillside	Roselle	Winfield

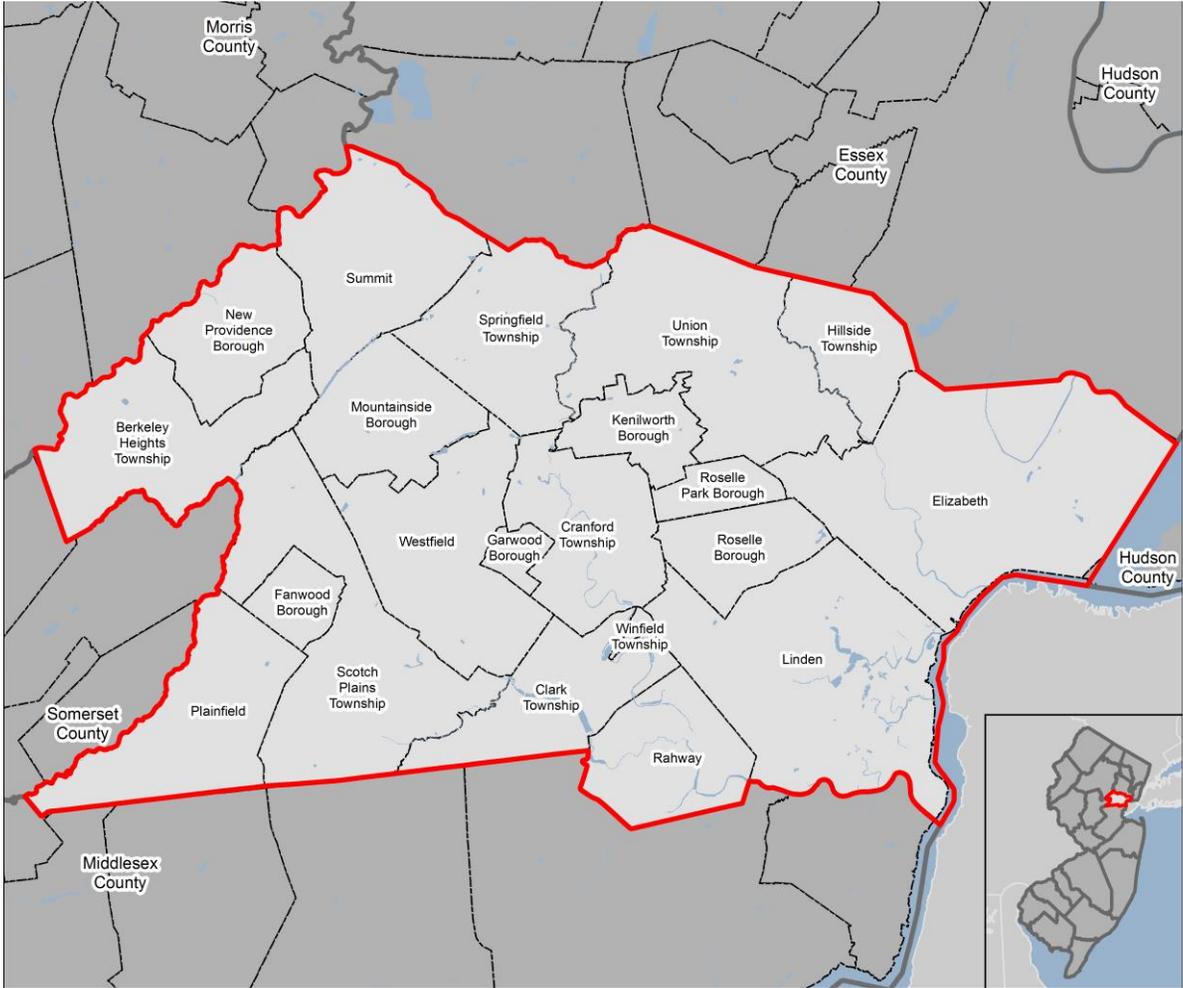
Union County serves as a major transportation hub in New Jersey. The County’s transportation network includes all modes of transportation including highway, bus, rail, air, and water. Parts

of Union County are just minutes away from Newark Liberty International Airport. The New Jersey Turnpike (I-95), the Garden State Parkway, and I-78 all cross through Union County. The County is also served by five New Jersey Transit rail lines: the Northeast Corridor, the North Jersey Coast Line, the Raritan Valley Line, the Gladstone Line, and the Morristown Line. This extensive transportation network has greatly influenced the development of the County.

Union County is highly developed and urbanized with a population of approximately 543,976, according to the U.S. Census Bureau’s 2012 American Community Survey estimate. The County expects to see continued population growth through the year 2040. Population forecasts for the year 2040 range from about 607,000 to 638,000. Union County must take such growth into consideration when planning for resiliency against future Sandy-type storms.

In the context of resiliency planning, a growing population for Union County means that the County’s municipalities will need to plan with the following in mind: locating future population growth outside of flood hazard areas; increased impervious surface coverage and decreased groundwater recharge; strains on stormwater systems; and providing emergency services and utilities.

Figure 1: Union County Regional Location



## Assessment of Existing Planning Documents

This section of the SRPR provides an overview of the County's existing planning documents and their relevancy to post-storm recovery and the mitigation of future storm impacts.

### Union County Master Plan, 1998

Phase I of the Union County Master Plan presents the Planning Board's recommendations for the future of Union County as it relates to population, land use, transportation and circulation, and economic development. It represents the direction that the County should pursue to achieve the optimum relationship between land uses, protection of the natural environment, and development of efficient transportation systems.

The Union County Master Plan identifies four major goals for the County. These goals include:

- **Housing:** Promote a broad range of housing opportunities for all income levels and household types by encouraging the maintenance or rehabilitation of the existing housing stock and through the construction of new housing units.
- **Development:** Facilitate the development of Union County by directing new growth to environmentally suitable areas that can be provided with essential infrastructure and support facilities and to revitalize the urban centers and corridors within the County.

- **Transportation and Circulation:** Promote the development of an improved balance, multi-modal transportation system that integrates and links highway, bus, rail, air, and waterborne transport systems, and pedestrian and bicycle facilities.
- **Economic Development:** Continue County sponsored economic development efforts to reduce unemployment, provide year round employment opportunities, and enhance the tax base by encouraging compatible industrial, commercial, office, and retail facilities to locate or expand in Union County.

The Union County Master Plan's planning goals and objectives are designed to address major issues and influences that impact Union County's housing, land use, transportation/circulation, and economic development. The County's goals and objectives recognize the interrelationships of related policies of municipalities, regional agencies, and the State regarding the future of development of Union County. The achievement of these goals and objectives requires decision making at many levels of government, as well as the private sector.

### **Union County Master Plan, Open Space and Recreation Plan Element, 1999**

The Open Space and Recreation Element of the Union County Master Plan was prepared as a program of new recreation development and improvements to existing park resources, in addition to modest parkland acquisition.

In the 1999 Open Space and Recreation Plan Element, Union County outlines the study that was undertaken to determine and address user needs, preferences, and perceived deficiencies of existing parks. It also outlines a program of \$24 million in both repairs to existing park facilities and construction of new park facilities, as well as \$7,000,000 in acquisition of approximately 100 acres of additional parkland.

The Plan outlines the steps that the County has taken to formulate the recommendations for the rehabilitation of current facilities and the construction of new recreational facilities: base mapping of the parks, an inventory of the parks and facilities, and a needs assessment involving public participation.

### **Union County Land Development Standards, 1999**

This ordinance provides procedures, rules, regulations, and standards for review and approval of land subdivisions and site plans for land development in Union County, which are used to promote the public health, safety, convenience, and general welfare of the County.

### **Union County Master Plan, Open Space and Recreation Plan Element Amendment, 2002**

The 2002 Amendment presents the philosophy of the County and its goals regarding recreation and open space as the following:

- To enhance the quality of life in Union County by providing all members of the public with easily accessible open space, programs, and facilities suitable for active and passive recreational, and leisure activities;
- To enhance the quality of life in Union County by managing, expanding, preserving, developing, and improving the facilities and properties dedicated to the public for the pursuit of active and passive recreational, as well as leisure activities;
- To maintain and preserve existing County parkland while seeking to acquire new parcels when appropriate;
- To protect exceptional natural and scenic resources of the County;
- To acquire lands which protect ecologically sensitive areas and provide wildlife habitat;
- To provide for both passive and active outdoor recreation uses; and
- To acquire lands contiguous to existing parklands when possible.

### **Union County Parks, Recreation, & Open Space Master Plan, 2010**

This Plan identifies and anticipates the major public space needs of the community's residents. It is intended to provide a framework for open space preservation and recreational development through County and municipal planning.

The Plan's goals are as follows:

- Provide an interconnected system of high quality, accessible, multi-use trails and greenway corridors.
- Update parks and facilities giving consideration to recreation trends and priority need areas.
- Provide funding sources for Master Plan implementation.
- Preserve and protect the environment.
- Develop consistent maintenance and appearance of parks.

### **Union County Multi-Jurisdictional Hazard Mitigation Plan, 2010**

The Union County Multi-Jurisdictional Hazard Mitigation Plan (HMP) was approved in January of 2011 and expires in January of 2016. Participating municipalities in the current Plan's planning process included: Berkeley Heights, Cranford, Garwood, Hillside, Linden, New Providence, Plainfield, Rahway, Roselle Park, Springfield, Summit, Union Township, and Westfield. Elizabeth City did not participate in the County Plan, as it has its own approved single jurisdiction hazard mitigation plan.

The HMP was prepared to guide Union County and its municipalities in identifying existing and to plan for future mitigation measures to prevent future losses of lives and property due to flooding. The Plan focuses on five natural hazards and two technological/manmade hazards with the highest potential for damaging physical assets, people, and operations in Union County. These hazards are flood, high winds (straight line winds), earthquake/geological, dam failure, hazardous material releases, severe storms (winter weather), and high winds (tornadoes).

The mitigation planning goals included in this Plan that are relevant to this SRPR include:

- Improve education and outreach efforts regarding potential impacts of hazards and the identification of specific measure that can be taken to reduce their impact;
- Improve data collection, use, and sharing to reduce the impacts of hazards;
- Improve capabilities, coordination, and opportunities at municipal and county levels to plan and implement hazard mitigation projects, programs, and activities;
- Pursue opportunities to implement projects including mitigation of repetitive and severe repetitive loss properties and other appropriate programs and activities.

The Plan's mitigation planning objectives include:

- Increase awareness of risks and understanding of the advantages of mitigation by the general public and by local government officials;

- Improve data available to the county and participating communities for use in future planning efforts;
- Provide government officials and local practitioners with educational opportunities and information regarding best practices for hazard mitigation planning, project identification, and implementation;
- Acquire and maintain detailed data regarding critical facilities such that these sites can be prioritized and risk-assessed for possible mitigation actions;
- Continue support of hazard mitigation planning, project identification, and implementation at the municipal and county level;
- Support increased participation in the National Flood Insurance Program Community Rating system (NFIP/CRS); and
- Provide direct support, where possible, to municipal mitigation programs

In addition, this Hazard Mitigation Plan has identified the following overall action items for Union County:

- Acquisition of flood prone properties in Rahway;
- Community outreach as it applies to hazard mitigation;
- Structural retrofits to flood proof the Police Department in Linden;
- Engineering studies to identify drainage solutions in Garwood; and

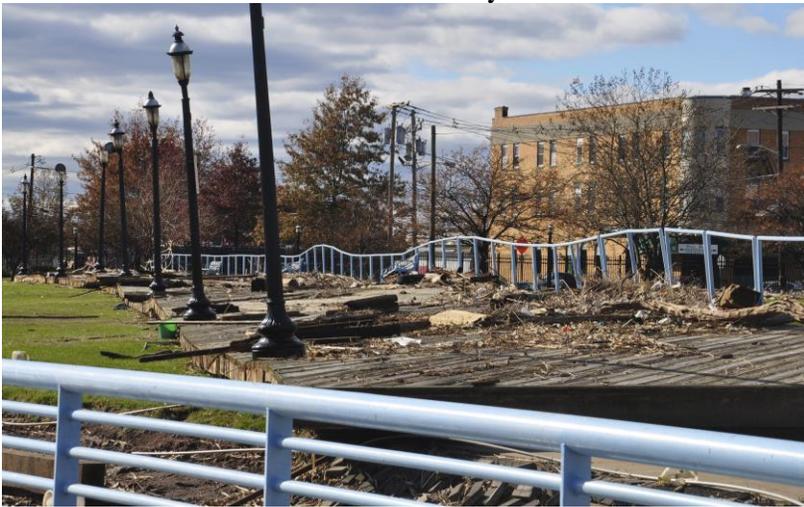
- Backup power installation at the Department of Public Works in Westfield.

This HMP does not identify complete hazard vulnerability assessments on its participating municipalities because it includes many jurisdictions and the available data is not very detailed. Instead, the Plan identifies that it is appropriate for its participating municipalities to address these data deficiencies in anticipation of the next Plan update.

## Evaluation of Superstorm Sandy’s Impacts on Union County

Superstorm Sandy’s impacts on Union County were extensive, including but not limited to: downed trees, power outages, localized flooding, and damage to properties.

**Figure 2: Devastation from the Storm Surge in Eastern Union County**



### Downed Trees

Superstorm Sandy brought high wind speeds that caused trees to fall throughout Union County. In many locations this caused damage and destruction to properties, uprooted infrastructure, and blocked streets. Emergency services were therefore hindered

because they were unable to reach all streets until trees were cleared. Though, in no areas were people completely cut off from road access for more than 6 or 7 hours. In many areas downed trees also brought down power lines, causing power outages. Even after downed trees were cleared from most areas, power outages and transportation problems persisted.

**Figure 3: A fallen mature tree just missed Washington School in Garwood.**



Source: nj.com (<http://bit.ly/UFR8Rv>).

Figure 4: Downed Trees in Cranford Township



Figure 6: Downed Trees in Kenilworth Borough



Figure 5: Downed Trees in Fanwood Borough



Figure 7: Downed Trees in Plainfield City



## Power Outages

All 21 of Union County's municipalities experienced power outages, some lasting up to two weeks in duration. For example, in Linden 90-95% of the population was without power including the Union County Juvenile Detention Center. High winds toppled trees and sent debris flying, which collectively caused the downing of untold numbers of power lines. Utility crews were stretched to the max shutting power to downed wires, rebuilding destroyed substations, and replacing damaged poles. Utility crews were brought in from around the country, but damage was so widespread that restoration took significantly longer than most expected.

While residents suffered through unusually cold temperatures without power, the impact was felt far beyond residents' homes. Power outages left major intersections without signals, area hospitals operated on emergency generators for extended periods of time, businesses were shuttered, and local government officials struggled to communicate with their residents.

Further complicating matters was the lack of accessibility of both gasoline and diesel fuel. While an ample number of generators were available, a shortage of fuel and the inability to pump what was on hand made a bad situation worse. Residents, business owners, and governmental agencies alike waited in line at area service stations to fill vehicles and canisters, reminiscent of the fuel shortages in the early 1970s.

**Figure 8: Downed Trees and Damaged Power Lines in Union Township**



Source: nj.com (<http://bit.ly/1qQ1JYW>).

**Figure 9: Downed Power Lines in Elizabeth**



**Figure 10: A Downed Tree in Roselle Park Borough**



## **Flooding**

Some places in Union County faced serious local flooding as a result of Superstorm Sandy. The Rahway River flooding peaked at 12 ½-13 feet. The river’s walls are only 11 feet high. This resulted in major flooding in downtown Rahway and Linden. Also in Linden, the heavily industrialized area along the Arthur Kill (including the Bayway Refinery) faced millions of dollars in damage from 12-14 foot tidal surges. Areas of the Passaic River and its tributaries also witnessed localized flooding. Furthermore, the pump station at Tremley Point in Linden went offline and faced a tidal surge for 3-4 days. Despite flooding, floodwater in most areas subsided after a few days.

**Figure 11: Veterans Memorial Park Devastation in Elizabeth at Confluence of Elizabeth River and Arthur Kill**



### Damage to Properties

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

As a result of Superstorm Sandy, less than 1% of the households in Union County sustained “severe” or “major” damage, totaling 643 units, but minor damage was common. In total, 2,998 units experienced some level of damage, including 80% owner units and 20% rental units. Within Union County, one census tract in the City of Linden had between 10% and 24% of households experience major or severe damage. Eleven census tracts in Union County had homes that sustained “severe” or “major” damage to housing units, shown on Table 1 at right.

**Figure 12: Property Damage Caused by Fallen Trees**



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

Muni.	Census Tract No.	% of Households with Major/ Severe Damage	House holds	Median Household Income
Elizabeth	305	4	1,464	\$44,136
Elizabeth	309	2	1,719	\$49,621
Elizabeth	306	1	1,144	\$36,607
Elizabeth	308.02	1	850	\$45,536
Elizabeth	302	1	733	\$34,719
Linden	354	13	954	\$57,727
Linden	352	5	775	\$56,384
Linden	353	1	1,842	\$50,490
Rahway	360	7	1,961	\$56,726
Rahway	358	3	1,269	\$46,563
Rahway	359	1	1,231	\$55,244

Source: Community Development Block Grant Disaster Recovery Action Plan, New Jersey Department of Community Affairs, 2013

The CDBG Disaster Recovery Action Plan also outlines the impacts on special needs populations. Union County has 198,668 total housing units, of which 643 (or 0.3%) received major or severe damage from Superstorm Sandy. Of that percentage of damaged households, 405 (or 63%) are low or moderate income households (Sources: American Community Survey, 2006-2010 5-Year Averages, HUD CHAS 2012 data, and FEMA Individual Assistance Data effective March 12, 2013).

**Figure 13: A Damaged Property from a Fallen Tree in Westfield Township**



Source: nj.com (<http://bit.ly/1kqvOM3>).

### **Community Vulnerabilities Exacerbated by Superstorm Sandy**

Sandy exacerbated the vulnerability of homeowners and businesses located in low-lying areas to the flooded waterways that border and run through Union County, particularly in Rahway, Elizabeth, and Linden. In addition, the loss of power exposed residents to the dangers of cold fall nights. These vulnerabilities were magnified in Union County because the County is mostly urban and developed. Furthermore, many utilities such as water, sewage, electricity, telephone lines, and transportation grids are aging, requiring maintenance and repair. These vulnerabilities to future storm events are all magnified in an urban community such as Union County amidst continued population growth and demand for services.

### **Flooding**

As mentioned above, homeowners and residents located in low-lying areas close to waterways are vulnerable to flooding. Following interviews with various County personnel, the following additional vulnerabilities to flooding have been identified:

- The Rahway River and its tributaries are prone to regular flooding. The dams on the Rahway River are not flood-controlled dams. If major flooding were to occur on the Robinson's Branch, the John H. Stamler Police Academy in Scotch Plains would be vulnerable to substantial damages.

- The Passaic River’s tributaries often face overbank flooding during medium-to low-frequency flood flows because backwater flow from the Passaic River tends to build up sediment in the downstream portions of the tributaries.
- The Elizabeth River, which has concrete flumes, also is prone to flooding.
- Union County’s vulnerable roads include Morris Avenue/Route 82 in Springfield and Union Townships, and North/South Avenue (State Route 28), particularly in Cranford.
- Many of Union County’s parks are located in floodplains, where flooding from storms is not uncommon.
- The far eastern part of Union County along the Arthur Kill is vulnerable to storm surge because of its proximity to wetlands and impermeable land cover.

### High Hazard Dams

Union County also has three dams that are classified by the County Hazard Mitigation Plan as “high hazard” dams. These are dams that would likely bring a loss of life to the immediate area if dam failure were to occur. Union County’s high hazard dams are the Robinson’s Branch Reservoir Dam in Clark Township, the Clearwater Detention Dam on Salt Brook in New Providence Borough, and the Shackamaxon Dam on Lambert’s Run in Scotch Plains Township, as seen in Figure 6.

### Communication and Coordination

Another vulnerability that was identified during the aftermath of Superstorm Sandy involved gaps in communication and coordination across public County entities and private entities (though, the communication between public County and municipal personnel was very effective post-Sandy). Most public-private communication occurred between officials in Union County and the utility companies’ officials. The County held daily conference calls with Public Service Electric and Gas Company (PSE&G) and Jersey Central Power and Light (JCP&L), the county’s two power suppliers. Updates and information were then subsequently conveyed to the utility personnel providing post-Sandy aid in the field. However, limitations and gaps in communication and coordination between Union County’s personnel and utility companies’ personnel who were out in the field created problems in recovery efforts and inefficiencies in response. The people providing first hand aid throughout Union County had no clear procedures for communicating with each other across public-private boundaries. As a result, the following energy and transportation problems persisted longer than necessary:

- Central Avenue (at the Clark/Westfield border), which usually supports about 4,000 cars an hour and about 24,000 cars a day, became inaccessible after Sandy. Union County prioritized reopening this road, but the power companies did not effectively transmit or emphasize the importance to their field workers. Because of this lack of communication it was the last road in the County to reopen.

- During the tree removal process, the Department of Public Works had 40 forestry service workers ready and waiting for clearance to begin cutting and clearing trees from power lines and streets. But because of a lack of communication and effective procedures they were unable to take action in high risk, populated, and priority areas and were instead sent to clear trees in parks.
- When aid arrived to Union County from other parts of the country, some of the out of state workers were not clearly directed where in the County they were to go. This led to more time being spent than was necessary for finding out and arriving where their aid was needed.

### **Personnel and Resources**

In general, County and municipal personnel were spread thin after Superstorm Sandy, as municipalities did not have enough services, money, or personnel to provide post-Sandy assistance to their residents. When this happened, they had to request additional aid from the County, which further strained Union County for resources and personnel. For example, in places where power was disconnected for extended periods of time, police departments had to man traffic intersections, while their assistance was also needed for other recovery and response actions. In other cases, emergency shelters could have benefited from more qualified full-time personnel. Additionally, personnel were being trained for tasks outside of their normal area of expertise, which also strained the County.

### **Population Growth**

Furthermore, Union County's anticipated population growth serves as a vulnerability. Any future planning for resiliency has to take into account that the County is anticipating significant growth. Population growth located in municipalities like Rahway, Linden, and Elizabeth that have areas prone to damages from Sandy-type storms will especially serve as a vulnerability in the future.

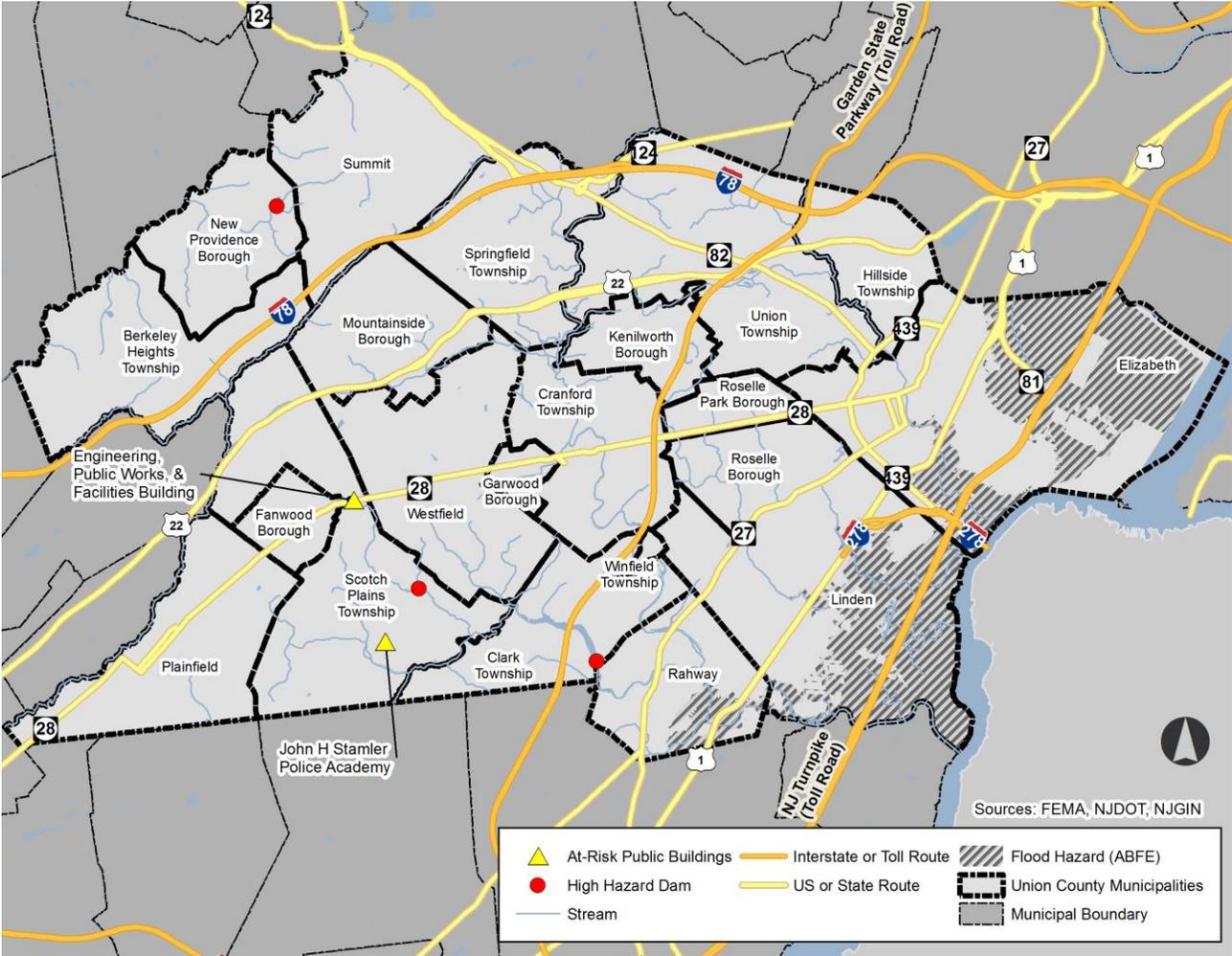
For example, Linden, which has over one third of its land in a flood hazard area and experienced significant flooding in Superstorm Sandy, can expect to accommodate growth for about 5,000 more residents by the year 2040. Rahway, which also faced significant flooding from Superstorm Sandy, can plan for an increase in population of about 4,000 by the 2040. Elizabeth, which also has over one third of its land located in a flood hazard area, can expect about 15,000 more residents by 2040. All population projects referenced here are based on Moody's Analytics population projections.

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

The impacts of Superstorm Sandy have shed light on the areas in which Union County 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 and downed trees and power lines;
- Focusing public agencies on the importance of better public-private communication and coordination methods;
- Encouraging regional solutions to flood- and storm-related impacts; and
- Ensuring that future capital projects are designed and constructed to incorporate features that are resilient to storm- and flood-related impacts.

Figure 14: Community Vulnerabilities in Union County



## Current Status of Post-Sandy Recovery Efforts

In the days and weeks immediately following Superstorm Sandy, Union County took the following emergency protective measures:

- Evacuated stranded residents;
- Barricaded flooded roads and hazards;
- Cleared fallen trees from roads and parks;
- Delivered and arranged for delivery of thousands of gallons of diesel fuel to critical facilities and for emergency generators in municipalities and at major health care and other service providers; and
- Held daily conference calls with Public Service Electric and Gas Company (PSE&G), and Jersey Central Power and Light (JCP&L), and Union County mayors. Updates and information were then subsequently conveyed to the respective personnel providing post-Sandy aid in the field.

In the months following Superstorm Sandy, Union County has undertaken (and continues to take) the following recovery efforts:

- Union County has identified key locations for installation of emergency backup generators. These locations include the Department of Public Works and the John H. Stamler Police Academy, both located in Scotch Plains. The County has applied for grant funding for these projects. Grant award amounts will dictate whether one or both of these installations will be possible.

- The County's Emergency Operations Center (EOC) was renovated to upgrade audio visual capabilities within the Ralph Froehlich Public Safety Building. These renovations, completed during the summer of 2014, provided inter-connectability between the EOC and meeting spaces located throughout the building, allowing communication among key personnel in various parts of the building during an emergency.
- The County applied for and was awarded grant funding to update the Hazard Mitigation Plan. A consultant has been hired to complete the update which is expected in late 2015.

**Figure 15: Fallen trees are cleared from a road in Echo Lake Park in Westfield.**



Figure 16: Fallen trees are cleared from a road in Echo Lake Park in Westfield.



Figure 17: Electrical lines are repaired on Chestnut Street in Roselle Borough.



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

Union County’s municipalities have received recovery aid from various funding programs. The NJ Department of Community Affairs (DCA) has put together an online database of CDBG programs that have aided in Superstorm Sandy recovery across New Jersey. Union County residents have been awarded aid from the following housing programs:

- Homeowner Resettlement Program (HRP);
- Homeowner Reconstruction, Rehabilitation, Elevation, and Mitigation (RREM);
- Small Rental Properties/Landlord Rental Repair Program (LRRP);
- Incentives for Landlords (INCLL);
- Blight Reduction Pilot Program/Neighborhood Enhancement Program (NEP);
- Sandy Special needs Housing Fund (SNH);
- Pre-Development Fund (PREDEV); and
- Sandy Homebuyer Assistance Program (SHBA).

Appendix A describes each of these programs, and Appendix B outlines the awarded and disbursed project funds by municipality, as of the date of this report.

In addition, the City of Elizabeth has been awarded two CDBG Small Business Grants in the amount of \$100,000, and the City of Summit has been awarded one in the amount of \$65,427. These loans may help small businesses pay for Sandy-related expenses

including building repairs, equipment and inventory purchases, rent or mortgage payments, salary expenses, and utility costs.

Furthermore, Cranford Township has been awarded \$30,000 in CDBG Administrative/Planning funds. These funds are designed to provide oversight, monitoring, evaluation, and planning support for programs and grantees. The program also includes planning grant assistance to local or regional entities to guide long-term recovery and redevelopment.

More information on these CDBG programs can be found on the DCA website: <https://www.newjerseyrebuild.org/home.aspx>.

### **FEMA's Hazard Mitigation Grant Program (HMGP) Elevation Program**

This is a \$100 million reimbursement grant program set up to assist homeowners elevate their homes after Superstorm Sandy. The HMGP elevation program provides up to \$30,000 of reimbursement for eligible homeowners to elevate their primary single-family residences. The New Jersey standard is to elevate residential structures 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. The application period for homeowners closed on September 15, 2013.

### **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. Union County has received 99 home loans totaling \$2,135,500, 4 business/economic injury disaster loans totaling \$919,700, and 6 stand-alone economic injury disaster loans totaling \$311,600. Table 2 on page 21 depicts the SBA loans that were awarded to Union County by municipality (Source: NJ.com and the Small Business Administration, 2013).

**Table 2: SBA Disaster Loans by Municipality**

Municipality Awarded	Loan Type	# of Loans	Amount
Clark	Home	2	\$26,200
Cranford	Home	1	\$29,900
Cranford	Economic Injury Disaster	1	\$29,400
Elizabeth	Business and Economic Injury Disaster	1	\$866,300
Elizabeth	Home	7	\$58,200
Fanwood	Home	1	\$18,200
Hillside	Home	2	\$10,700
Kenilworth	Economic Injury Disaster	2	\$219,200
Linden	Business and Economic Injury Disaster	1	\$15,200
Linden	Home	20	\$642,500
Mountainside	Home	2	\$23,700

Municipality Awarded	Loan Type	# of Loans	Amount
Plainfield	Business and Economic Injury Disaster	1	\$8,900
Plainfield	Home	11	\$180,000
Rahway	Home	12	\$108,300
Roselle	Business and Economic Injury Disaster	1	\$29,300
Roselle	Home	3	\$56,300
Roselle	Economic Injury Disaster	1	\$55,800
Roselle Park	Home	2	\$86,500
Scotch Plains	Home	5	\$39,800
Springfield	Home	3	\$46,800
Springfield	Economic Injury Disaster	2	\$7,200
Summit	Home	4	\$289,800
Union	Home	17	\$243,600
Westfield	Home	7	\$273,000

### River Desnagging Project

This project is a cooperative effort between Union County, the Morris County Park Commission, and seven municipalities in Union, Morris, and Somerset Counties. The project involves the cleaning and desnagging of over 12 miles of the Passaic River where it runs through these municipalities. In Union County this includes Berkeley Heights, New Providence, and Summit. These areas along the Passaic are known for their prevalent flooding. The primary goal of this project is to desnag part of the Passaic River of vegetative debris and refuse in order to improve drainage and stream flow and to lessen the severity of flooding along the river. In late 2013 Union County and its partners applied for grant funding through the New Jersey Department of Environmental Protection (NJDEP), and were awarded \$300,000 towards the estimated \$1.2 million desnagging project. Bid specs are currently being drafted to maximize this grant award.

Figure 18: A Snag in the Passaic River



Figure 19: A Fallen Tree Damages a Home in Fanwood (Photo Credit: Tom Kranz)



### Sandy Homeowner/Renter Assistance Program

Union County has been awarded a total of \$1,426,700 to date as part of the Sandy Homeowner/Renter Assistance Program (SHRAP). This State grant program provides eligible households with up to \$15,000 in total assistance paying retroactive/current mortgage, rent and utility payments, and the purchase of essential furnishings or appliances. As of the date of this report, 171 households have been served with SHRAP.

### Storm Recovery Loan Program

The Union County Economic Development Corporation (UCEDC) has been administering loans to Union County small

businesses that were damaged in Superstorm Sandy. The loans have low interest and are good for up to \$50,000. UCEDC's Storm Recovery Loans can be used to help cover the cost of repairing structural damage, as well as the cost of replacing lost inventory and damaged equipment.

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

Only three of Union County's municipalities participate in FEMA's Community Rating System (CRS), including Linden, Rahway, and Roselle (according to FEMA's most updated records from October 1, 2013). 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 National Flood Insurance Program (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.

The City of Linden has been a participant in the CRS since October 1, 1992. It has a Class 8 status, which means that City residents living inside the Special Flood Hazard Area (SFHA) receive a 10% discount on flood insurance premiums, and those living outside the SFHA receive a 5% discount. As of January

2012, there were 239 NFIP policies in place in Linden with a total premium of \$319,198 and a CRS discount of \$28,626 (source: FEMA NFIP).

The City of Rahway has also been a participant in the CRS since October 1, 1992. It has a Class 6 status, which means that City residents living inside the SFHA receive a 20% discount on flood insurance premiums, and those living outside the SFHA receive a 10% discount. As of January 2012, there were 552 NFIP policies in place in Rahway with a total premium of \$701,480 and a CRS discount of \$109,255.

Roselle Borough has also been a participant since October 1, 1992. It has a Class 7 status, so Borough residents living within the SFHA receive a 15% discount on flood insurance premiums, while those living outside the SFHA receive a 5% discount. As of January 2012, there were 266 NFIP policies in place in Roselle with a total premium of \$352,779 and a CRS discount of \$35,063.

As only three of Union County's 21 municipalities participate in the CRS program, the County may consider supporting municipal action to expand participation in the program.

Table 3 shows the list of activities for which Linden, Rahway, and Roselle received points under the CRS, as of January 2012:

**Table 3: CRS Activity Points**

Activity Descriptions	Municipal Points		
	Linden	Rahway	Roselle
#310- Elevation Certificates	60	60	56
#320- Map Information Services	140	140	140
#330- Outreach Projects	58	179	52
#350- Flood Protection Information	16	56	17
#360- Flood Protection Assistance	59	62	0
#410- Additional Flood Data	40	150	144
#420- Open Space Preservation	119	244	222
#430- Higher Regulatory Standards	156	217	198

Activity Descriptions	Municipal Points		
	Linden	Rahway	Roselle
#440- Flood Data Maintenance	90	186	152
#450- Stormwater Management	233	83	0
#510- Floodplain Management Planning	0	27	0
#520- Acquisition and Relocation	0	25	0
#540 Drainage System Maintenance	195	80	0
#630- Dam Safety	67	67	67
<b>Total</b>	<b>1,233</b>	<b>1,576</b>	<b>1,038</b>

Source: FEMA Community Rating System, 2012.

As the data in Table 3 is from January 2012, these standards may be based on the prior CRS manual.

### Community Involvement

Union County's three municipalities that participate in the CRS program all partake in ongoing community involvement and public outreach activities, as mentioned above.

In addition, Union County and FEMA representatives conducted a public information session for Union County residents on November 14, 2012 at Union County College in Cranford. Issues discussed with the public involved some of the various assistance programs discussed in this SRPR, such as the National Flood Insurance Program, the Hazard Mitigation Grant Program, and the Small Business Administration financing programs. At this meeting, County residents had the opportunity to discuss any concerns regarding their individual storm recovery work.

Furthermore, the County has provided online a Health and Well-Being Assessment Survey. The assessment includes a survey that is open to Union County residents in which they can identify continuing, unmet needs related to Superstorm Sandy and its aftermath. This post-Sandy effort is being coordinated by the Union County Bureau of Public Health through funding from a two year Social Services Block Grant. The survey is available on the County website and the first year's results are attached in Appendix C.

### Union County Long Term Recovery Group

The Union County Long Term Recovery Group (UCLTRG) was created in response to Superstorm Sandy and is made up of various non-profit, community, and faith-based organizations.

This group supports the rebuilding efforts of Union County residents in the aftermath of the storm. The UCLTRG provides case management as well as emotional and spiritual care, and seeks donations to assist households that do not have adequate personal resources or insurance for basic needs and recovery.

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

The recovery efforts previously mentioned all serve as rebuilding approaches the County 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 County may also consider coordinating with the appropriate entities and agencies in order to further the following rebuilding approaches and recovery efforts (including providing information on best practices approaches to the following):

- 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.
- Upholding the six community livability principles.
- Guiding future population growth outside of flood hazard areas and areas prone to other Sandy-type storms.

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

Union County has discussed several capital and programmatic improvements in order to recover from Superstorm Sandy and to improve response and increase resiliency to future storms. These actions have been developed in consultation with the officials from a variety of County offices, and are intended to promote resiliency to future storms. Meetings were conducted with public officials on October 29, 2013, November 19, 2013, January 7, 2014, January 28, 2014, and May 13, 2014. The actions that this SRPR recommends are detailed in Table 4 and have been categorized into the immediate/short-term range (within the next 12 months), mid-term (within the next 24 months), and long-term range (within the next 36 months). However, the various actions presented could be changed between the short-, mid-, and long-term as opportunities arise and funding becomes available.

Union County has identified that its priority recommendations include the following:

- Support the expansion of participation in FEMA’s Community Rating System (CRS);
- Evaluate options for evacuating or providing aid to vulnerable populations and neighborhoods;
- Analyze the Raritan Valley stream corridor development designs, redevelopment plans, and site plans to provide recommendations and model stream corridors based on existing best practices;
- Develop a virtual “emergency operation center” with full communication to all County and municipal personnel;
- Provide backup power for traffic lights at key County traffic intersections and at fueling stations; and
- Prepare a comprehensive Recovery and Resiliency Plan that is designed to integrate and coordinate the goals, objectives, and recommended strategies and actions in the County’s updated Hazard Mitigation Plan, Health and Wellbeing Assessment, sustainability initiative, and evaluation of vulnerable populations and neighborhoods.

These actions serve as Union County’s priorities moving forward, but do not comprise the County’s entire strategy to recover from Superstorm Sandy and to improve response and increase resiliency to future storms. These and additional recommendations are outlined below in Table 4.

**Table 4: 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, & Resiliency	Length of Project
<b>Priority Actions</b>			
<p>Support the expansion of municipal participation in FEMA’s Community Rating System (CRS). This will include exploring steps that other counties have taken to assist homeowners.</p>	<p>FEMA’s CRS promotes recovery from Sandy-type storms.</p>	<p>CRS participation results in enhanced public safety, reduced property damage, and discounted flood insurance premium rates, etc.</p>	<p>Short-term priority, but continually ongoing</p>
<p>Evaluate options for evacuating or providing aid to vulnerable neighborhoods and populations. The County has discussed conducting a cross-section to identify lower-income and at-risk populations in relationship to environmental threats and constraints. This project could include mapping land uses, mass transit service, medical and health facilities, emergency shelters, and other supporting infrastructure and their accessibility to vulnerable populations. The project would further outline procedures and actions for improving resiliency in these neighborhoods and for responding to the needs of this population in times of hazards.</p>	<p>This project would identify and map vulnerable populations based on data and definitions from the U.S. Department of Housing &amp; Urban Development, the U.S. Environmental Protection Agency, the Centers for Disease Control, the U.S. Census, and the American Community Survey. Lower-income and at-risk populations often live in areas that are most vulnerable to damage from a Sandy-type storm, but are often unable to evacuate or are overlooked.</p>	<p>This can serve as a way the County can improve resiliency for at-risk populations that otherwise may not be able to provide their own solutions. It also fits with the rewriting of a Strategic Action Plan for community development.</p>	<p>Short-term (Within 12 months)</p>

Action	Relation to Superstorm Sandy's Impacts	Importance to Promoting Recovery, Response, & Resiliency	Length of Project
<p>Analyze the Raritan Valley stream corridor development designs, redevelopment plans, and site plans to provide recommendations and model stream corridors based on existing best practices, in reference to the tributaries of the Raritan River that are located in Union County. This should include green infrastructure and green stormwater management elements.</p>	<p>This area is urbanized and vulnerable to flooding.</p>	<p>This could improve the resiliency of Union County's flood hazard areas along the Raritan Valley stream corridor.</p>	<p>Short-term (Within 12 months)</p>
<p>Develop a virtual "emergency operation center" with full communication to all County and municipal personnel. This would include an electronic "space," intranet, or other setting that utilizes social media such as a blog, website, or other outlet for all County and municipal personnel to meet, communicate, and coordinate. In this electronic space, all relevant county and municipal workers (such as mayors, administrators, public works personnel, engineers, etc.) should have access to contribute and receive inputs.</p>	<p>Union County's post-Sandy recovery efforts faced communication and coordination issues.</p>	<p>An enhanced electronic system could improve cooperation and communication, leading to faster and more effective response and recovery.</p>	<p>Short-term (Within 12 months)</p>

Action	Relation to Superstorm Sandy's Impacts	Importance to Promoting Recovery, Response, & Resiliency	Length of Project
<p>Provide backup power for traffic lights at key County traffic intersections and at fueling stations, including considering alternative forms of backup power such as diesel generators when gas is shut off. This should also include hospitals, emergency operations center, correctional facilities, shelters, and other facilities.</p>	<p>Countywide power outages after Superstorm Sandy caused traffic control issues and significantly decreased fueling stations' capability to serve County residents.</p>	<p>This could improve evacuations during a future storm, and can also improve reliability in service, response time, and access for emergency services post-storm.</p>	<p>Short-term (Within 12 months)</p>
<p>Prepare a comprehensive Recovery and Resiliency Plan that is designed to integrate and coordinate the goals, objectives, and recommended strategies and actions in the County's updated Hazard Mitigation Plan, Health and Wellbeing Assessment, sustainability initiative, and evaluation of vulnerable populations and neighborhoods.</p>	<p>All components of this action relate to recovering from and becoming more resilient to impacts of Sandy-type storms.</p>	<p>This action is a comprehensive approach in that it encompasses goals and objectives of various ongoing recovery and resiliency efforts in the County that complement each other.</p>	<p>Short-term (Within 12 months)</p>

Action	Relation to Superstorm Sandy's Impacts	Importance to Promoting Recovery, Response, & Resiliency	Length of Project
<b>Additional Actions</b>			
<p>Improve the County's system for documenting emergency work, including descriptions of work and hour logs. This should also include increasing hardware inventory for performing these tasks, such as more laptops in the Department of Public Works' trucks.</p>	<p>Union County uses Cartegraph (an operations management system), which utilizes electronic and real-time services for tracking costs for reimbursements. Though, the County could benefit from an updated system, and more and newer electronic devices for performing these field tasks.</p>	<p>This action can increase Union County's capacity to provide effective and time-sensitive emergency services.</p>	<p>Short-term (Within 12 months)</p>
<p>Improve outreach and education for the public about emergency awareness.</p>	<p>Many people were reluctant to evacuate prior to Sandy and did not understand the importance of evacuating.</p>	<p>Effective outreach and public response can minimize the amount of residents remaining in hazard areas after a storm.</p>	<p>Short-term (Within 12 months)</p>

Action	Relation to Superstorm Sandy's Impacts	Importance to Promoting Recovery, Response, & Resiliency	Length of Project
<p>Provide recommendations to urban coastal towns about resilient land uses and land use planning practices for coastal areas. This can be done through good engineering practices and design, creating coastal resiliency plans, restoring wetlands where possible, and hardening existing facilities where possible.</p>	<p>This area is urbanized and vulnerable to flooding.</p>	<p>This can help improve locational decisions for future development in Union County.</p>	<p>Mid-term (Within 24 months)</p>
<p>Update the County Transportation Master Plan, including disseminating its emergency evacuation plan.</p>	<p>Union County residents needed effective evacuation services during Superstorm Sandy.</p>	<p>This will shed light to improvements in evacuation services.</p>	<p>Mid-term (Within 24 months)</p>
<p>Video log all county roads.</p>	<p>Many roads became inaccessible after Superstorm Sandy.</p>	<p>An inventory of the quality and status of roads would allow emergency services to more effectively serve the public.</p>	<p>Long-term (Within 36 months)</p>

<b>Action</b>	<b>Relation to Superstorm Sandy's Impacts</b>	<b>Importance to Promoting Recovery, Response, &amp; Resiliency</b>	<b>Length of Project</b>
<p>Create a GPS system for work that is performed during and after emergencies to identify where workers and County vehicles are, to be monitored from a virtual emergency operations center (EOC).</p>	<p>Union County's post-Sandy recovery efforts faced communication and coordination issues.</p>	<p>This action could improve inter-departmental cooperation and communication, leading to faster and more effective response and recovery. This could also help when support teams from out of state come to the County, as the EOC can make sure they are working in the right area.</p>	<p>Long-term (Within 36 months)</p>

### Summary of Actions and Priorities

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

Based on the discussion of Union County’s recommended actions in Table 4, the County has identified that its priority recommendations include the following:

- Support the expansion of participation in FEMA’s Community Rating System (CRS);
- Evaluate options for evacuating or providing aid to vulnerable populations and neighborhoods;
- Analyze the Raritan Valley stream corridor development designs, redevelopment plans, and site plans to provide recommendations and model stream corridors based on existing best practices;
- Develop a virtual “emergency operation center” with full communication to all County and municipal personnel;
- Provide backup power for traffic lights at key County traffic intersections and at fueling stations; and
- Prepare a comprehensive Recovery and Resiliency Plan that is designed to integrate and coordinate the goals, objectives, and recommended strategies and actions in the County’s updated Hazard Mitigation Plan, Health and Wellbeing Assessment, sustainability initiative, and evaluation of vulnerable populations and neighborhoods.

### Immediate/Short-term needs include:

- Support the expansion of participation in FEMA’s Community Rating System (CRS);
- Evaluate options for evacuating or providing aid to vulnerable neighborhoods and populations;
- Analyze the Raritan Valley stream corridor development designs, redevelopment plans, and site plans to provide recommendations and model stream corridors based on existing best practices;
- Develop a virtual “emergency operation center” with full communication to all County and municipal personnel;
- Provide backup power for traffic lights at key County traffic intersections and at fueling stations, including considering alternative forms of backup power such as diesel generators when gas is shut off;
- Prepare a comprehensive Recovery and Resiliency Plan that is designed to integrate and coordinate the goals, objectives, and recommended strategies and actions in the County’s updated Hazard Mitigation Plan, Health and Wellbeing Assessment, sustainability initiative, and evaluation of vulnerable populations and neighborhoods.
- Improve the County’s system for documenting emergency work, including descriptions of work and hour logs. This should also include increasing hardware inventory for performing these tasks, such as more laptops in the Department of Public Works’ trucks; and
- Improve outreach and education for the public about emergency awareness.

**Mid-term needs include:**

- Provide recommendations to urban coastal towns about resilient land uses and land use planning practices for coastal areas; and
- Update the County Transportation Master Plan.

**Long-term needs include:**

- Video log all county roads; and
- Create a GPS system for work that is performed during and after emergencies to identify where workers and County vehicles are, to be monitored from a virtual emergency operations center.

**Post-Sandy Planning Assistance Grant Requests**

Based on the foregoing priorities, the County 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:

- Evaluate options for evacuating or providing aid to vulnerable neighborhoods and populations;
- Provide recommendations to urban coastal towns about resilient land uses and land use planning practices for coastal areas;

- Analyze the Raritan Valley stream corridor development designs, redevelopment plans, and site plans to provide recommendations and model stream corridors based on existing best practices;
- Improve the system for documenting what work is done during an emergency, including descriptions of work and hour logs;
- Develop a virtual “emergency operation center” with full communication to all County and municipal personnel; and
- Prepare a comprehensive Recovery and Resiliency Plan that is designed to integrate and coordinate the goals, objectives, and recommended strategies and actions in the County’s updated Hazard Mitigation Plan, Health and Wellbeing Assessment, sustainability initiative, and evaluation of vulnerable populations and neighborhoods.

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

**Appendix A: List of Community Development Block Grant (CDBG) Disaster Recovery Programs Awarded to Union County Municipalities**

---

**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, 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. The state sent preliminary-award letters to 4,303 homeowners and has estimated an average award of \$100,000 per application until final award of construction amount is known. Once final award is determined, this amount will be adjusted.

**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.

**Incentives for Landlords (INCLL):** This program provides rental property owners roughly the difference between 30% of a tenant’s monthly income and federal fair market rents each month over a two-year period and allows rental property owners to provide affordable rental housing. For example, a landlord in Monmouth County would receive the fair market rent for a two-bedroom apartment which is \$1,410 (approximately \$517 paid by a tenant with an incentive of approximately \$893 paid by the State). Participating landlords may apply for between one and 25 units per county.

**Blight Reduction Pilot Program/Neighborhood Enhancement Program (NEP):** The Neighborhood Enhancement Program provides funding to stabilize “threatened but viable” neighborhoods, through the creation of affordable housing. The Program is intended to be a component of local plans to invest in and rebuild these communities. It funds the rehabilitation or re-use of abandoned, foreclosed

and vacant housing, structures or lots and addresses the shortages of affordable housing caused by the storm, while at the same time refunding blighted buildings to viability. The program provides zero percent loans to eligible entities that will create for sale or rental housing units through either rehabilitation or redevelopment. Initial occupancy of the units developed under this program is restricted to households at or below 80% of Area Median Income as defined by HUD. \$30,000,000 in CDBG-DR funds are allocated to this program.

**Sandy Special Needs Housing Fund (SNH):** This program is dedicated to the development of quality, permanent supportive housing located in the nine most impacted counties. SNH can be used to fund permanent supportive rental housing or community residences in which some or all of the units are affordable to low- and moderate-income special needs residents. Special needs populations include individuals with mental, physical, or developmental disabilities, and other at-risk populations identified by the State.

The program provides loans to developers of projects which combine rental housing and support services. Developers may apply for stand-alone financing or for program funding in conjunction with the Low Income Housing Tax Credit Program, tax-exempt bonds, and/or Fund for Restoration of Multifamily Housing. The State has dedicated \$25,000,000 in CDBG-DR funds to this program.

**Pre-Development Fund (PREDEV):** The State has developed in its Community Disaster Block Grant (CDBG) Action Plan various programs to address the substantial damage that Superstorm Sandy caused to New Jersey’s housing sector. The “Predevelopment Loan Fund for Affordable Rental Housing” was among the programs created by the State to address the storm’s impact on the State’s rental market.

This program will provide financing in the form of a low interest loan to non-profit developers for predevelopment costs associated with developing properties that are unsafe, underutilized, or in foreclosure. Eligible uses of loan proceeds include project feasibility studies, environmental studies (e.g., Phase 1 and Phase 2), engineering studies, architectural fees, and other soft costs.

**Sandy Homebuyer Assistance Program (SHBA):** SHBA provides financial incentives for low- and moderate-income households to purchase a home. Qualified homebuyers may be eligible for up to \$50,000 in assistance to help with the purchase of a home. The assistance is in the form of a subordinate mortgage. There are no monthly payments and the loan is forgiven 20% a year over a 5-year period.

SHBA is designed to boost the purchasing power of low and moderate-income households, primarily renters displaced by Sandy, to successfully purchase a home, as well as to stimulate the market for new and restored homes.

**Appendix B: CDBG Disaster Recovery Program Awarded Amounts to Union County Municipalities**

---

UNION COUNTY — STRATEGIC RECOVERY PLANNING REPORT

		Clark	Elizabeth	Hillside	Linden	Plainfield	Rahway	Roselle	Roselle Park	Scotch Plains	Summit	Union	Westfield	Union County
<b>HRP*</b>	<b>LMI Units†</b>	1	2	3	15	1	15	2	0	0	0	1	0	39
	<b>UN Units†</b>	0	0	1	17	1	12	0	1	1	1	3	1	38
	<b>Total Units</b>	1	2	4	32	2	27	2	1	1	1	4	1	777
	<b>Awarded</b>	\$10,000	\$20,000	\$40,000	\$320,000	\$20,000	\$270,000	\$20,000	\$10,000	\$10,000	\$10,000	\$40,000	\$10,000	\$770,000
	<b>Disbursed</b>	\$10,000	\$20,000	\$40,000	\$320,000	\$20,000	\$270,000	\$20,000	\$10,000	\$10,000	\$10,000	\$40,000	\$10,000	\$770,000
<b>RREM*</b>	<b>LMI Units*</b>	-	1	2	10	0	12	1	0	0	-	2	0	28
	<b>UN Units*</b>	-	0	0	9	1	6	0	1	1	-	1	1	20
	<b>Total Units</b>	-	1	2	19	1	18	1	1	1	-	3	1	48
	<b>Pre-Awarded</b>	-	\$100,000	\$0	\$1,500,000	\$0	\$1,000,000	\$100,000	\$100,000	\$0	-	\$200,000	\$100,000	\$3,100,000
	<b>Obligated</b>	-	\$0	\$217,700	\$282,541	\$13,115	\$907,559	\$0	\$0	\$58,600	-	\$165,000	\$0	\$1,644,515
	<b>Disbursed</b>	-	\$0	\$5,734	\$76,157	\$0	\$142,573	\$0	\$0	\$0	-	\$0	\$0	\$224,464
<b>LRRP*</b>	<b>Units</b>	-	-	6	9	-	2	3	-	-	-	1	-	21
	<b>Awarded</b>	-	-	\$180,000	\$270,000	-	\$60,000	\$90,000	-	-	-	\$30,000	-	\$630,000
	<b>Disbursed</b>	-	-	\$0	\$0	-	\$0	\$0	-	-	-	\$0	-	\$0
<b>INCLL*</b>	<b>Units</b>	-	7	-	1	-	-	-	-	-	-	-	-	8
	<b>Awarded</b>	-	\$112,231	-	\$7,200	-	-	-	-	-	-	-	-	\$119,431
	<b>Disbursed</b>	-	\$5,454	-	\$626	-	-	-	-	-	-	-	-	\$6,080

- \* **HRP:** Homeowner Resettlement Program
- \* **RREM:** Homeowner Reconstruction, Rehabilitation, Elevation, and Mitigation
- \* **LRRP:** Small Rental Properties/Landlord Rental Repair Program
- \* **INCLL:** Incentives for Landlords
- † **LMI:** low and moderate income units
- † **UN:** urgent need units.

**UNION COUNTY — STRATEGIC RECOVERY PLANNING REPORT**

		Clark	Elizabeth	Hillside	Linden	Plainfield	Rahway	Roselle	Roselle Park	Scotch Plains	Summit	Union	Westfield	Union County
<b>NEP*</b>	<b>Units</b>	-	24	-	-	1	-	-	-	-	-	-	-	25
	<b>Awarded</b>	-	\$3,647,000	-	-	\$96,917	-	-	-	-	-	-	-	\$3,743,917
	<b>Disbursed</b>	-	\$0	-	-	\$0	-	-	-	-	-	-	-	\$0
<b>SNH*</b>	<b>Units</b>	-	-	-	1	1	-	-	-	-	-	-	-	2
	<b>Awarded</b>	-	-	-	\$552,051	\$664,433	-	-	-	-	-	-	-	\$1,216,484
	<b>Disbursed</b>	-	-	-	\$0	\$0	-	-	-	-	-	-	-	\$0
<b>PREDEV*</b>	<b>Units</b>	-	-	-	-	65	-	-	-	-	-	-	-	65
	<b>Awarded</b>	-	-	-	-	\$500,00	-	-	-	-	-	-	-	\$500,000
	<b>Disbursed</b>	-	-	-	-	\$0	-	-	-	-	-	-	-	\$0
<b>SHBA*</b>	<b>Units</b>	-	1	-	-	-	1	1	-	-	-	-	-	3
	<b>Awarded</b>	-	\$50,000	-	-	-	\$50,000	\$50,000	-	-	-	-	-	\$150,000
	<b>Disbursed</b>	-	\$50,000	-	-	-	\$50,000	\$50,000	-	-	-	-	-	\$150,000
<b>Total</b>	<b>Units</b>	1	35	12	62	70	48	7	2	2	2	8	2	249
	<b>Awarded</b>	\$10,000	\$3,829,231	\$437,700	\$1,431,792	\$1,294,465	\$1,287,559	\$160,000	\$10,000	\$68,600	\$110,000	\$235,000	\$10,000	\$8,774,347
	<b>Disbursed</b>	\$10,000	\$75,454	\$45,734	\$396,783	\$20,000	\$462,573	\$70,000	\$10,000	\$10,000	\$10,000	\$40,000	\$10,000	\$1,150,544

\* **NEP:** Blight Reduction Pilot Program/Neighborhood Enhancement Program  
**SNH:** Sandy Special Needs Housing Fund  
**PREDEV:** Pre-Development Fund  
**SHBA:** Sandy Homebuyer Assistance Program

**Appendix C: Superstorm Sandy Health & Wellbeing Assessment Report Template**

---

# SUPERSTORM SANDY HEALTH & WELLBEING ASSESSMENT REPORT TEMPLATE

Union County, New Jersey  
May 2014



## Contents

A. County Demographics.....	2
B. Impacts of Hurricane Sandy .....	3
B1. Impact on Finances: .....	3
B2. Impact on Personal Health.....	3
B3. Top Concerns Reported Due as Result of Superstorm Sandy.....	4
C. NJ Residents’ Awareness of Resources .....	6
D. Key Informant Interview Summary .....	7
E. Evaluation Criteria.....	9

## A. County Demographics

### 1) Summary of individuals surveyed

Survey Demographics		
		Percentage of Respondents
<b>Sex</b>	Male	34.1%
	Female	65.9%
<b>Age</b>	18 -29	9.0%
	30-44	28.7%
	45-54	19.7%
	55-64	27.0%
	65-74	9.0%
	75 years and older	6.6%
<b>Ethnicity/Race</b>	Asian/ Asian-American	1.6%
	Black/African-American	16.4%
	White/Caucasian	30.8%
	Hispanic/Latino	29.5%
	Other	1.6%
<b>Housing Characteristics</b>	Single-Family Home	73.3%
	Attached Home	1.2%
	Apartment/Condo	22.1%
	Mobile Home	0%
	Other	3.5%
	1-Person Household	11.7%
	2- Person Households	22.5%
	3- Person Households	18.3%
	4- Person Households	34.2%
	5 or More - Person Households	13.3%

## B. Impacts of Hurricane Sandy

### B1. Impact on Finances:

Percentage of survey respondents who reported the following impacts had a financial impact due to Superstorm Sandy:

Reported Impact:	Percentage of Respondents
Lost power	90.5%
Home was damaged	33.3%
Car was damaged	11.9%
Displaced from home	44.3%
Stayed with or at:	
Friends & relatives	29.4%
Shelter	3.2%
Hotel	9.5%
Still displaced a year out	1.6%
Temporary loss of income (Less than 6 Months)	37.4%
Permanently loss of income (more than 6 months)	4.1%

### B2. Impact on Personal Health

a) Percentage of respondents and their self-reported health status before and after Superstorm Sandy:

Health Status	Very Good (%)	Good (%)	Neither good nor poor (%)	Poor (%)	Very Poor (%)
Before Superstorm Sandy	45.0	41.7%	10.0%	1.7%	0
After Superstorm Sandy	23.3%	34.2%	27.5%	7.5%	5.0%

**b) Percentage of respondents who described their recovery from Superstorm Sandy as:**

Status of Reported Recovery	Percentage
Completely recovered	45.9%
Mostly recovered	39.6%
Recovered about halfway	3.6%
Recovered a little	7.2%
Not Recovered at all	3.6%

**c) Percentage of respondents who needed service provider assistance, such as a visiting nurse, meal delivery, or other home-based care service as a result of Superstorm Sandy; \_\_7.5%\_\_**

**c1) Percentage of “yes” respondents who are still receiving service; \_\_0%\_\_**

**d) Percentage of respondents who said they visited a hospital for Medical Care as a result of the storm; \_\_3.2%\_\_**

**B3. Top Concerns Reported Due as Result of Superstorm Sandy**

**a) As a result of Superstorm Sandy, what were the top five (5) Health & Well Being concerns reported by respondents, and percentage of respondents who reported these concerns?**

Top 5 Health & Wellbeing Concerns	Percentage of Respondents
1. Safe Place to Live	33.3%
2. Money	32.5%
3. Work/Employment	26.7%
Housing	26.7%
4. Good Neighborhoods/Neighbors	24.2%
5. Affordable Healthy Food	22.5%

**b) As a result of Superstorm Sandy, what were the top five (5) services utilized by respondents, and percentage of respondents who reported these services?**

Top 5 services utilized	Percentage of Respondents
1. Money	57.4%
2. Food	24.6%
3. Medical	21.3%
4. Government Grants	18.0%
5. Counseling for Depression	10.4%

**c) As a result of Superstorm Sandy, what were the top five (5) mental health issues reported by respondents, and percentage of respondents who reported these issues?**

Top 5 Mental Health Issues	Percentage of Respondents
1. Avoiding Reminders	41.8%
2. Over Protective	40.3%
3. Recurring Dreams	28.4%
4. Anger	25.4%
5. Physical Symptoms	25.4%

**d) As a result to Superstorm Sandy, what were the top five (5) conditions that respondents identified as preventing them from a successful recovery?**

Top conditions preventing successful recovery
1. Stress/Mental health issues
2. Insurance coverage

3. Finances/funding
4. Damaged infrastructure
5. Translation services

### C. NJ Residents' Awareness of Resources

Percentage of respondents who are aware of the following services/resources, and are still in need of these services/resources:

Type of Services/Resource	% Aware	% still in need of the Service/Resources
Case Management	94.7%	5.3%
Counseling Services	96.0%	4.0%
Federal Emergency Management Agency (FEMA)	97.3%	2.7%
NJ Hope and Healing	94.4%	5.6%
NJ 211	100%	0%
NJ Register Ready	100%	0%
Sandy Homeowner and Renter Assistance Program (SHRAP)	88.5%	11.5%
United Way/Red Cross/Charity	94.4%	5.6%

**Narrative:**

There were a few consistent themes noted during the focus groups. A substantial number of attendees voiced concerns over recovery from Superstorm Sandy with some of the recovery concerns not being related to public health issues. A large cross-section of respondents and those residents in attendance at the focus groups were concerned largely over recovery issues related to rebuilding their homes and neighborhoods. There were a significant number of respondents that discussed concerns related to advertisement of federal recovery resources and to the length of time, it has taken federal recovery resources to provide any assistance or additional guidance. There were also additional concerns that future storm/disaster events will yield the same degree of response from federal resources.

Sheltering was a major concern among attendees at the focus groups. There were issues related to space and the appropriateness of particular shelters for all those requiring sheltering (e.g. medical needs and service animal/pet accommodating shelters). Additionally, concerns over space in shelters and the

number of available spaces were also a significant concern. There was discussion at the focus groups regarding space at shelters and the number of shelters that were open and able to receive residents.

Individuals recovering from Superstorm Sandy voiced concerns over continued stressors directly related to the storm. Residents voiced continued stress reactions during times of high winds or rains. There are also concerns discussed over physical responses secondary to stress because of slow recovery assistance from Superstorm Sandy and during storms following Superstorm Sandy. Access to local mental health professionals to assist recovery victims with these issues has been difficult for residents to locate and to utilize. Other health concerns are related to storm damage. Residents are concerned over mold in their homes and ground contamination secondary to flooding. Residents voiced frustration in locating funding for mold abatement and difficulty with local and county government offices allocating funding and resources for testing for ground contamination.

There is a significant discrepancy between resident’s knowledge of available resources such as NJ 211 and NJ Register Ready. Based on survey responses, one-hundred percent of residents are familiar with both resources. However, residents attending the focus groups collectively did not know how to access these resources nor were they aware that these resources were available. It is difficult to determine the reason(s) for the discrepancy. A likely cause may be some degree of survey fatigue of those individuals completing the surveys.

#### D. Key Informant Interview Summary

<b>Organization (Name, City, County)</b>	<b>Did the key informant feel that his/her organization was adequately prepared to assist individuals affected by Sandy?</b>	<b>Have the organization been able to meet the needs of individuals seeking services due to Sandy?</b>
Elizabeth City, DHHS	No	No. No but are in the process of planning. We have completed CERT Training and have almost completed our POD plans
City of Westfield, Emergency Management	No. Interoperable communications are still an issue in the county which hurts response coordination. We need a broader education effort on emergency preparedness including acceptable methods of home heating in cold weather and generator use.	Yes. For the most part.
Union County, PIO	For the most part. Need to expand presence through social media.	Yes.

Springfield, OEM	Yes. We did the best we could with what we had. Lacked adequate reserves of fuel, food, manpower and consumables (batteries, extension cords, gas cans, shelter supplies, etc.)	I believe we helped everyone who requested help. There were one or two individuals with health issues beyond our ability to deal with at the shelter some nights.
City of Linden, Emergency Management	No. Manpower was limited since so many of our staff was affected by the storm. Cooperation and coordination with the county was excellent.	Yes, so far.
Union County, Office of Emergency Management	No. Personnel and resources. Old infrastructure and limitations in roads. It took the Red Cross 8 days to get staff into the area and another day to get up and running. County staff exhausted by that point.	We were not able to get exactly what folks wanted, but we were able to meet all needs requested.
Springfield Township, Administrator	Yes. We were prepared but not for the intensity of the storm and the lack of leadership from Jersey Central Power and Light (JCPL). With employees not being able to get to Springfield, resources were much stretched.	We did our best, but the level of care some residents needed/ wanted was beyond that of the township's capacity.
Clark Township, Health Department	I am a single person H.O. I started preparing and issuing alerts at 3 days prior to the storm. I am the only staff person in the Clark H.D. I am also the registrar of Vital Statistics and the Qualified Purchasing Agent	I would say yes.
MRC and DRCC	MRC and DRC has been preparing for disasters through conferences spending time together to form relationships of trust	Not everyone. Many of the people in the shelters were elderly. They were uncomfortable physically and at times disoriented.
Linden Police	No. Lack of support, political interference from uneducated elected officials. Lack of funding to provide immediate aid.	No. Lack of full-time staff dedicated to recovery on a municipal level.
Volunteer, Linden	Our city was not prepared.	

Plainfield OEM	No. More equipment and supplies were needed. Feeding of officers, telecommunications issues. Need for more storm and/or hazard mitigation equipment.	Yes. From a first-responder viewpoint.
Linden Health Department	No. Hampered by lack of means of communications.	Health Department continues to respond to all requests for assistance.
Linden Health Department	No. Local political support was not received. Money was not given for anything. No information was relayed by officials. No maps, no list of elderly with oxygen or other handicaps, specials needs.	No response to survey.
Westfield Regional Health Department	Yes, had practiced with emergency plans from Irene.	Many people unable to get answers from FEMA.

**Narrative:**

The challenges faced by a number of the key informants are related to infrastructure failures, supply issues and workforce resources. Based on the interviews and survey responses the vast majority of individuals needs were met. A number of key informants have identified opportunities for improvement in their respective organizations and have begun to take action to improve response and recovery assets and resources.

**E. Evaluation Criteria**

**A. Survey:**

1. How many surveys did you distribute?  
An exact number of surveys distributed is difficult to tabulate. The number of paper copies distributed was in the hundreds. Specifically, 475 surveys were distributed to various church and community organizations, additionally sixteen of the seventeen municipal libraries twenty-five surveys. Each church, community group and municipal library was provided surveys in both in English and Spanish. In addition to paper surveys, the survey was made available in two electronic, web-based formats. The surveys were advertised on Union County’s home page, Twitter and Facebook pages and were also advertised through Union County First Alert.
  
2. How many survey responses did you receive?  
Surveys were received in paper and electronic formats with 147 total surveys being returned.

3. How many individuals contacted your local health department (either by phone, fax, email or telephone) inquiring about health and/or other assistance after receiving the survey? 0

**B. Key Informants:**

1. How many key informants interviews did you conduct?  
15

**C. Focus Groups:**

1. How many focus groups did you conduct?  
2
2. What was the total number of focus groups participants for all focus groups conducted?  
There were a combined total of 31 participants in attendance at the focus groups.
3. Did you connect any participants of the focus group(s) who reported unmet needs to resources?  
Yes

3a. If yes, how many?

This number is difficult to tabulate. Discussions of available resources were conducted during each focus group. Representatives from partner organizations were available at each focus group, those residents having unmet needs connected with partner organizations directly while at the focus groups. Follow-up was arranged directly between the residents and partner organizations.