

Bergen County Multi-Jurisdictional All-Hazards Mitigation Plan
2015 Update



Bergen County Office of Emergency Management

FEMA Approval Date: April 13, 2015

BERGEN COUNTY MULTI-JURISDICTIONAL ALL-HAZARDS MITIGATION PLAN UPDATE 2015

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1. Introduction

WHAT'S NEW IN CHAPTER 1?

- *This chapter contains several minor text updates regarding the Plan goals and objectives.*
- *The chapter has been reorganized to present the purpose of the plan in a more straightforward manner.*
- *Goals and objectives have been slightly modified to more closely coincide with those found in the 2014 NJ State Mitigation Plan.*

1.1 Purpose and Scope of the Plan Update

The Disaster Mitigation Act of 2000 (DMA 2000) defines *hazard mitigation* as any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards.¹ This may include a wide range of actions including, but not limited to: adopting and enforcing building codes that harden structures to potential damage; retrofitting buildings, bridges, and other infrastructure; planning for businesses to reduce down-time if a hazard occurs; and educating the public to prepare, mitigate damage, and recover more quickly after impact of a hazard.

The Federal Emergency Management Agency (FEMA) promotes hazard mitigation planning as a fundamental part of a four-phase cycle of emergency management:

Mitigation: activities to eliminate or reduce the effects of future hazardous events;

Preparedness: planning and practicing responses to emergencies and hazardous events;

Response: assistance during and immediately following a disaster to safeguard life and property; and

Recovery: operations geared toward returning the community to pre-disaster conditions.

1.2 Purpose of Creating a Natural Hazard Mitigation Plan

The 2014 Natural Hazard Mitigation Plan Update documents Bergen County's continuing attempts to identify potential natural hazards and associated risks across jurisdictions and to develop an integrated mitigation strategy. The Plan Update addresses the mitigation of potential damage to public, quasi-public, and private entities, facilities, and infrastructure. Through measures proposed in this plan, Bergen County seeks to substantially reduce and/or eliminate long-term risk to life and properties associated with natural hazards.

The planning process helps to prepare citizens and government agencies to better respond when disasters occur. Also, mitigation planning allows Bergen County and its municipalities to remain eligible for mitigation grant funding for mitigation projects that will reduce the impact of future disaster events.

The long-term benefits of mitigation planning include:

- An increased understanding of hazards faced by communities;
- A more sustainable and disaster-resistant community;
- Financial savings through partnerships that support planning and mitigation efforts;
- Focused use of limited resources on hazards that have the biggest impact on the community; and
- Reduced long-term impacts and damages to human health and structures and reduced repair costs.

This Plan Update specifically emphasizes natural hazards and does not assess the risks or associated mitigation measures of human-caused hazards (such as terrorism) which are not within the purview of this initiative. Such analyses and planning are being pursued at the federal, state and local levels under other efforts.

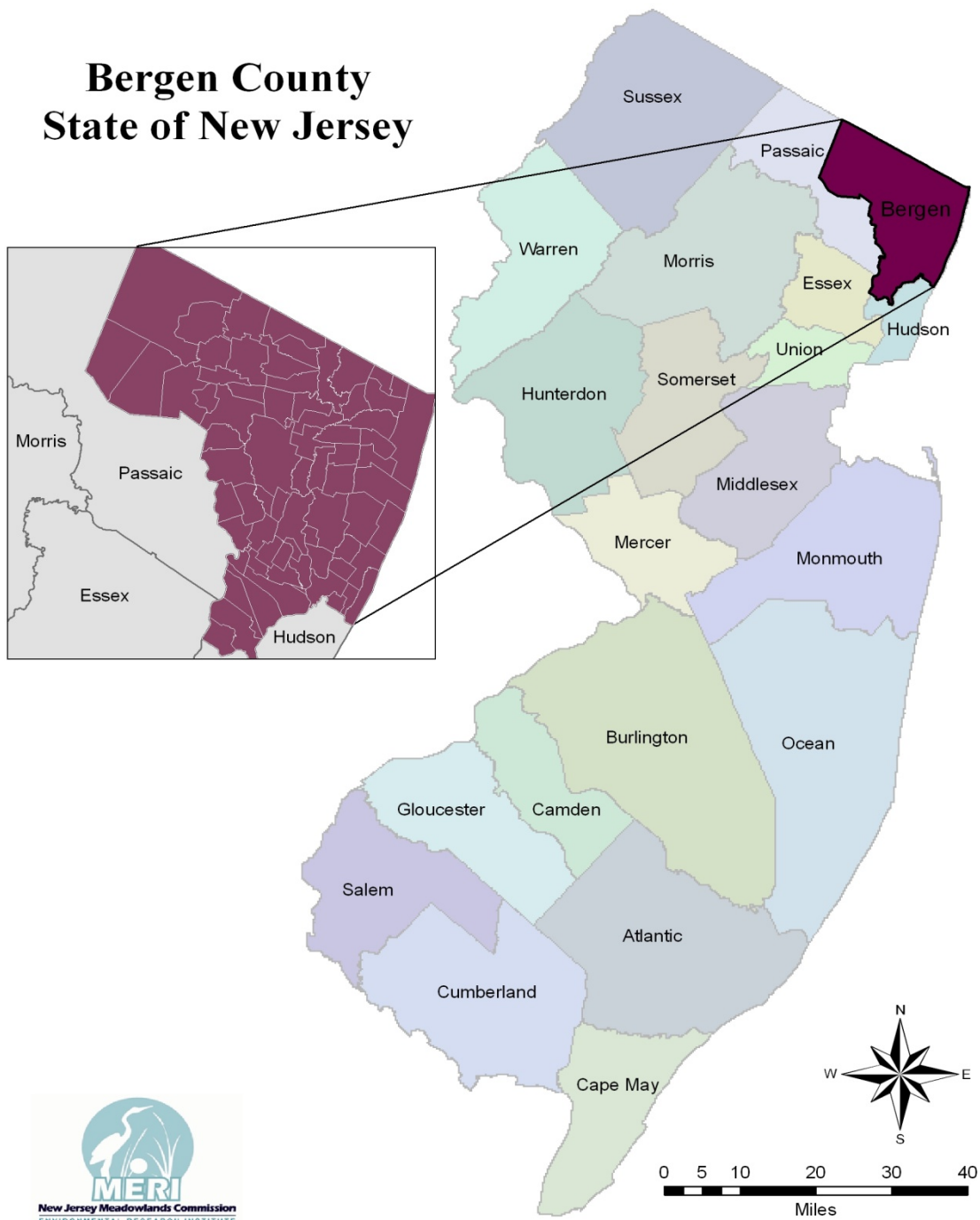
This Plan Update is written in a clear, concise manner for all stakeholders of Bergen County to learn and understand more about potential risks and vulnerability to natural hazards in the local environs. It includes a strategy consisting of goals and measurable objectives to protect and mitigate for instances of risk to Bergen County citizens and properties from exposure to such hazards.

As a result of reading this plan, it is hoped that stakeholders will realize that the responsibility for mitigating natural hazards rests with everyone, and not merely with the government. Mitigation planning should be evaluated for all aspects and locations associated with daily life: at home, in the workplace, in schools and institutional establishments, at recreational facilities and functions, at retail centers, and other locations and activity centers throughout the local communities.

1.3 Date of the Plan

The planning effort for this Plan update officially began on February XX, 2013, when the Planning Team held the kickoff meeting and began to collect and assemble the data, mapping and information contained in this plan. Since the kickoff date, work has proceeded on this update as separate FEMA mitigation planning efforts have begun. The results of these FEMA efforts, specifically FIRM mapping and the RiskMAP program, were not finalized in time for use in this Plan update. These items will be addressed in Section 5: Plan Maintenance, and will also be included in future plan updates.

This Plan update is a living document. It will be amended as needed and will evolve as hazard mitigation planning in Bergen County improves and advances.



This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.

Figure 1.1: New Jersey Counties²

1.4 Vision

It is the vision of Bergen County to be a premier northeastern locale recognized as a superior place to live, work, and play. This vision is firmly based on the philosophy of sustainability - balance of social, economic, and environmental well-being - whereby the citizens of Bergen County shall strive to achieve their needs and aspirations without compromising the ability of future generations to do the same. Vital to this sustainability is the need to reduce the vulnerability of people and property to natural and human-caused disasters. The Bergen County Natural Hazard Mitigation Plan (Plan) is the means by which such vulnerability to hazards, natural ones in particular, may be reduced in a proactive manner.

1.5 Goals and Objectives

For this Plan Update, the Planning Team reviewed the goals and objectives developed for the 2008 Plan, and slightly amended the goals and objectives to be more consistent with those of the 2014 New Jersey State Hazard Mitigation Plan. The following are the five mitigation goals that summarize the hazard reduction outcomes the Bergen County planning area seeks to achieve.

Goal 1: Protect and promote public health and safety

Objectives

- a. Achieve excellence in hazard mitigation planning through the diligent implementation of hazard mitigation laws and regulations and the strengthening of applicable building codes, ordinances, and enforcement;
- b. Improve service to vulnerable populations; reduce harm resulting from emergencies;
- c. Educate citizens regarding sustainable development, disaster preparedness and hazard mitigation; and
- d. Implement and maintain state-of-the-art disaster warning systems.

Goal 2: Safeguard critical public facilities and infrastructure

Objectives

- a. Analyze and mitigate potential impacts from hazards for all public facilities and infrastructure (new and existing);
- b. Implement mitigation programs that protect all critical governmental facilities and services and promote reliability of systems to minimize impacts from hazards, maintain operations and expedite recovery in emergencies;
- c. Create back-up facilities for critical systems such as water, sewer, digital data, electricity, and communications for all critical facilities;
- d. Formalize and implement best practices for protecting systems and networks; and
- e. Reduce repetitive and severe repetitive losses.

Goal 3: Protect public and private property

Objectives

- a. Adopt and enforce public policies to minimize impacts of development and enhance safe construction in high-hazard areas;
- b. Integrate new hazard and risk information into building codes, land use planning mechanisms and other public regulations;

- c. Educate public officials, developers, realtors, insurance agents, contractors, property owners, and the general public regarding hazard vulnerability and potential severity as well as mitigation planning;
- d. Promote hazard mitigation of all public and privately-owned property;
- e. Improve hazard information databases and maps and increase accessibility to those resources;
- f. Incorporate hazard mitigation into all community planning and projects;
- g. Promote hazard mitigation for all historic structures; and
- h. Promote post-disaster mitigation as integral with repair and recovery efforts.

Goal 4: Promote economic vitality in Bergen County and its 70 constituent municipalities

Objectives

- a. Partner with the private sector - small and large businesses - to promote hazard mitigation as integral to standard business practices;
- b. Educate businesses and community members regarding how economic vitality may be impacted by potential hazards and how the impacts on the business sector may impact the local citizens; and
- c. Partner with the private sector to create programs and processes whereby employees may be an active, powerful resource for disaster preparedness and mitigation both on the job and at home.

Goal 5: Preserve the natural environment and promote human health

Objectives

- a. Analyze the secondary effects of potential disasters on human and environmental health, such as mold growth, hazardous material spills, chemical releases by fire/flood/ice, materials used for cleanup and recovery, etc., and develop projects to mitigate potential impacts;
- b. Convert all materials and chemicals used by government agencies in development, operations, maintenance, etc., to environmentally benign and conservation friendly materials and chemicals, considering a balance of social, economic, and environmental accounting;
- c. Decrease consumption of energy at the municipal and county level (petrochemical, electrical, etc.);
- d. Decrease greenhouse gas emissions;
- e. Conduct educational programs regarding all manner of environmental and human health awareness, including but not limited to, global warming, energy efficiency, carbon emissions, recycling and reuse; and
- f. Engage the public and private sectors in energy efficiency and carbon emission reduction programs such as blanketing water heaters, converting to compact florescent lighting, weather proofing, maintaining proper tire pressure, etc.

1.6 Plan Update Components

Chapter 1 – Introduction

This chapter includes the introduction, goals and objectives, purpose and scope of the Plan.

Chapter 2 – Planning Process

This chapter provides documentation of the process by which the County developed the Plan and identification of parties involved.

Chapter 3 – Risk Assessment

This chapter addresses the assessment of risk as a function of exposure to natural hazards including descriptions of hazards, historical impacts of events, susceptible locations and the probabilities that future hazards may occur. This chapter identifies structures and locations in Bergen County which are vulnerable to natural hazard impact, estimates potential losses, and evaluates present and future land use.

Chapter 4 – Mitigation Strategy

This chapter discusses the mitigation strategy, including specific mitigation actions, process for analyzing effectiveness of such actions, and a plan for implementation. This chapter will also review 2008 mitigation actions and their status.

Chapter 5 – Plan Maintenance

This chapter details the future monitoring, maintenance and outreach approach for the Plan while also reviewing maintenance and outreach activities since the 2008 Plan.

Chapter 6 – Plan Adoption

This chapter describes the adoption of the Plan by Bergen County as well as any/all jurisdictions herein represented.

Several appendices provide supporting documentation for the Plan, including maps and graphics, and references cited in the document. These are listed in the Table of Contents.

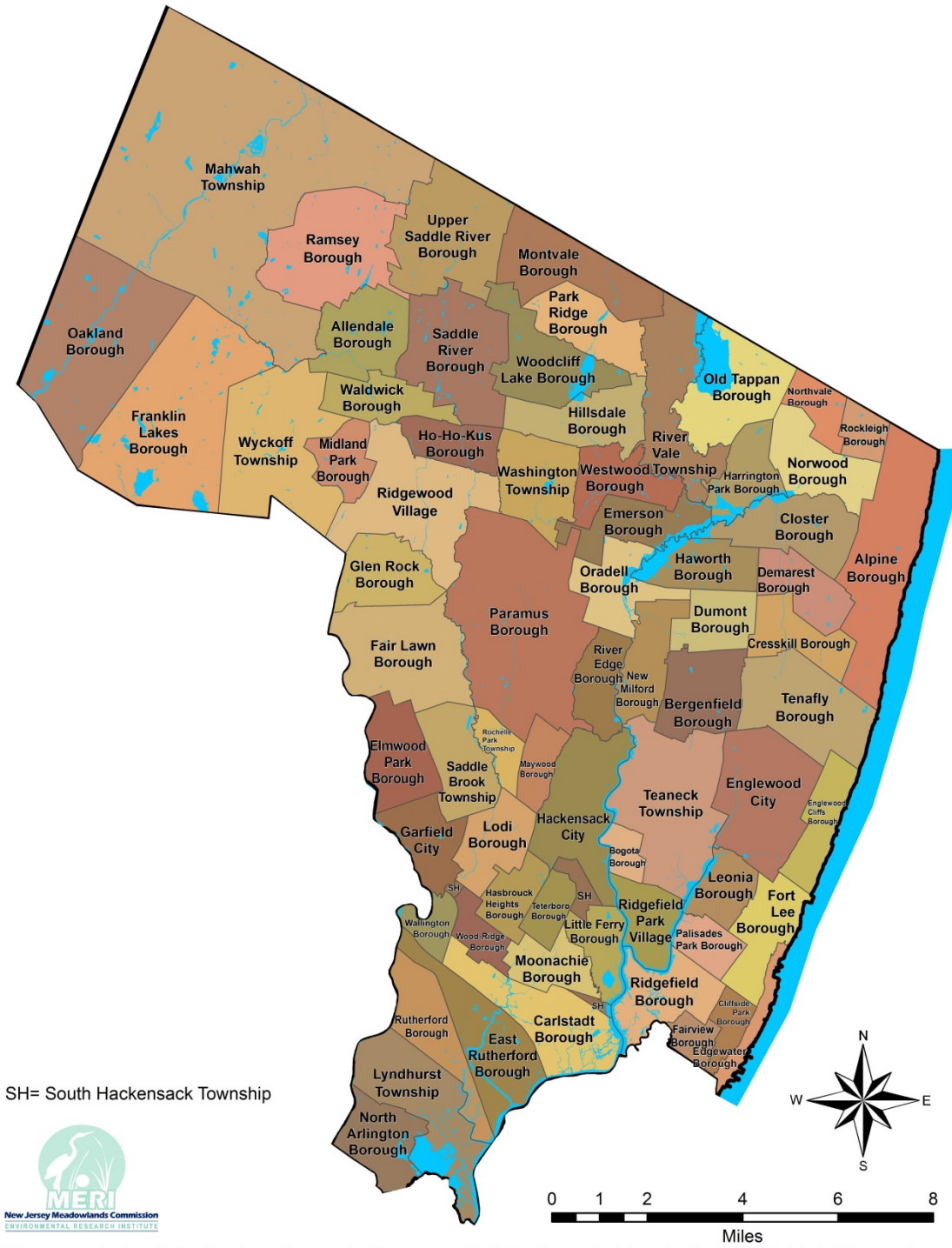
1.7 Participating Jurisdictions

This Plan represents the County of Bergen, its 70 constituent municipalities, one regional planning commission, and one local authority.

Table 1.1: Participating Jurisdictions

Allendale	Hasbrouck Heights	Ramsey
Alpine	Haworth	Ridgefield
Bergenfield	Hillsdale	Ridgefield Park
Bogota	Ho-Ho-Kus	Ridgewood
Carlstadt	Leonia	River Edge
Cliffside Park	Little Ferry	River Vale
Closter	Lodi	Rochelle Park
Cresskill	Lyndhurst	Rockleigh
Demarest	Mahwah	Rutherford
Dumont	Maywood	Saddle Brook
East Rutherford	Midland Park	Saddle River
Edgewater	Montvale	South Hackensack
Elmwood Park	Moonachie	Teaneck
Emerson	New Milford	Tenafly
Englewood	North Arlington	Teterboro
Englewood Cliffs	Northvale	Upper Saddle River
Fairlawn	Norwood	Waldwick

Fairview	Oakland	Wallington
Fort Lee	Old Tappan	Washington
Franklin Lakes	Oradell	Westwood
Garfield	Palisades Park	Woodcliff Lake
Glen Rock	Paramus	Wood-Ridge
Hackensack	Park Ridge	Wyckoff
Harrington Park		
New Jersey Meadowlands Commission	Bergen County Utilities Authority	Bergen County



This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.

Figure 1.2: Bergen County Mitigation Planning Area

¹ FEMA, Disaster Mitigation Act of 2000. <http://www.fema.gov/library/viewRecord.do?id=1935>

² “New Jersey Counties,” New Jersey Meadowlands Commission, 2007.

2. Planning Process

WHAT'S NEW IN CHAPTER 2?

- *The members of the planning team have been updated to reflect personnel changes, as have the municipal OEM coordinators in Bergen County.*
- *Sections of federal hazard mitigation funding and federal disaster funding opportunities have been added.*
- *Information about Bergen County's participation in the National Flood Insurance Program and the Community Rating System has also been added for this Update.*
- *Information has been added regarding mitigation planning initiatives that have begun post Hurricane Sandy*

This section of the Natural Hazard Mitigation Plan Update details the process by which the Plan Update was developed. It identifies the parties involved, their participation, methods of public outreach employed, and types of information gathered in order to assess potential projects worthy of hazard mitigation assistance in Bergen County.

It demonstrates the truly collaborative effort required to protect the population of Bergen County and reduce its vulnerability to all types of natural hazards by identifying the most effective ways to make the communities more resistant to the impacts of these hazards.

This Plan Update should be viewed as a living document, subject to periodic updates, improvements, and modifications, as deemed appropriate. Thereby, the planning process is dynamic; it can, and should, be revisited to monitor the progress of the projects proposed in this Plan and to assess the need for future projects.

2.1 The Planning Team

Many people and entities were involved in bringing the 2014 Bergen County Multi-Jurisdictional All-Hazards Mitigation Plan Update to fruition. The New Jersey Meadowlands Commission (NJMC) and Bergen County Office of Emergency Management (BCOEM), in coordination with the emergency management coordinators from the 70 Bergen municipalities, worked together to produce this Update.

The NJMC and BCOEM reviewed the data needed for the plan update, reached out to stakeholders for assistance to gather and disseminate information, examined vulnerable sites and facilities, and prioritized potential mitigation projects for future implementation and Federal funding.

In addition to their interaction with the NJMC and BCOEM, the OEM Coordinators serve as the bridge to other elements in each community. For example, they serve as the liaisons to other departments within the municipality, including Engineer, Administrator, Construction official and Planner. The OEM Coordinators are also the link to the local Community Emergency Response Teams (CERT), civic organizations, advocacy groups, and the general public by providing outreach to these significant stakeholders, many of whom hold a wealth of information regarding areas in need of hazard management and mitigation at the local level.

Table 2.1: Plan Development Team

MEMBER	TEAM ROLE	AGENCY POSITION
BERGEN COUNTY		
Brian Higgins	Public Safety Director/Chief	County Chief of Police
Lt. Matthew Tiedemann	OEM Coordinator	County Police Lieutenant/County OEM Coordinator
Sgt. Gidget Petry	Deputy OEM Coordinator	County Police Officer
Det. Ron Salzano	Deputy OEM Coordinator	County Police Officer
Matthew Ziemkiewicz	Deputy OEM Coordinator	Domestic Preparedness Planner
Thomas Metzler	Deputy OEM Coordinator	Bergen County OEM
Joseph A. Femia, PE	Technical Advisor	County Engineer
Gary M. Ascolese, PE	Data Collection/Engineer	Assistant County Engineer
Christos Kavvadas	Data Collection/Engineer	County Hydraulics Engineer
Elizabeth Stagg	Flood Plain Manager	Bergen County OEM
Peter Pluchino	Data Collection	Mosquito Control Division Director
John Araneo	Technical Advisor	County Bridge Engineer
NEW JERSEY MEADOWLANDS COMMISSION		
Cheryl Rezendes, AICP	Mitigation Plan Author /Data Collection/Planner	Principal Planner
Deborah Alaimo Lawlor, AICP/PP	Editor/ /Data Collection/Planner	Chief Planner
Dominador Elefante	Map and Database Services	GIS Administrator
Stephanie Bosits	Map and Database Services	GIS Specialist
Brandon Alviano	Data Collection/Planner	Staff Planner
Mia Petrou, AICP/PP	Data Collection/Planner	Senior Planner
Mark Skerbetz, AICP/PP	Data Collection/Planner	Senior Planner
Fawzia Shapiro, PE/PP	Data Collection/Planner	Senior Engineer
Ron Seelogy, PE/PP	Data Collection/Planner	Senior Engineer
Donna Bocchino	Data Collection	Administrative Assistant
Ed Ramirez	Data Collection	Grants & Construction Contracts Admin
Ralph Venturini	Deputy Mitigation Plan Coordinator	(Former) Chief Plan Examiner

Table 2.2: Municipal OEM Coordinators

MUNICIPALITY	OEM COORDINATOR
Allendale	Mr. Scott Zieber
Alpine	Mr. Charles Hoffman
Bergenfield	Mr. Thomas Rose
Bogota	Mr. Tito Jackson
Carlstadt	Mr. Hernan Lopez
Cliffside Park	Mr. Stewart DeVito
Closter	Sgt. James Winters
Cresskill	Chief Frank Tino Jr.
Demarest	Chief James Powderley
Dumont	Chief Brian Venezio
East Rutherford	Mr. Francis Joseph Jr.
Edgewater	Robert Christiansen
Elmwood Park	Mr. Scott Karcz
Emerson	PO Mark Savino
Englewood	PO Bryan Krane
Englewood Cliffs	D/C Michael McMorro
Fair Lawn	Wendy Alvarez
Fairview	PO Vincent Bellucci
Fort Lee	Capt. Stephen Ferraro
Franklin Lakes	Mr. Craig Goldman
Garfield	PO Michael Marsh
Glen Rock	Joanne Perry
Hackensack	Capt. John Niland
Harrington Park	Mr. Michael Hunken
Hasbrouck Heights	Chief Michael Colaneri
Haworth	Mr. Rick Swarthe
Hillsdale	Mr. William Franklin
Ho-Ho-Kus	Mr. Jay Ludwig
Leonia	Mr. Ron Chace
Little Ferry	Chief Ralph Verdi
Lodi	Mr. Robert Cassiello
Lyndhurst	Chief James O'Connor
Mahwah	Mr. Raymond Roe
Maywood	Mr. Christopher Tuttle
Midland Park	Mr. Joseph Mulligan
Montvale	Mr. Bruce Piatt
Moonachie	Mary Ann Lyons
New Milford	Chief Frank Papapietro
North Arlington	Mr. Peter Massa
Northvale	Mr. Nicola Lepore

Norwood	Chief Jeffrey Krapels
Oakland	Mr. Roy Bauberger
Old Tappan	Capt. Thomas Shine
Oradell	Ms. Laura Graham
Palisades Park	Mr. George Beck
Paramus	Mr. Steven Mehl
Park Ridge	Mr. Peter Mauro
Ramsey	Mr. Ralph Venturini
Ridgefield	Mr. Michael Handschin
Ridgefield Park	Mr. Douglas Hansen
Ridgewood	Mr. Robert Greenlaw
River Edge	Mr. Thomas Smith
River Vale	Lt. Sean Scheidle
Rochelle Park	Mr. Peter Donatello Jr.
Rockleigh	Mr. Michael Malhame
Rutherford	Mr. Paul Dansbach
Saddle Brook	Mr. John Tuohy
Saddle River	Mr. John Bishop
South Hackensack	Mr. Michael Ward
Teaneck	Mr. Larry Roberston
Tenafly	Mr. Anthony Barzelatto
Teterboro	Mr. Robert Pisko
Upper Saddle River	Chief Theodore Preusch
Waldwick	Mr. Robert Ryan
Wallington	Mr. Mark Lepinski
Washington Twp	Cpl. Saverio Fasciano
Westwood	Mr. Darren Blankenbush
Woodcliff Lake	Mr. Herbert Kuehlke
Wood-Ridge	Mr. Paul Dahl
Wyckoff	Sgt. Michael Steinbruch

2.2 History of the Process

Since "mitigate" simply means "to make less severe," it could be said that Bergen County has been in the hazard mitigation business since the first settlers located along the beautiful river valleys and mountain foothills of the region. While many hazards, from winter storms to tornadoes, have affected the County's inhabitants, flooding most often comes to mind when the topic of hazard mitigation planning arises. This is due to the fact that Bergen County is laced with several major rivers and an array of associated tributaries.

As is often the case with communities located adjacent to waterways, thriving development fills the floodplains, moving closer and closer to the water's edge for reasons of scenic beauty, transportation, industry, power generation, water supply and more. This pattern of development poses challenges as natural environmental phenomenon (such as the rise and fall of river levels) may impact human health and financial prosperity. This has occurred repeatedly over the years, bringing with it increased repetitive filing of losses due to damages incurred.

To lessen the impact of funding for repetitive losses during a disaster, FEMA, in accordance with the Disaster Mitigation Act of 2000 (44 CFR Parts 201 and 206), mandated that all jurisdictions (municipalities and counties) develop comprehensive all-hazard mitigation plans by November 1, 2003 in order to be eligible for Federal Hazard Mitigation Grant funding following a presidentially-declared disaster. FEMA authorized the development of multi-jurisdictional hazard mitigation plans to comply with this requirement. FEMA and the NJOEM granted permission to BCOEM to develop a plan for Bergen County and all of its municipalities. All 70 constituent municipalities in the County agreed to participate in this hazard mitigation planning endeavor in 2006, and again for this 2014 Plan update.

2.3 Public Participation in Bergen County post-Hurricane Irene and Superstorm Sandy

The outreach program developed for the 2008 plan was again utilized for this 2014 Update. Several events beyond the control of the Planning Team impacted the level of participation on the part of the municipalities, and greatly increased the amount of time that was originally allotted for this portion of the Planning process.

The Planning Team faced serious challenges relating to data collection and outreach in general. With 70 municipalities, many of them very modest in land area and population, the typical Bergen County OEM Coordinator often holds at least one additional position, whether working outside or within the municipality. Included in a long list of responsibilities are the ongoing recovery activities from Hurricane Irene (2011) and Superstorm Sandy (2012), which severely impacted many jurisdictions within Bergen County. The level of effort, administratively, for many OEM Coordinators has increased tenfold. Unfortunately, these circumstances hampered the efforts of the Planning Team to gather the baseline information that was needed to prepare the vulnerability assessment, and ultimately set the completion schedule back. Also impacted by the ongoing recovery efforts was attendance at Plan update meetings, which initially was very low but increased due to a more concerted communication effort on the part of the Planning Team. Mayors and Administrators from all 70 Bergen municipalities were included on all Plan communications, to increase awareness and improve participation.

The planning process consisted of meetings and data collection amongst four primary groups of participants:

- Government Agencies
- OEM Coordinators
- Key Stakeholders
- General Public

For this Plan update, numerous meetings and workshops were held to assist OEM Coordinators in each municipality with the task of gathering the bulk of the information required for the Plan update. **Table 2.3** details the level of participation in the Plan by each municipality in Bergen County. Any information submitted, as well as meetings attended during the planning process, is reflected in Table 2.3.

Appendix A contains all of the public outreach materials developed for the Plan update. This includes Power Point presentations from all outreach meetings, flyers that were sent out to notify Bergen municipalities of the meetings, and public notices that were published in The Record newspaper for the February 2014 outreach meetings.

Also included in Appendix A is the press release that was developed and distributed during winter 2015 to solicit public input on the draft plan. This press release was distributed/posted to the following locations:

- New Jersey Meadowlands Commission website;
- Bergen County website;
- Hudson County OEM;
- Passaic County OEM;
- Essex County OEM;
- New York City OEM;
- The Port Authority of New York and New Jersey;
- Bergen County Utilities Authority; and
- 70 Bergen County municipalities.

It should be noted that the Bergen County Office of Emergency Management holds Quarterly Emergency Management Coordinator's meetings. These meetings are not open to the public. Each quarterly meeting generally includes an update of Mitigation Plan status, a discussion of hazards, and a request for feedback from attendees/communities. Invitees include municipal OEM Coordinators, CERT Program Managers, as well as representatives from NJ State Police, Port Authority of NY/NJ, Public Service Electric and Gas Company, United Water Company, Passaic Valley Water Commission, and other interested parties.

Upon completion, the Plan update will be submitted to the New Jersey State Police, Bergen County, and the 70 Bergen County municipalities for review and approval prior to final submission to FEMA for approval. Resolutions from each of the participating jurisdictions will be retained on file at the BCOEM. Public input will be accepted at each of the local and county meetings at which the resolutions are voted upon in order to provide broad geographical access for public comment on the final plan. Additionally, the entire plan and appendices will be available for public review and comment on the NJMC and Bergen County websites.

2.4 Data Gathering

Gathering the data necessary to identify potential projects and areas in need of mitigation from real or potential natural hazard damage was a massive undertaking, particularly since it was done at the multi-jurisdictional scale.

Initially, NJMC asked the Bergen County municipalities to submit any historical natural hazard disaster information they had on record. This data may have included updated names and locations of impacted sites/areas, critical facilities, critical infrastructure, other infrastructure of importance, vulnerability analyses, etc. Depending upon the individual municipality, the information may have been gathered from a number of existing municipal documents such as master plans, capital improvement plans, floodplain management plans, emergency operation plans, former insurance claims, etc. For this update, municipalities were asked to provide only information that was new or had changed from their submission for the 2008 Plan. For the mitigation strategy portion of the Plan update (Section 4), municipalities were asked to provide a progress report on any mitigation project from the 2008 plan. New mitigation projects were also requested. Also included in the mitigation section are summaries of the Letters of Intent (LOI) submitted by all Bergen towns in 2013.

Additional scanned forms from the data gathering effort are available upon request, including sign-in sheets from the public outreach effort.

Table 2.3: Plan Participation by Bergen County Municipalities

	MUNICIPALITY	Attended Kickoff Meeting 2/12/13	Attended Workshop 6/26/13	Attended Workshop 6/27/13	Attended Mitigation Meeting 2/12/14	Attended Mitigation Meeting 2/28/14	Met with Planning Team 2014**	Resolution Approving the Plan	Updated Municipal Information	Submitted Mitigation Project(s)	CC Worksheet
201	Allendale				X				YES	YES	YES
202	Alpine				X				YES	YES	YES
203	Bergenfield	X	X			X	X		YES	YES	YES
204	Bogota				X				YES	YES	YES
205	Carlstadt	X		X					YES	YES	YES
206	Cliffside Park	X	X		X				YES	YES	YES
207	Closter	X		X		X			YES	YES	YES
208	Cresskill				X		X		YES	YES	YES
209	Demarest*						X		YES	YES	YES
210	Dumont	X			X				YES	YES	YES
212	East Rutherford					X			YES	YES	YES
213	Edgewater	X	X				X		YES	YES	YES
211	Elmwood Park	X							YES	YES	YES
214	Emerson			X					YES	YES	YES
215	Englewood				X				YES	YES	YES
216	Englewood Cliffs*						X		YES	YES	YES
217	Fair Lawn	X	X		X				YES	YES	YES
218	Fairview					X			YES	YES	YES
219	Fort Lee	X			X				YES	YES	YES
220	Franklin Lakes		X		X				YES	YES	YES
221	Garfield					X			YES	YES	YES
222	Glen Rock				X				YES	YES	YES
223	Hackensack				X				YES	YES	YES

	MUNICIPALITY	Attended Kickoff Meeting 2/12/13	Attended Workshop 6/26/13	Attended Workshop 6/27/13	Attended Mitigation Meeting 2/12/14	Attended Mitigation Meeting 2/28/14	Met with Planning Team 2014**	Resolution Approving the Plan	Updated Municipal Information	Submitted Mitigation Project(s)	CC Worksheet
224	Harrington Park*								YES	YES	YES
225	Hasbrouck Heights	X			X				YES	YES	YES
226	Haworth				X	X			YES	YES	YES
227	Hillsdale	X	X		X				YES	YES	YES
228	Ho-Ho-Kus	X	X			X			YES	YES	YES
229	Leonia		X		X				YES	YES	YES
230	Little Ferry	X		X	X				YES	YES	YES
231	Lodi	X				X			YES	YES	YES
232	Lyndhurst	X		X		X			YES	YES	YES
233	Mahwah	X			X				YES	YES	YES
234	Maywood		X			X			YES	YES	YES
235	Midland Park					X			YES	YES	YES
236	Montvale				X				YES	YES	YES
237	Moonachie	X		X	X				YES	YES	YES
238	New Milford			X		X			YES	YES	YES
239	North Arlington	X				X			YES	YES	YES
240	Northvale*								YES	YES	YES
241	Norwood				X				YES	YES	YES
242	Oakland		X		X		X		YES	YES	YES
243	Old Tappan			X	X				YES	YES	YES
244	Oradell					X			YES	YES	YES
245	Palisades Park				X				YES	YES	YES
246	Paramus*								YES	YES	YES
247	Park Ridge	X		X		X			YES	YES	YES
248	Ramsey		X				X		YES	YES	YES
249	Ridgefield	X				X			YES	YES	YES

	MUNICIPALITY	Attended Kickoff Meeting 2/12/13	Attended Workshop 6/26/13	Attended Workshop 6/27/13	Attended Mitigation Meeting 2/12/14	Attended Mitigation Meeting 2/28/14	Met with Planning Team 2014**	Resolution Approving the Plan	Updated Municipal Information	Submitted Mitigation Project(s)	CC Worksheet
250	Ridgefield Park					X	X		YES	YES	YES
251	Ridgewood	X				X			YES	YES	YES
252	River Edge		X		X				YES	YES	YES
253	River Vale			X					YES	YES	YES
254	Rochelle Park	X	X			X	X		YES	YES	YES
255	Rockleigh*								YES	YES	YES
256	Rutherford				X		X		YES	YES	YES
257	Saddle Brook					X	X		YES	YES	YES
258	Saddle River*								YES	YES	YES
259	South Hackensack				X		X		YES	YES	YES
260	Teaneck	X			X				YES	YES	YES
261	Tenafly			X	X				YES	YES	YES
262	Teterboro	X							YES	YES	YES
263	Upper Saddle River	X			X				YES	YES	YES
264	Waldwick				X				YES	YES	YES
265	Wallington	X				X			YES	YES	YES
266	Washington	X				X			YES	YES	YES
267	Westwood			X		X			YES	YES	YES
268	Woodcliff Lake			X	X		X		YES	YES	YES
269	Wood-Ridge	X		X		X	X		YES	YES	YES
270	Wyckoff	X			X				YES	YES	YES
	Bergen County	X	X	X	X	X			YES	YES	YES

*These municipalities did not attend any of the outreach meetings held by the Planning Team. Each of these municipalities either met with the Planning Team or participated electronically and via phone conversation. All municipalities submitted the required paperwork,

Details of these meetings can be found in **Appendix B.

2.5 Coordination with Existing Planning Efforts and Programs

Section 322 of the Stafford Act requires state and local governments to prepare multi-hazard mitigation plans as a precondition for receiving FEMA mitigation project grants. In New Jersey, municipalities are authorized to prepare local disaster plans based on the premise that they are best equipped to assess their strengths and weaknesses, opportunities, and constraints. Local governments have intimate knowledge of the local geography, and in a disaster, local government personnel are on the front lines providing personnel and equipment to support the community.

Various FEMA programs are available to provide assistance to local governments. These programs help the County by providing funding for flood mitigation projects and flood insurance. The HMGP can also provide funds to mitigate the risk from other natural hazards. Continued involvement in these programs will help to administer funds and resources to support this Plan.

2.6 Federal Hazard Mitigation Funding Opportunities

FEMA's Hazard Mitigation Assistance (HMA) grant programs provide funding for eligible mitigation activities that reduce disaster losses and protect life and property from future disaster damages. Currently, FEMA administers the following HMA grant programs: 1) Flood Mitigation Assistance (FMA); 2) Hazard Mitigation Grant Program; and 3) Pre-Disaster Mitigation (PDM).

As of July 2013, the Repetitive Loss Grant Program (RFC) and Severe Repetitive Loss Grant Program (SRL) are no longer funded and are now addressed under the unified FMA program. The Biggert Waters Flood Insurance Reform Act of 2012 eliminated the SRL program. For more information on the Biggert Waters Flood Insurance Reform Act visit: <http://www.fema.gov/flood-insurance-reform-act-2012>. For previous year information regarding the SRL Program visit: <http://www.fema.gov/severe-repetitive-loss-program>. For previous year information on the RFC Program visit: <http://www.fema.gov/repetitive-flood-claims-program>.

Federal mitigation grant funding (Stafford Act 404 and 406) is available to all communities with a current hazard mitigation plan (this plan); however most of these grants require a “local share” in the range of 0-25% of the total grant amount. Participation in FEMA 404 HMGP may cover mitigation activities including raising, removing, relocating or replacing structures within flood hazard areas. The FEMA mitigation grant programs are described below.

Flood Mitigation Assistance (FMA) Program

FMA provides funding to assist states and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insured under the NFIP. The FMA is funded annually; no federal disaster declaration is required. Only NFIP insured homes and businesses are eligible for mitigation in this program. Funding for FMA is very limited and, as with the HMGP, individuals cannot apply directly for the program. Applications must come from local governments or other eligible organizations. The federal cost share for an FMA project is 75%. At least 25% of the total eligible costs must be provided by a non-federal source. Of this 25%, no more than half can be provided as in-kind contributions from third parties. At minimum, a FEMA-approved Hazard Mitigation Plan is required before a project can be approved. FMA funds are distributed from FEMA to the state. NJOEM serves as the grantee and program administrator for FMA.

Hazard Mitigation Grant Program (HMGP)

The HMGP is a post-disaster mitigation program. It is made available to states by FEMA after a Federal disaster declaration. The HMGP can provide up to 75% funding for hazard mitigation projects. The HMGP can be used to fund cost-effective projects that will protect public or private property in an area covered by a federal disaster declaration, or that will reduce the likelihood of damage from future disasters. Examples of projects include acquisition and demolition of structures in hazard prone areas, flood proofing or elevation to reduce future damage, minor structural improvements and development of state or local standards. Projects must fit into an overall mitigation strategy for the area identified as part of a local planning effort. All applicants must have a FEMA-approved Hazard Mitigation Plan. HMGP eligible applicants include state and local governments, certain nonprofit organizations or institutions that perform essential government services, and Indian tribes and authorized tribal organizations. Individuals or homeowners cannot apply directly for the HMGP; a local government must apply on their behalf. Applications are submitted to NJOEM and placed in rank order for available funding and submitted to FEMA for final approval. Eligible projects not selected for funding are placed in an inactive status and may be considered as additional HMGP funding becomes available.

Pre-Disaster Mitigation (PDM) Program

The PDM program is an annually funded, nationwide, competitive grant program. No disaster declaration is required. Federal funds will cover 75% of a project's cost up to \$3 million. As with the HMGP and FMA, a FEMA-approved local Hazard Mitigation Plan is required to be approved for funding under the PDM program.

2.7 Federal Disaster and Recovery Assistance Programs

Following a disaster, various types of assistance may be made available by local, state and federal governments. The types and levels of disaster assistance depend on the severity of the damage and the declarations that result from the disaster event. Among the general types of assistance that may be provided should the President of the United States declare the event a major disaster are the following:

Individual Assistance (IA)

IA provides help for homeowners, renters, businesses and some non-profit entities after disasters occur. For homeowners and renters, the IHP (individuals and households program) assists those who suffered uninsured or underinsured losses. They may be eligible for a Home Disaster Loan to repair or replace damaged real estate or personal property. Renters are eligible for loans to cover personal property losses. Individuals may borrow up to \$250,000 to repair or replace real estate, \$40,000 to cover losses to personal property and an additional 20% for mitigation.

For businesses, loans may be made by the SBA and USDA to repair or replace disaster damages to property owned by the business, including real estate, machinery and equipment, inventory and supplies. Businesses of any size are eligible. Non-profit organizations such as charities, churches, private universities, etc. are also eligible. These loans are restricted, by law, to small businesses only.

Public Assistance (PA)/Section 406

PA provides cost reimbursement aid to local governments (state, county, local, municipal authorities and school districts) and certain non-profit agencies that were involved in disaster response and recovery

programs or that suffered loss or damage to facilities or property used to deliver government-like services. The purpose of the PA program is to provide enough funding to restore a damaged facility to its pre-disaster design, function and capacity. During the repair efforts, mitigation opportunities may present themselves. The 406 program is implemented in conjunction with the PA program; additional funding may be authorized to modify the damaged facility in order to mitigate potential future damage. The cost effective mitigation measure must be applied on the parts of the eligible facility that were actually damaged by the disaster and must directly reduce the potential of future, similar disaster damages.

Community Development Block Grants (CDBG)

The Community Development Block Grant (CDBG) program provides communities with resources to address a wide range of community development needs. The CDBG program works to ensure decent affordable housing, to provide services to the most vulnerable in our communities, and to create jobs through the expansion and retention of businesses. HUD determines the amount of each grant by using a formula comprised of several measures of community need, including the extent of poverty, population, housing overcrowding, age of housing, and population growth lag in relationship to other metropolitan areas.

2.8 National Flood Insurance Program

The National Flood Insurance Program (NFIP) was established in 1968 by the U.S. Congress to provide affordable federally-backed flood insurance to property owners. The intent of the NFIP is to ensure that new development does not worsen flooding problems, and is better able to withstand any future flooding. To be eligible for participation in the NFIP, communities must adopt and enforce a floodplain management ordinance to regulate new development in Special Flood Hazard Areas (SFHAs), as well as designate a floodplain administrator. Participation in the NFIP is voluntary.

When a community chooses to join the NFIP, it must require permits for all new construction in the SFHA (as determined by flood hazard mapping) and ensure that both the construction materials and methods used will minimize potential flood damage. The federal government then makes flood insurance available for eligible buildings and their contents within the community. Local floodplain management ordinances and enforcement procedures must meet program NFIP requirements. Local regulations must be updated when additional data are provided by FEMA or when Federal or state standards are revised.

Flood Insurance Rate Maps

A Flood Insurance Rate Map (FIRM) is an official map of a community on which FEMA has delineated both the special hazard areas and the risk premium zones applicable to the community. Flood risk information presented on FIRMs is based on historic, meteorological, hydrologic, and hydraulic data, as well as open-space conditions, flood control works, and development. To prepare FIRMs that illustrate the extent of flood hazard in a flood prone community, FEMA conducts engineering studies referred to as Flood Insurance Studies (FISs). Using information gathered in these studies, FEMA engineers and cartographers delineate Special Flood Hazard Areas (SFHAs) on FIRMs. SFHAs are those areas subject to inundation by a flood that has a 1-percent or greater chance of being equaled or exceeded during any given year. This type of flood is referred to as a base flood. A base flood has a 26-percent chance of occurring during a 30-year period. The base flood is a regulatory standard used by Federal agencies, and most states, to administer floodplain management programs, and is also used by the National Flood Insurance Program as the basis for insurance requirements nationwide.

A variety of information can be found on FIRMs, including:

- Common physical features, such as major highways, secondary roads, lakes, railroads, streams, and other waterways;
- Special Flood Hazard Areas;
- Base (1% annual chance) flood elevations or depths;
- Flood insurance risk zones;
- Areas subject to inundation by the 0.2 percent annual chance flood;
- Areas designated as regulatory floodways; and
- Undeveloped coastal barriers.

All of the communities in Bergen County that currently participate in the NFIP are meeting the state minimum requirement for floodplain compliance, as discussed in the NJ State Mitigation Plan. The vast majority of Bergen municipalities participate in the NFIP with the exception of the Borough of Alpine, the Borough of Cliffside Park, and the Borough of Englewood Cliffs, which do not currently participate in the NFIP. These non-participating municipalities have published FIRMs with only Zone C & X properties. FEMA has reached out to these communities to provide information regarding the benefits of the NFIP program.

In order to provide more complete information regarding the level of participation of the individual Bergen County jurisdictions, Bergen County will, in consultation with NJOEM and FEMA, develop a survey to determine which information would be most beneficial to the BC Plan going forward. This survey will be distributed to each Bergen County community as part of the Plan Maintenance process.

Table 2.4 details the participation of Bergen municipalities in the NFIP and includes information on Repetitive and Severe Repetitive Loss Properties, losses and claims. This information was provided by FEMA and is dated February 28, 2014. **Table 2.5** breaks down NFIP policies in force by land use type, including single family, 2-4 family, all other residential, and non-residential. This information is dated December 31, 2014. The New Jersey Meadowlands Commission (NJMC) has the greatest number of policies in force, with 2,344, and nearly half (1,039) of the policies for residential uses other than single family or 2-4 family. This number reflects the recent growth in multifamily residential (apartment) developments in the historically commercial and industrial Meadowlands District. The NJMC also has the highest number of non-residential policies, which correlates with the large number of commercial and industrial land uses in the Meadowlands District. The Borough of Edgewater has the second highest number of policies in force with 1,973 (46 single family, 30 2-4 family, 1,836 all other residential, and 61 non-residential). The high number of “all other residential” reflects the current and recent explosive multifamily residential growth in Edgewater and other jurisdictions along the Hudson River. Despite the very high number of NFIP policies in Edgewater, there are only 4 RL properties and 2 SRL properties.

More specific NFIP information broken down by jurisdiction is provided in **Appendix M** and is dated December 31, 2014.

2.9 Repetitive Losses and Severe Repetitive Losses

According to FEMA, a Repetitive Loss (RL) property is any insurable building for which two or more claims of more than \$1,000 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year

period, since 1978. A RL property may or may not be currently insured by the NFIP. Currently there are over 122,000 RL properties nationwide.¹

The definition of severe repetitive loss (SRL) was established in section 1361A of the National Flood Insurance Act, as amended (NFIA), 42 U.S.C. 4102a. According to FEMA, an SRL property is defined as a residential property that is covered under an NFIP flood insurance policy and:

- (a) That has at least four NFIP claim payments (including building and contents) over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or
- (b) For which at least two separate claims payments (building payments only) have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building.

For both (a) and (b) above, at least two of the referenced claims must have occurred within any ten-year period, and must be greater than 10 days apart.²

Bergen County municipalities have experienced significant, well-documented losses during Hurricane Irene in 2011 and Hurricane Sandy in 2012. As shown in Table 2.4, Bergen County has 1,878 RL properties with 5,521 RL losses, and 237 SRP properties with 1,351 SRL losses. Bergen County has 7 jurisdiction with more than 100 RL properties. These include Little Ferry (249), which experienced massive flooding from Hurricane Sandy; Rochelle Park (156); Lodi (141); New Milford (140); Westwood (108); Lyndhurst (107); and the New Jersey Meadowlands Commission (119), whose jurisdiction includes portions of Carlstadt, East Rutherford, Little Ferry, Lyndhurst, Moonachie, North Arlington, Ridgefield, Rutherford, South Hackensack and Teterboro.

The Bergen County jurisdiction with the highest amount of RL and SRL claims paid is the Borough of New Milford, with over \$21,000,000 in RL claims paid and over \$8,000,000 in SRL claims paid.

The State of New Jersey plays a key role in the mitigation planning efforts with regards to RL and SRL properties. According to the 2014 State of NJ Mitigation Plan, The State mitigation strategy consists of the following objectives:

- Ensure that local jurisdictions with SRL properties take actions to reduce the number of these properties ;
- Include SRL in the description of process for providing funding and technical assistance to prepare mitigation plans; and
- Prioritize project grants for communities that have RL and SRL properties.

In previous disasters, the State OEM solicited Letters of Intent (LOI's) from affected stakeholders seeking mitigation funds. Those LOI's were ranked utilizing the scorecard which provided additional points for projects that addressed the mitigation of SRL and RL properties. Following Hurricane Sandy, however, the State augmented mitigation funds with monies made available through the supplemental appropriations bill passed by Congress. As such, the State developed mitigation-focused programs (i.e. energy resilience, residential elevation and buyout programs). These post-Sandy programs were subject to individual and objective application criteria. A large focus, however, continued to be made with respect to SRL and RL properties. For example, the State is utilizing a combination of mitigation and other federal dollars to undertake the buyout of repetitive loss properties in various municipalities.

Table 2.4: NFIP Information on New Jersey Repetitive and Severe Repetitive Loss Properties

Source: Consolidated information obtained from Bureau Net as of February 28, 2014

Municipal Identification			Repetitive Loss Property Information				Severe Repetitive Loss Information			
Municipality <i>74% of towns in NJ have Repetitive Loss Properties</i>	NFIP CID #	Co/Mun #	# of RL Properties	# of RL Losses	Total NFIP Claims Paid	# Mitigated	# of SRL Properties	# of SRL Losses	Total NFIP SRL Claims Paid	# Mitigated
Allendale Borough	340019	0201	4	12	141,957.24	0	1	5	87,445.85	0
Bergenfield Borough	340020	0203	8	19	235,046.01	0	0	0	0	0
Bogota Borough	340021	0204	3	11	238,025.90		1	7	186,753.17	0
Carlstadt Borough	340022	0205	8	50	2,709,586.89	0	3	34	818,470.33	0
Closter Borough	340023	0207	6	15	172,096.68	0	1	4	57,976.83	0
Cresskill Borough	340024	0208	7	19	245,188.39	0	0	0	0	0
Demarest Borough	340025	0209	2	4	32,850.25	0	0	0	0	0
Dumont Borough	340026	0210	8	17	93,676.03	0	0	0	0	0
Elmwood Park Borough	340500	0211	8	25	649,779.82	0	2	8	132,511.53	0
East Rutherford Borough	340028	0212	47	119	4,332,688.51	0	5	20	871,609.42	0
Emerson Borough	340030	0212	3	9	101,904.65	0	1	4	39,618.63	0
Edgewater Borough	340029	0213	4	14	2,314,879.6	0	2	10	2,226,152.81	0
Englewood City	340031	0215	35	90	2,723,912.91	0	1	4	203,716.25	0
Fair Lawn Borough	340033	0217	29	90	1,673,112.23	0	8	40	1,151,517.62	0
Fairview Borough	340034	0218	4	12	273,149.45	0	1	5	109,824.71	0
Franklin Lakes Borough	340036	0220	5	11	119,063.33	0	0	0	0	0
Garfield City	340037	0221	36	97	2,255,921.19	0	3	14	404,730.47	0
Glen Rock Borough	340038	0222	2	5	26,640.47	0	0	0	0	0
Hackensack City	340039	0223	60	154	6,423,655.82	0	2	11	551,020.17	0
Harrington Park Borough	340040	0224	2	4	63,498.95	0	0	0	0	0
Hasbrouck Heights Boroug	340041	0225	3	8	521,781.62	0	0	0	0	0

Municipal Identification			Repetitive Loss Property Information				Severe Repetitive Loss Information			
Municipality <i>74% of towns in NJ have Repetitive Loss Properties</i>	NFIP CID #	Co/Mun #	# of RL Properties	# of RL Losses	Total NFIP Claims Paid	# Mitigated	# of SRL Properties	# of SRL Losses	Total NFIP SRL Claims Paid	# Mitigated
Haworth Borough	340042	0226	2	4	29,595.34	0	0	0	0	0
Hillsdale Borough	340043	0227	48	192	4,137,305.56	2	13	85	1,572,091.46	0
Ho-Ho-Kus Borough	340044	0228	4	11	76,938.82	0	0	0	0	0
Little Ferry Borough	340046	0230	249	590	13,292,998.08	0	6	32	805,558.21	0
Lodi Borough	340047	0231	141	485	18,191,644.76	2	23	164	7,783,324.59	1
Lyndhurst Township	340048	0232	107	294	8,276,912.2	5	13	52	2,038,442.77	1
Mahwah Township	340049	0233	23	86	2,015,373.92	0	8	39	905,629.52	0
Maywood Borough	340050	0234	5	14	91,968.19	0	0	0	0	0
Midland Park Borough	340051	0235	2	6	41,510.01	0	0	0	0	0
Montvale Borough	340052	0236	1	2	40,466.90	0	0	0	0	0
Moonachie Borough	340053	0237	13	41	8,496,570.26	0	2	14	4,156,620.65	0
New Milford Borough	340054	0238	140	507	21,139,137.13	4	46	252	8,908,521.8	4
North Arlington Borough	340055	0239	10	21	841,499.85	0	0	0	0	0
Northvale Borough	340056	0240	8	17	1,399,629.98	0	0	0	0	0
Norwood Borough	340057	0241	2	6	32,178.85	0	0	0	0	0
Oakland Borough	345309	0242	74	275	5,832,456.14	20	22	117	3,039,715.25	3
Old Tappan Borough	340059	0243	5	18	486,519.03	0	1	4	331,011.43	0
Oradell Borough	340060	0244	2	6	666,871.94	0	0	0	0	0
Palisades Park Borough	340061	0245	2	12	1,885,332.84	0	1	1	1,878,594.62	0
Paramus Borough	340062	0246	12	31	409,509.15	0	0	0	0	0
Ridgefield Borough	340065	0249	7	19	343,831.81	0	1	5	80,327.88	0
Ridgefield Park Village	340066	0250	44	111	2,206,997.66	3	3	14	280,049.47	0
Ridgewood Village	340067	0251	29	85	1,780,924.71	0	4	18	646,350.05	0
River Edge Borough	340068	0252	14	41	3,017,720.58	0	2	10	1,114,050.23	0
River Vale Township	340069	0253	17	61	2,673,761.42	0	2	26	1,665,663.47	0
Rochelle Park Township	340070	0254	156	403	15,792,028.22	6	0	0	0	0
Rutherford Borough	340072	0256	55	173	3,948,034.13	0	10	50	1,651,875.45	0

Municipal Identification			Repetitive Loss Property Information				Severe Repetitive Loss Information			
Municipality <i>74% of towns in NJ have Repetitive Loss Properties</i>	NFIP CID #	Co/Mun #	# of RL Properties	# of RL Losses	Total NFIP Claims Paid	# Mitigated	# of SRL Properties	# of SRL Losses	Total NFIP SRL Claims Paid	# Mitigated
Saddle Brook Township	340074	0257	50	126	4,913,968.68	0	0	0	0	0
Saddle River Borough	340073	0258	7	25	387,346.85	0	2	10	132,127.95	0
South Hackensack Twp	340515	0259	8	16	561,114.71	0	0	0	0	0
Teaneck Township	340075	0260	8	18	129,307.30	0	0	0	0	0
Tenafly Borough	340076	0261	5	10	58,326.47	0	0	0	0	0
Upper Saddle River Boro	340077	0263	5	10	47,344.05	0	0	0	0	0
Waldwick Borough	340078	0264	1	2	6,651.06	0	0	0	0	0
Wallington Borough	340079	0265	98	247	5,748,854.97	0	7	28	1,154,137.37	0
Washington Township	340080	0266	5	22	225,180.79	0	0	0	0	0
Westwood Borough	340081	0267	108	420	10,937,646.71	0	34	213	6,631,912.47	0
Woodcliff Lake Boro	340082	0268	3	7	131,245.57	0	0	0	0	0
Wood-Ridge Borough	340083	0269	4	10	199,792.78	0	0	0	0	0
Wyckoff Township	340084	0270	1	9	439,033.29	0	0	0	0	0
NJ Meadowlands Comm.	340570	0299	119	303	17,077,145.45	2	6	51	3,315,338.14	0
Bergen County Total			1878	5521	183,359,092.1	44	237	1351	54,932,690.57	9

Table 2.5: Insurance Occupancy – Residential/Non-Residential
Source NFIP Community Information System as of 12/31/2014

Bergen County	NJ ID#	CID#	Policies in force				
			Single Family	2-4 Family	All other Residential	Non-Residential	Total
Allendale Borough	0201	340019	70	2	0	6	78
Alpine Borough	0202	340581					
Bergenfield Borough	0203	340020	140	14	49	21	224
Bogota Borough	0204	340021	11	1	0	4	16
Carlstadt Borough	0205	340022	6	4	0	39	49
Cliffside Park Borough	0206	340582					
Closter Borough	0207	340023	27	2	0	10	39
Cresskill Borough	0208	340024	71	2	3	7	83
Demarest Borough	0209	340025	40	0	0	0	40
Dumont Borough	0210	340026	132	17	7	6	162
Elmwood Park Borough	0211	340500	45	17	1	17	80
East Rutherford Borough	0212	340028	83	54	28	32	197
Edgewater Borough	0213	340029	46	30	1836	61	1973
Emerson Borough	0214	340030	20	0	0	1	21
Englewood City	0215	340031	186	38	184	93	501
Englewood Cliffs Borough	0216	340580					
Fair Lawn Borough	0217	340033					
Fairview Borough	0218	340034	5	4	0	8	17
Fort Lee Borough	0219	340035	14	4	2	0	20
Franklin Lakes Borough	0220	340036	54	3	0	3	60
Garfield City	0221	340037	57	111	2	40	210
Glen Rock Borough	0222	340038	68	0	0	3	71
Hackensack City	0223	340039	86	51	511	157	805
Harrington Park Borough	0224	340040	33	3	2	0	38
Hasbrouck Hts. Borough	0225	340041	17	1	0	6	24
Haworth Borough	0226	340042	17	0	0	0	17
Hillsdale Borough	0227	340043	117	2	1	22	142
Ho-Ho-Kus Borough	0228	340044	84	4	0	11	99
Leonia Borough	0229	340045	28	0	7	7	42
Little Ferry Borough	0230	340046	704	234	184	60	1182
Lodi Borough	0231	340047	52	84	138	57	331
Lyndhurst Township	0232	340048	131	45	89	14	279
Mahwah Township	0233	340049	138	1	27	20	186
Maywood Borough	0234	340050	36	2	12	5	55
Midland Park Borough	0235	340051	9	2	3	11	25
Montvale Borough	0236	340052	37	0	0	3	40

Moonachie Borough	0237	340053	227	21	0	42	290
New Milford Borough	0238	340054	178	5	18	15	216
North Arlington Borough	0239	340055					
Northvale Borough	0240	340056	28	3	22	43	96
Norwood Borough	0241	340057	38	0	0	11	49
Oakland Borough	0242	345309	207	9	1	6	223
Old Tappan Borough	0243	340059	31	0	0	0	31
Oradell Borough	0244	340060	33	0	0	7	40
Palisades Park Borough	0245	340061	5	5	1	5	16
Paramus Borough	0246	340062	174	4	4	62	244
Park Ridge Borough	0247	340063	38	2	17	10	67
Ramsey Borough	0248	340064	97	9	15	16	137
Ridgefield Borough	0249	340065	68	23	4	21	116
Ridgefield Park Village	0250	340066	81	26	140	26	273
Ridgewood Village	0251	340067	338	3	1	12	381
River Edge Borough	0252	340068	39	0	6	19	64
River Vale Township	0253	340069	74	0	0	1	75
Rochelle Park Township	0254	340070	339	2	12	28	381
Rockleigh Borough	0255	340071	4	0	0	3	7
Rutherford Borough	0256	340072	112	12	41	15	180
Saddle Brook Township	0257	340074	207	50	47	30	334
Saddle River Borough	0258	340073	31	0	0	11	42
South Hackensack Twp.	0259	340515	13	8	0	42	63
Teaneck Township	0260	340075	140	1	29	9	179
Tenafly Borough	0261	340076	66	11	1	1	79
Teterboro Borough	0262	340537	0	1	1	4	6
Upper Saddle River Bor.	0263	340077	74	0	0	2	76
Waldwick Borough	0264	340078	29	2	0	1	32
Wallington Borough	0265	340079	125	302	41	48	516
Washington Township	0266	340080	43	0	1	1	45
Westwood Borough	0267	340081	192	6	124	15	337
Woodcliff Lake Borough	0268	340082	48	0	0	2	50
Wood-Ridge Borough	0269	340083	20	7	1	10	38
Wyckoff Township	0270	340084	58	2	0	0	60
Hackensack Meadowlands Commission	0299	340570	444	182	1039	679	2344

Each Bergen County municipality has a floodplain manager. Table 2.6 lists the Floodplain Administrators (FPAs) for each jurisdiction.

Table 2.6: Bergen County Floodplain Administrators

MUNICIPALITY	NAME	TITLE
Allendale	John A. Wittekind, Jr.	Construction Code Official
Alpine	Gary Vander Veer	Engineer
Bergenfield	Kenneth R. Pfannen	Construction Official
Bogota	Daniel D. Howell	Construction Official
Carlstadt	Frank J. Recanati	Construction Official
Cliffside Park	Stewart DeVito	OEM Coordinator
Closter	Michael Sartori	Construction Official
Cresskill	Edward M. Rossi	Construction Official
Demarest	Edward M. Rossi	Construction Official
Dumont	Edward Rossi	Building Inspector
East Rutherford	Frank Recanati	Construction Official
Edgewater	John Candelmo	Construction Official
Elmwood Park	Nordan Murphy	Engineer
Emerson	Carol Dray	Borough Clerk
Englewood	Ken Albert/Frantz Volcey	Engineer
Englewood Cliffs	Bernard Mirandi	Engineer
Fair Lawn	Kenneth Garrison	Engineer
Fairview	Thomas Leonardi	Building Inspector
Fort Lee	Brian Ribarro	Construction Official
Franklin Lakes	Raymond W. Dressler	Construction Official
Garfield	Gerald P. Walis	Construction Official
Glen Rock	Brian Frugis	Construction Official
Hackensack	Joseph C. Mellone	Construction Official
NJ Meadowlands Commission	Sara J. Sundell	Chief Engineer
Harrington Park	Joseph P. Zavarino	Construction Official
Hasbrouck Heights	Nicholas Melfi, Jr.	Construction Official
Haworth	Harry W. Kraus	Construction Official
Hillsdale	Michelle E. Wood	Construction Official
Ho-Ho-Kus	Mark Berninger	Construction Official
Leonia	Jack Peters	Construction Official
Little Ferry	Richard Bolan	Construction Official
Lodi	Joel (Bo) K. Lavin	Construction Official
Lyndhurst	Mark J. Sadonis	Construction Official
Mahwah	Kevin Boswell	Engineer
Maywood	George J Georgeou	Clerk

Midland Park	John A. Wittkind, Jr.	Construction Official
Montvale	Jeffrey Fette	Construction Official
Moonachie	Michael Sartori	Construction Official
New Milford	James Taormina	Construction Official
North Arlington	Robert A. Kairys	Construction Official
Northvale	Nicola A. Lepore	Construction Official
Norwood	Paul D. Renaud	Construction Official
Oakland	Dan Hagberg	Planning Board/CO
Old Tappan	Nicola A. Lepore	Construction Official
Oradell	Stanley Kufel	OEM Coordinator
Palisades Park	Anthony Pollotta	Construction Official
Paramus	George Georgeou	Construction Official
Park Ridge	Nick Saluzzi	Construction Official
Ramsey	Jack D'Agostaro	Engineer
Ridgefield	Armand S. Marini, III	Construction Official
Ridgefield Park	Michael Landolfi	Construction Official
Ridgewood	Anthony Merlino	Construction Official
River Edge	Robert E. Byrnes, Sr.	Construction Official
River Vale	Michael Sartori	Construction Official
Rochelle Park	Richard Bolan	Construction Official
Rockleigh	William J. McGuire	Construction Official
Rutherford	John J. Uhl	Construction Official
Saddle Brook	Anthony Ambrogio	Construction Official
Saddle River	Martin Spence	Engineer
South Hackensack	Hugh J. Riley	Construction Official
Teaneck	Steven M. Gluck	Construction Official
Tenafly	Robert E Byrnes, Sr.	Construction Official
Teterboro	Joseph G. Marra	Construction Official
Upper Saddle River	Theodore Preusch	Boro Administrator
Waldwick	Joseph G. Mysliwicz	Construction Official
Wallington	Nick Melfi	Construction Official
Washington	John Scialla	Construction Official
Westwood	Armand Marini	Construction Official
Woodcliff Lake	Canio N. Saluzzi	Construction Official
Wood-Ridge	Brian Intindola	Engineer

2.10 Risk Mapping, Assessment, and Planning (MAP) Program

Risk MAP is the FEMA program that provides communities with flood information and tools to enhance their mitigation plans and take action to better protect their residents. Through more precise flood mapping, risk assessment tools, and planning and outreach support, Risk MAP strengthens local ability to make informed decisions about reducing risk. Through collaboration with State, Tribal, and local entities, Risk MAP delivers quality data that increases public awareness and leads to action that reduces risk to life and property. Risk MAP focuses on products and services beyond the traditional Flood Insurance Rate Map (FIRM) and works with officials to help put flood risk data and assessment tools to use, effectively communicating risk to citizens and enabling communities to enhance their mitigation plans and actions

This non-regulatory mapping was not available for this Plan update; the RISK MAP program will be used for future Bergen Plan updates and through the maintenance process.

2.11 Mitigation Planning Initiatives in Bergen County Post-Hurricane Sandy

Several planning efforts have begun post-Hurricane Sandy to address the unprecedented flooding that occurred in several southern Bergen County municipalities. Little Ferry and Moonachie were the hardest hit by the storm surge flooding, and as a result, planning groups have come together to try and devise a realistic mitigation strategy against future flooding of this magnitude. Two efforts will be addressed in this Plan Update.

Flood Mitigation Engineering Resource Center Study

In the fall of 2013, the NJDEP awarded the New Jersey Institute of Technology (NJIT) a \$289,000 grant to investigate alternative measures for flood mitigation in the Hackensack/Moonachie/Little Ferry area. This effort was intended to enhance on-going efforts by the US Army Corps of Engineers and other organizations. NJIT's Flood Mitigation Engineering Resource Center conducted the research.

The strategy, which aimed to make the communities safer and more resilient, will be derived from evaluating exposure to all flood hazards, including historical storms and a possible dam break, and recommending the most cost-effective portfolio of flood mitigation measures. The six-month project will involve assessment of the flood impacts and evaluate a range of capital improvements, maintenance and operations and regulatory measures, including structural and non-structural engineering alternatives, zoning, code and system design and redundancy measures.

The recommendations of the FMERC team included the following:

1. *Structural Flood Protection Alternatives:* The team generated a number of strategically located flood protection structures, some involving river crossings, and evaluated their costs and estimated their key benefits.

2. *Non-Structural Mitigation Alternatives:* The project team identified some of the key problem areas related to the overall regional drainage capability of the study area, which interfaces with the respective municipal stormwater drainage systems. In addition to problems with the stormwater systems, critical deficiencies were identified in pumping capacities and operating standards, drainage network topology, and the blocked condition of ditches and waterways, which are the receiving bodies for many of the key outlet structures. Also, the team reviewed opportunities for non-structural green infrastructure solutions.

3. Maintenance, Asset Management and Regulatory Improvements: The FMERC team also examined asset management opportunities related to key flood protection assets, such as tide gates, pumping stations and power generators, as well as the piping links within the drainage network, and has developed a number of recommendations on the improvement of the network connectivity and drainage capacity. The team assessed regulatory, organizational and policy hurdles and is developing recommendations in this category, which will improve the level of coordination, resiliency and organizational effectiveness in support of flood mitigation solution development and implementation.^v

The complete study and recommendations can be found at <http://www.nj.gov/dep/docs/flood/final-studies/njit-moonachie/njit-njdep-fmerc-finalreport-06182014.pdf>.

Rebuild By Design

Rebuild by Design was launched in June 2013 as a HUD competition to respond to Superstorm Sandy's devastation in the United States' northeast region. Initiated by the US Department of Housing and Urban Development and the Presidential Hurricane Sandy Rebuilding Task Force, Rebuild by Design connected researchers and designers with the Sandy-affected area's active businesses, policymakers and local groups to better understand how to redevelop their communities in environmentally- and economically-healthier ways and to be better prepared. After the year-long competition, Secretary Shaun Donovan of HUD announced the award of \$930M to the winning ideas. Rebuild by Design will continue to work with local governments and communities to ensure that the integrity, ambition and innovation of the selected proposals are included in the built designs.

One of the winning projects focused on the Meadowlands and is entitled "New Meadowlands: Productive City + Regional Park." From the project proposal:

The New Meadowlands project articulates an integrated vision for protecting, connecting, and growing this critical asset to both New Jersey and the metropolitan area of New York. Integrating transportation, ecology, and development, the project transforms the Meadowlands basin to address a wide spectrum of risks, while providing civic amenities and creating opportunities for new redevelopment.^{vi}

The Design Team held a stakeholder meeting at the NJ Meadowlands Commission in February 2014. Bergen County will follow this design process as it continues.

2.12 Preliminary Flood Insurance Rate Maps

Bergen County is required to document existing technical information in the preparation of this Plan update. Due to the long range nature of the planning process, certain technical documents have been released at various stages of the process. The preliminary flood insurance rate maps (FIRMs) for Bergen County were released in 2014. All of the base mapping for this update has been revised to include the preliminary FIRM data. This includes all maps produced by the Planning Team for Section 3, as well as all of the critical facility maps found in Appendices C and E.

FIRMs are updated periodically, as flood risk can change over time, through natural changes and man-made changes like development, which can decrease or increase the risk. The New York/New Jersey coast is one of the most populated coastal areas in the United States, and a large amount of development has happened since most effective FIRMs for the area were produced. During this period, advancements in

the methodologies, technologies, and information available to map coastal flood hazards have also been developed.

Due to the timing of the map release, the question has arisen whether the maps were updated due to the impacts of Hurricane Sandy. According to FEMA, the flood studies use a long-term projection of flood hazards based on the most current and accepted models, technology, and information available.

2.13 Community Rating System

The National Flood Insurance Program (NFIP) Community Rating System (CRS) was implemented in 1990 as a voluntary program for recognizing and encouraging community floodplain management activities exceeding the minimum NFIP standards. Any community in full compliance with the minimum NFIP floodplain management requirements may apply to join the CRS.

Under the CRS, flood insurance premium rates are discounted to reflect the reduced flood risk and to reward community actions that meet the three goals of the CRS, which are:

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

Flood insurance premium discounts ranging from 5% to a maximum of 45% will be applied to eligible policies in a community in recognition of the floodplain management activities implemented. Four classes of activities are recognized for eliminating flood exposure: Public Information, Mapping and Regulation, Flood Damage Reduction, and Flood Preparedness. Credit points are determined by FEMA based on the activities of each community, and these points determine the premium discount.

Table 2.6: Bergen County Participation in CRS

Information dated May 5, 2014

COMMUNITY	CRS ENTRY DATE	CURRENT EFFECTIVE DATE	CURRENT CLASS	% DISCOUNT FIR SFHA	% DISCOUNT FOR NON-SFHA	STATUS
ENGLEWOOD	10/1/91	10/1/01	10	0	0	R
GARFIELD	05/1/12	05/1/12	9	5	5	C
LITTLE FERRY	10/1/93	10/1/94	10	0	0	R
LODI	10/1/92	10/1/93	10	0	0	R
NEW JERSEY MEADOWLANDS COMMISSION*	10/1/92	05/1/09	7	15	5	C
OAKLAND	10/1/95	10/1/96	10	0	0	R
RIDGEWOOD	10/1/92	10/1/02	7	15	5	C
ROCHELLE PARK	10/1/06	10/1/06	8	10	5	C

**Only the portions of Bergen County municipalities within the NJMC jurisdiction are included in the CRS program. Bergen County NJMC communities include Carlstadt, East Rutherford, Little Ferry, Lyndhurst, Moonachie, North Arlington, Rutherford, South Hackensack, and Teterboro.*

Some communities feel that participating in the CRS will be time consuming and require a considerable time investment on their part. It is true that a CRS-participating community must designate a local official to act as the CRS coordinator and point of contact. This person will need to devote some time to become

familiar with CRS and complete an application. After the first year, less time is required as the community standardizes its implementation procedures. Certainly, the time commitment for CRS Class 9 or Class 8 communities is much less than that for communities in CRS Class 3, 2, or 1, but the premium discount is also not as great. CRS communities report that the additional commitment is well worth the effort in reduced premiums, a safer community, and increased recognition and awareness of flood risk. Participation in the CRS is included as a mitigation activity (Chapter 4) for all non-participating Bergen County communities with SFHAs within their borders.

¹ FEMA, National Flood Insurance Program: Frequently Asked Questions.
http://www.fema.gov/txt/rebuild/repetitive_loss_faqs.txt

² FEMA, Severe Repetitive Loss Pilot Program Guidance, January 14, 2008.

^v <http://www.nj.gov/dep/docs/flood/final-studies/njit-moonachie/njit-njdep-fmerc-finalreport-06182014.pdf>

^{vi} Rebuild By Design website,
<http://www.rebuildbydesign.org/project/mit-cau-zus-urbanisten-final-proposal/#details>

3. Risk Assessment

WHAT'S NEW IN CHAPTER 3?

- *Text revisions have been made based on hazards that have occurred in Bergen County since the Plan was last submitted in 2007.*
- *Historical population growth and building permit data has been added.*
- *Data regarding repetitive loss and severe repetitive loss properties in Bergen County has been added, as well as updated NFIP claims information.*
- *Critical facility data (text) has been updated to include new critical facilities and to remove those that have closed or moved. In addition, if any critical facility has been deemed more or less vulnerable to any natural hazard, it is reflected in the Plan.*
- *Tables and maps that contain critical facility data have also been updated as necessary, and are now located in the Appendices.*
- *It should be noted that any charts or tables that were updated at their original source were included in the Plan; otherwise, such charts or tables remain unchanged.*
- *Information on recent disasters to impact Bergen County has been added.*
- *Coastal erosion and Dam and levee failure were added as hazards of concern for Bergen County.*

In assessing Bergen County's vulnerability to potential natural hazards, it was important to take into account the natural and built environments and review details of past hazard events.

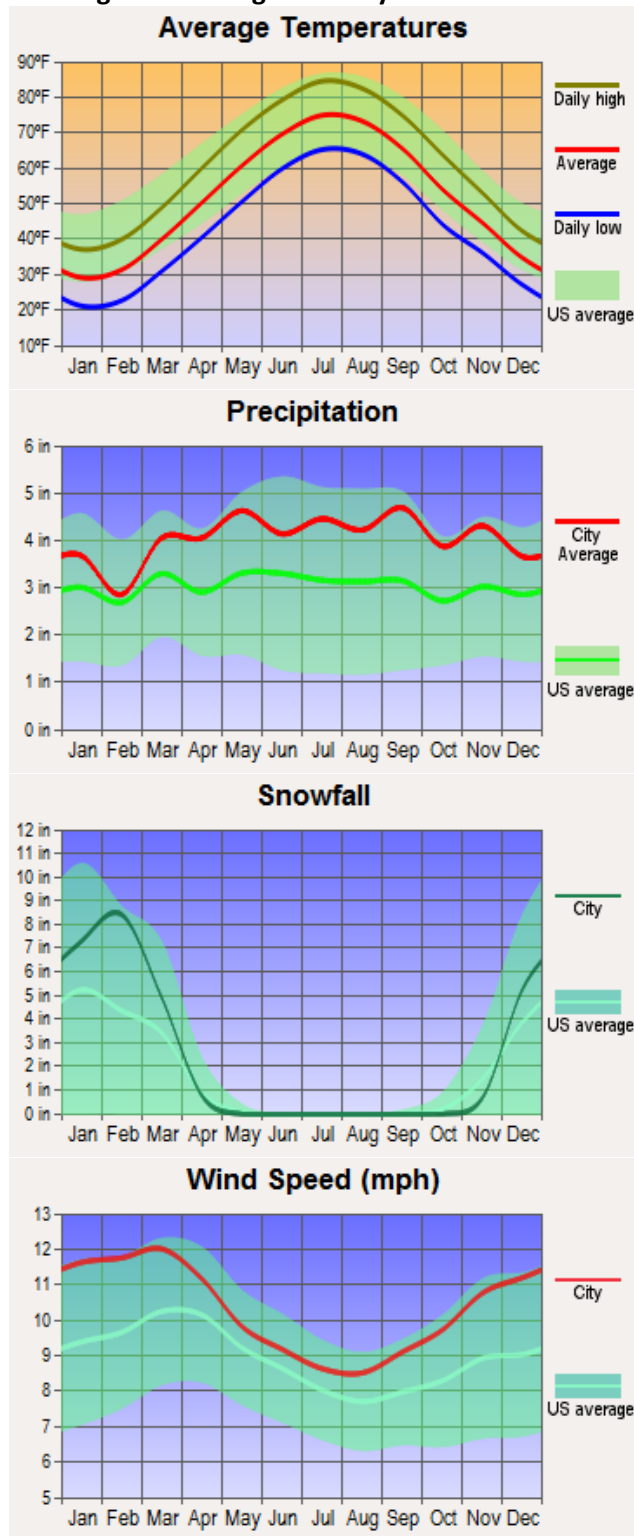
This chapter contains summary information regarding background characteristics of the land and environment for the County in general. It identifies natural hazards that have been experienced by most Bergen County municipalities. It also details hazards which have caused damage to individual municipalities in recent years and identifies critical facilities located in each municipality. *Please note that citations for the maps and graphics used may be found in the text as well as the endnotes at the conclusion of this section.*

3.1 Climatological Characteristics of the County

Figure 3.1 gives a general overview of climatic conditions for Bergen County municipalities, on average, at different times of the year. In scoping out climatological data, it was found that most data sources maintain the information on a municipal level, not a county level. While NJMC Geographic Information Systems specialists determined that it might be possible to obtain raw data from the State of New Jersey Climatologist and create new county-wide graphics, it would be quite time consuming and probably not yield a significant amount of additional information. In comparing the data of numerous municipalities, it was determined that by selecting a centrally-located municipality in the County - Paramus - it provided climatological information closely representative of the overall County for purposes of a multi-jurisdictional plan such as this.

The following graphics include average climatology for temperature, precipitation, snowfall, and wind speed.¹

Figure 3.1: Bergen County Weather Data



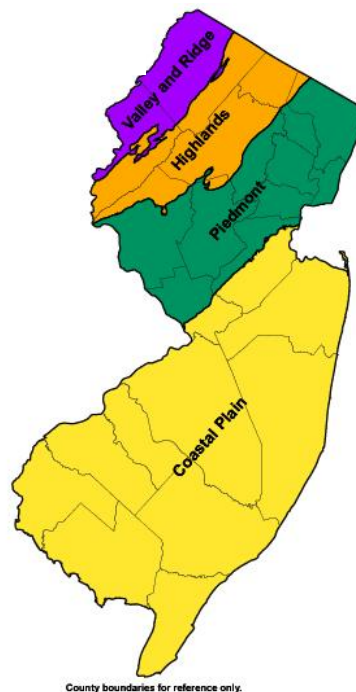
As noted, weather in Bergen County is seasonal with precipitation, snowfall, and wind speeds slightly exceeding, but within normal range, of the national average.

3.2 Physical Geography

Bergen County is situated within two of New Jersey's physiographic provinces, the Highlands and Piedmont Provinces, as illustrated in Figure 3.2.² Bergen contains the Palisades, one of the most dramatic geological features in the New York City region. The Palisades are a string of steep cliffs hovering over the western edge of the lower Hudson River. Rising vertically from the river edge, the cliffs range in height between 350 to 550 feet. Ramapo Mountain, at 1,171 feet, is the highest elevation on the southeast portion of the Highlands Province in Bergen County.

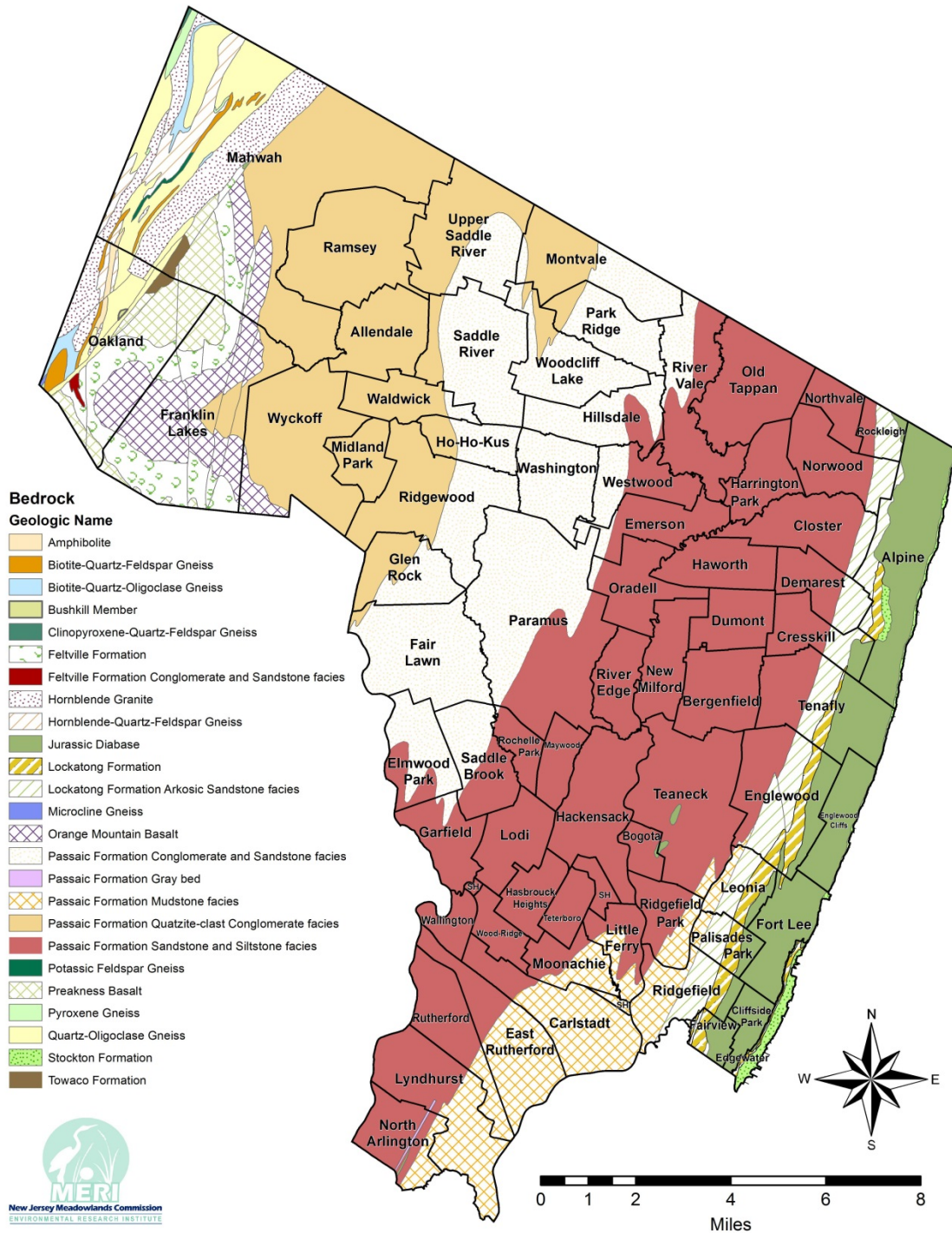
According to *The Geology of New Jersey*, a bulletin of the New Jersey Geologic Survey, the underlying rock base in the Highlands Province is primarily Middle Proterozoic age metamorphosed igneous and sedimentary rock. Where the Highlands meets the Piedmont Province, the crystalline rocks of the Highlands come into contact with much younger Triassic and Jurassic age sedimentary and Jurassic age igneous rocks of the Piedmont. The Highlands and Piedmont rocks are separated by a series of major faults, including the Ramapo Fault. Rocks range from the more resistant gneisses and granites of the hill areas to sandstone, siltstone, and shale deposited closer to the river and lake basins of the region.

The Palisades contain rifting associated with historic volcanic activity. Rock in this area is primarily basalt and diabase, indicative of this activity. Much of this underlying geologic data is illustrated in Figure 3.3, Bedrock Geology of Bergen County, on the following page.³



Source: New Jersey Geologic Survey

Figure 3.2: Physiographic Provinces of New Jersey



This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.

Figure 3.3: Bedrock Geology of Bergen County, NJ

3.3 Demographics/ Land Use/Transportation

Bergen County is a highly developed, primarily suburban area in New Jersey with several urban municipalities located throughout, including the county seat of Hackensack. While the County is the most densely populated in the state, the population is not evenly distributed by number or character. Northern Bergen County municipalities tend to be less densely populated than South Bergen municipalities. Northern towns also differ from the southern towns in that the northern demographic base tends to be of a higher household income and less diverse racial/ethnic background.

The developed nature of the County is reflected in the Land Use Land Cover of Bergen County map, Figure 3.4.⁴ Please note that this map is based on the most recent data available from NJDEP. The map illustrates the County almost exclusively as urban land, with forest cover found mainly in the areas of the Palisades and Ramapo Mountains and wetlands principally in the Meadowlands District.

Land use in New Jersey is regulated at the municipal level in accordance with the State Constitution and the New Jersey Municipal Land Use Law. In the Meadowlands District in Bergen County, land use and zoning powers are within the purview of the New Jersey Meadowlands Commission's Master Plan and District Zoning Regulations.

There is a well-established transportation network throughout Bergen County. Major roadways consist of Interstate Routes 80, 95 (New Jersey Turnpike), and 287; U.S. Routes 1, 9W, and 202; many State highways including Routes 3, 4, 17, 120, and 208; and the Garden State and Palisades Parkways. These roadways are illustrated in Figure 3.5, Bergen County Major Roadways.⁵

For the purposes of this section only, Bergen County has been divided into six areas where the municipalities share common population and socio-economic characteristics, as well as topography. The Bergen County Department of Planning uses these designations due to the large number of municipalities. The geographic areas include the following:

Northwest Bergen: Allendale, Franklin Lakes, Glen Rock, Ho-Ho-Kus, Mahwah, Midland Park, Oakland, Ramsey, Ridgewood, Saddle River, Upper Saddle River, Waldwick and Wyckoff

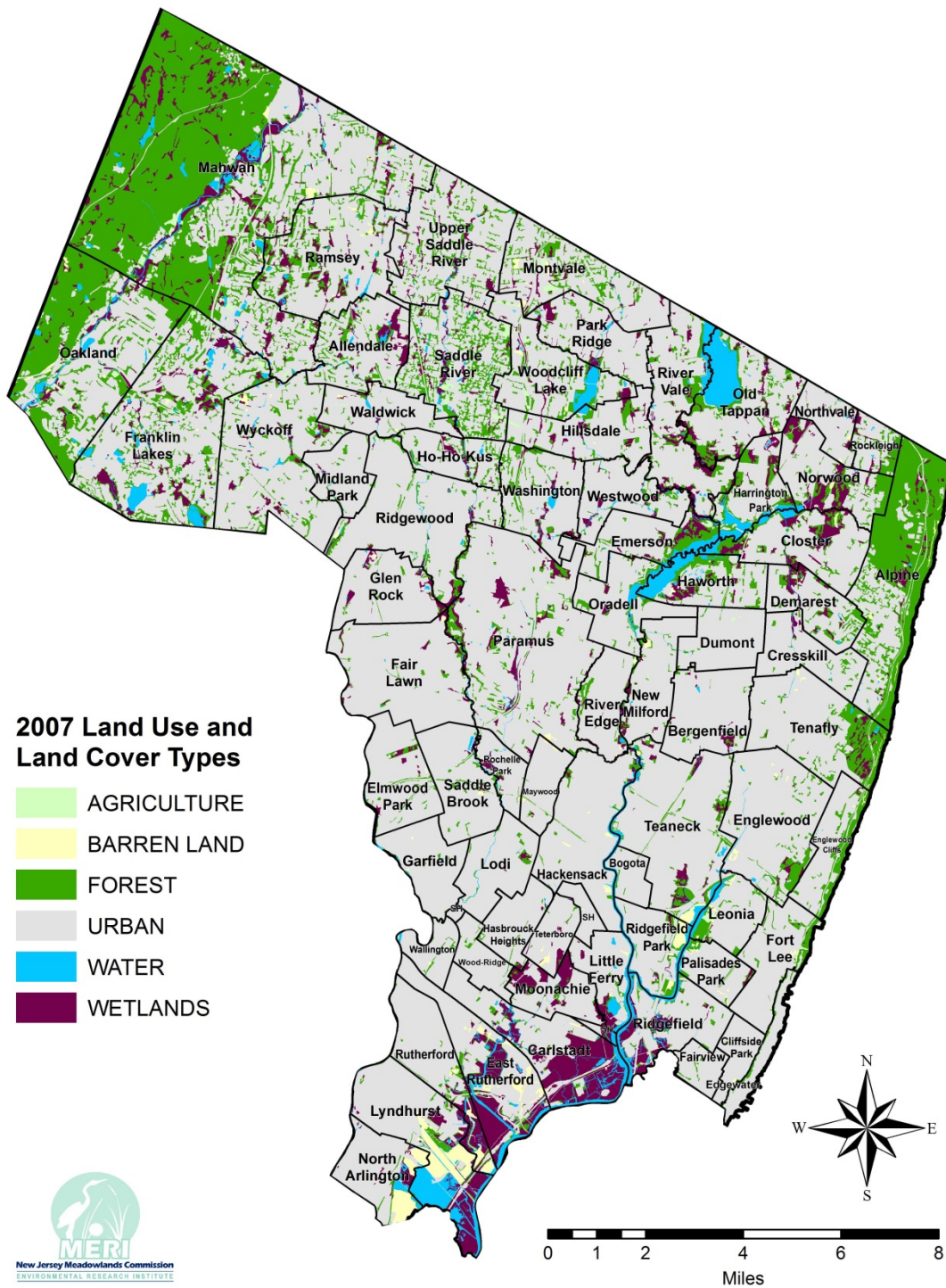
Pascack Valley: Emerson, Hillsdale, Montvale, Park Ridge, River Vale, Washington, Westwood and Woodcliff Lake

Northern Valley: Alpine, Bergenfield, Closter, Cresskill, Demarest, Dumont, Englewood, Englewood Cliffs, Harrington Park, Haworth, Northvale, Norwood, Old Tappan, Rockleigh and Tenafly

Central Bergen: Bogota, Elmwood Park, Fair Lawn, Garfield, Hackensack, Lodi, Maywood, New Milford, Oradell, Paramus, River Edge, Rochelle Park, Saddle Brook and Teaneck

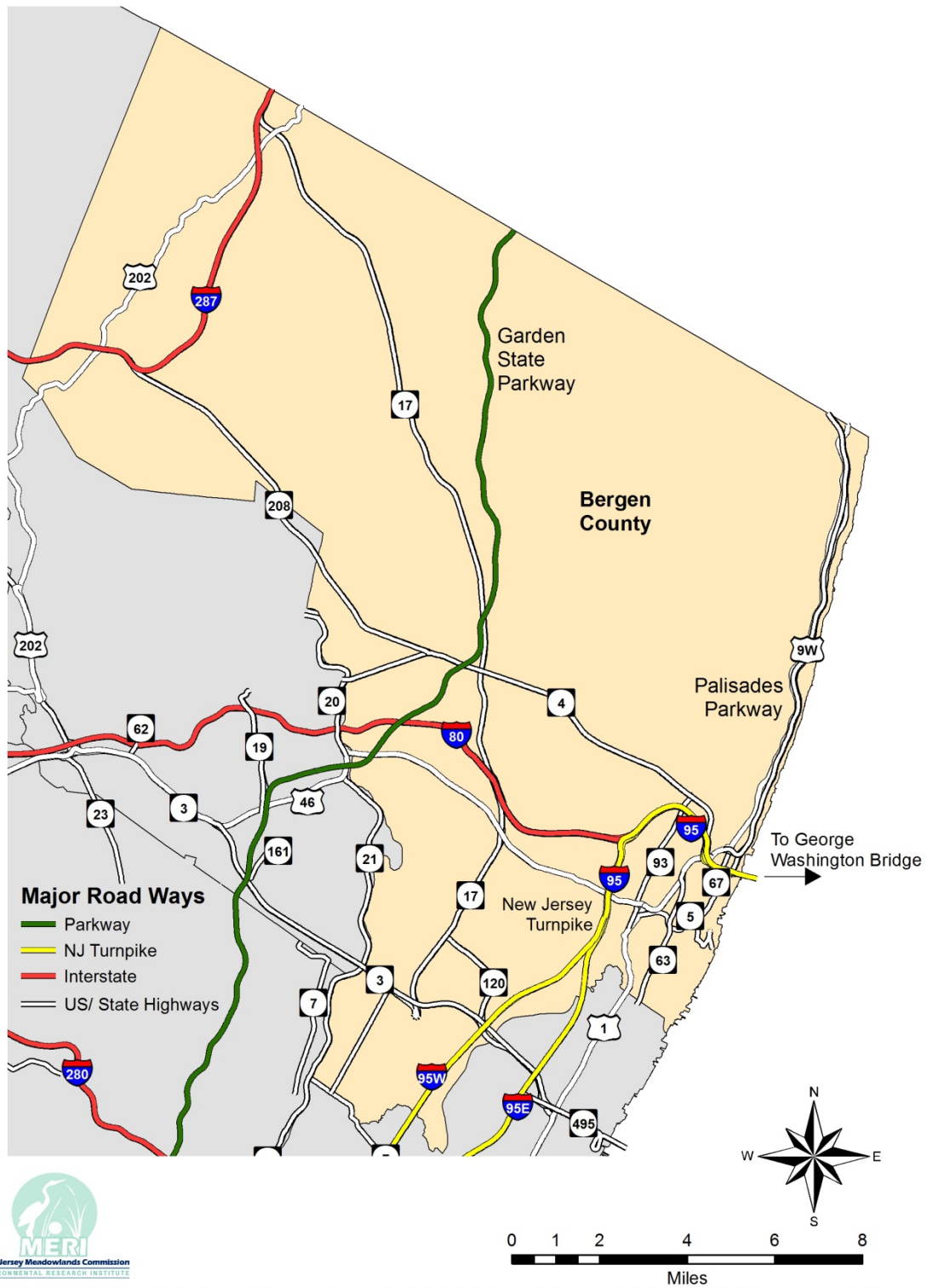
Southeast Bergen: Cliffside Park, Edgewater, Fairview, Fort Lee, Leonia, Palisades Park, Ridgefield and Ridgefield Park

Southwest Bergen: Carlstadt, East Rutherford, Hasbrouck Heights, Little Ferry, Lyndhurst, Moonachie, North Arlington, Rutherford, South Hackensack, Teterboro, Wallington and Wood-Ridge



This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.

Figure 3.4: Land Use and Land Cover of Bergen County, NJ



This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.

Figure 3.5: Bergen County, NJ Major Roadways

Population Growth

The Planning Team looked at population growth from 1960-2012, and building permits from 2002-2012. These data sources illustrate a number of trends as noted below.

Bergen County overall grew at a moderate 3.8% pace from 2000-2012, in which 64 of the 70 municipalities showed a positive growth rate. Southeast Bergen grew almost twice as fast as the rest of the County at 7.1%. This section of the County is experiencing rapid growth, particularly with multifamily residential developments along the Hudson River waterfront. Six of Southeast Bergen's eight municipalities have reached their highest population ever in 2012, Edgewater with a 35.9% growth rate from 2000-2012, and Palisades Park with a rate of 14.4% during that same time period. These figures are detailed in Table 3.1.⁶

Table 3.1: Bergen County Population Growth, 1960 - 2012

POPULATION GROWTH								
<u>NORTHWEST BERGEN</u>	1960	1970	1980	1990	2000	2010	2012	% Growth
ALLENDALE	4,092	6,240	5,901	5,900	6,699	6,505	6,657	-0.7
FRANKLIN LAKES	3,316	7,550	8,769	9,873	10,422	10,590	10,660	2.3
GLEN ROCK	12,896	13,011	11,497	10,833	11,546	11,601	11,799	2.2
HO-HO-KUS	3,988	4,348	4,129	3,935	4,060	4,078	4,140	2.0
MAHWAH	7,376	10,800	12,127	17,905	24,062	25,890	26,168	8.0
MIDLAND PARK	7,543	8,159	7,381	7,047	6,947	7,128	7,227	3.9
OAKLAND	9,446	14,420	13,443	11,997	12,466	12,754	12,873	3.2
RAMSEY	9,527	12,571	12,899	13,228	14,351	14,473	14,727	2.6
RIDGEWOOD	25,391	27,547	25,208	24,152	24,936	24,958	25,205	1.1
SADDLE RIVER	1,776	2,437	2,763	2,950	3,201	3,152	3,178	-0.8
UPPER SADDLE RIVER	3,570	7,949	7,958	7,198	7,741	8,208	8,285	6.6
WALDWICK	10,495	12,313	10,802	9,757	9,622	9,625	9,857	2.4
WYCKOFF	11,205	16,039	15,500	15,372	16,508	16,696	16,867	2.2
TOTALS	110,621	143,384	138,377	140,147	152,561	155,658	157,643	1.4
<u>PASCACK VALLEY</u>	1960	1970	1980	1990	2000	2010	2012	% Growth
EMERSON	6,849	8,428	7,793	6,930	7,197	7,401	7,706	6.7
HILLSDALE	8,743	11,768	10,495	9,750	10,087	10,219	10,346	2.6
MONTVALE	3,699	7,327	7,318	6,946	7,034	7,844	7,959	11.7
PARK RIDGE	6,420	8,709	8,515	8,102	8,708	8,645	8,863	1.8
RIVER VALE	5,616	8,883	9,489	9,410	9,449	9,659	9,821	3.8
WASHINGTON	6,623	10,577	9,550	9,245	8,938	9,102	9,220	3.1
WESTWOOD	9,046	11,105	10,714	10,446	10,999	10,908	11,011	0.2
WOODCLIFF LAKE	2,742	5,506	5,644	5,303	5,745	5,730	5,827	1.5
TOTALS	49,738	72,303	69,518	66,132	68,157	69,508	70,753	3.7
<u>NORTHERN VALLEY</u>	1960	1970	1980	1990	2000	2010	2012	% Growth
ALPINE	921	1,344	1,549	1,716	2,183	1,849	1,933	-11.5
BERGENFIELD	27,203	29,000	25,568	24,458	26,247	26,764	27,017	2.9

POPULATION GROWTH								
CLOSTER	7,767	8,604	8,164	8,094	8,383	8,373	8,498	1.4
CRESSKILL	7,290	8,298	7,609	7,558	7,746	8,573	8,650	10.5
DEMAREST	4,231	5,133	4,963	4,800	4,845	4,881	4,967	2.5
DUMONT	18,882	20,155	18,334	17,187	17,503	17,479	17,645	0.9
ENGLEWOOD	26,057	24,985	23,701	24,850	26,203	27,147	27,605	5.1
ENGLEWOOD CLIFFS	2,913	5,938	5,698	5,634	5,322	5,281	5,337	0.3
HARRINGTON PARK	3,581	4,841	4,532	4,623	4,740	4,664	4,807	1.4
HAWORTH	3,215	3,760	3,509	3,384	3,390	3,382	3,403	0.4
NORTHVALE	2,892	5,177	5,046	4,563	4,460	4,460	4,848	8.1
NORWOOD	2,852	4,398	4,413	4,858	5,751	5,711	5,815	1.2
OLD TAPPAN	2,330	3,917	4,168	4,254	5,482	5,750	5,843	6.2
ROCKLEIGH	110	430	308	192	391	531	530	49.1
TENAFLY	14,264	14,827	13,552	13,326	13,806	14,488	14,635	5.7
TOTALS	124,508	140,807	131,114	129,497	136,452	139,333	141,533	3.7
CENTRAL BERGEN	1960	1970	1980	1990	2000	2010	2012	% Growth
BOGOTA	7,965	8,960	8,344	7,824	8,249	8,187	8,261	0.2
ELMWOOD PARK	19,344	20,511	18,377	17,623	18,925	19,403	19,890	4.9
FAIR LAWN	36,421	37,975	32,229	30,548	31,637	32,457	32,847	3.7
GARFIELD	29,253	30,797	26,803	26,727	29,786	30,487	30,872	3.6
HACKENSACK	30,521	36,008	36,039	37,049	42,677	43,010	43,845	2.7
LODI	23,502	25,163	23,956	22,355	23,971	24,136	24,360	1.6
MAYWOOD	8,667	11,460	11,087	9,895	9,523	9,555	9,588	0.6
NEW MILFORD	18,810	19,149	16,876	15,990	16,400	16,341	16,504	0.7
ORADELL	7,487	8,903	8,658	8,024	8,047	7,978	8,083	0.5
PARAMUS	23,238	28,381	26,474	25,004	25,737	26,342	26,532	3.0
RIVER EDGE	13,264	12,850	11,111	10,603	10,946	11,340	11,464	4.6
ROCHELLE PARK	6,119	6,380	5,603	5,587	5,528	5,530	5,575	0.9
SADDLE BROOK	13,834	15,975	14,084	13,296	13,155	13,659	14,021	6.2
TEANECK	42,085	42,355	39,007	37,825	39,260	39,776	40,093	2.1
TOTALS	280,510	304,867	278,648	268,350	283,841	288,201	291,935	2.8
SOUTHEAST BERGEN	1960	1970	1980	1990	2000	2010	2012	% Growth
CLIFFSIDE PARK	17,642	18,891	21,464	20,393	23,007	23,594	23,872	3.7
EDGEWATER	4,113	4,987	4,628	5,001	7,677	11,513	11,972	35.9
FAIRVIEW	9,399	10,698	10,519	10,733	13,255	13,835	14,217	6.8
FORT LEE	21,815	30,631	32,449	31,997	35,461	35,345	35,732	0.8
LEONIA	8,384	8,847	8,027	8,365	8,914	8,937	9,018	1.2
PALISADES PARK	11,943	13,351	13,732	14,536	17,073	19,622	19,936	14.4
RIDGEFIELD	10,788	11,308	10,294	9,996	10,830	11,032	11,255	3.8
RIDGEFIELD PARK	12,701	13,990	12,738	12,454	12,873	12,729	12,864	-0.1

TOTALS	96,785	112,703	113,851	113,475	129,090	136,607	138,866	7.1
POPULATION GROWTH								
SOUTHWEST BERGEN	1960	1970	1980	1990	2000	2010	2012	% Growth
CARLSTADT	6,042	6,724	6,166	5,510	5,917	6,127	6,319	6.4
EAST RUTHERFORD	7,769	8,536	7,849	7,902	8,716	8,913	8,978	3.0
HASBROUCK HEIGHTS	13,046	13,651	12,166	11,488	11,662	11,842	11,936	2.4
LITTLE FERRY	6,175	9,064	9,399	9,989	10,800	10,626	10,730	-0.7
LYNDHURST	21,867	22,729	20,326	18,262	19,383	20,554	21,223	8.7
MOONACHIE	3,052	2,951	2,706	2,817	2,754	2,708	2,734	-0.8
NORTH ARLINGTON	17,477	18,096	16,587	13,790	15,181	15,392	15,533	2.3
RUTHERFORD	20,473	20,802	19,068	17,790	18,110	18,061	18,219	0.6
SOUTH HACKENSACK	1,841	2,412	2,229	2,106	2,249	2,378	2,429	0.0
TETERBORO	22	19	19	22	18	67	70	74.3
WALLINGTON	9,261	10,284	10,741	10,828	11,583	11,335	11,592	0.1
WOOD-RIDGE	7,964	8,311	7,929	7,506	7,644	7,626	8,358	8.6
TOTALS	114,989	123,579	115,185	108,010	114,017	115,629	118,121	3.5

Building Permits

Building permit data from 2002-2012 was obtained from the New Jersey Department of Community Affairs. The highest numbers of approved permits was in Southeast Bergen, with 5,910 permits from 2002-2012. Southeast Bergen also has the highest permit numbers for 8 of the 11 years from 2002-2012. The municipalities with the most building permits County-wide during this period, also located in Southeast Bergen, were Edgewater, Cliffside Park, Palisades Park and Fort Lee, (see Table 3.2, Figure 3.6 and Figure 3.7.)

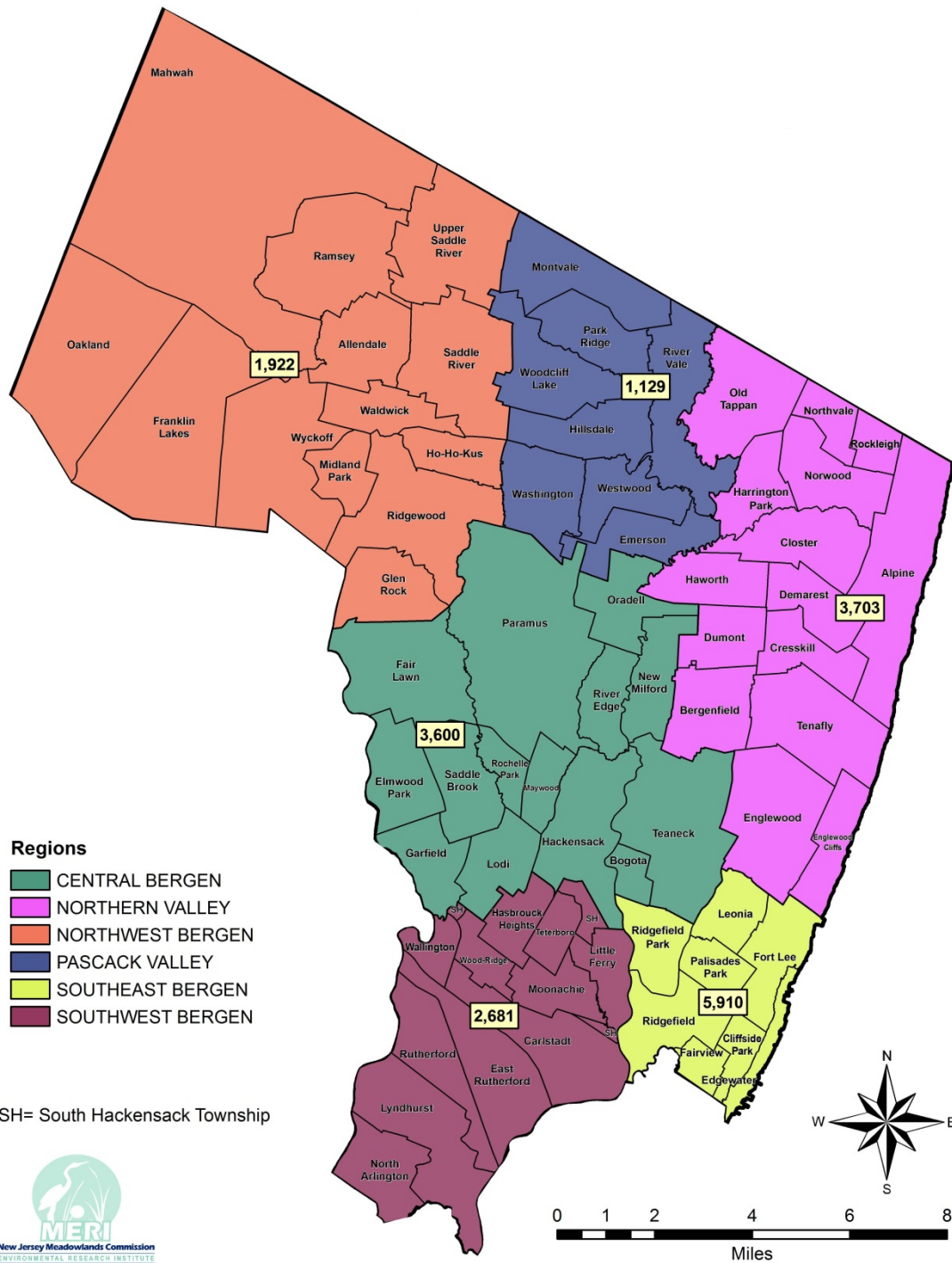
Because of the highly developed nature of Bergen County, much of the development that is occurring across the County is through redevelopment. Several towns are currently undergoing efforts to revitalize their downtown areas. Although the economy remains slow, Bergen County is a desirable place to live and work due to its location.

As discussed in the State of NJ 2014 Hazard Mitigation Plan, one of the key indicators of changes in development is the number of authorized building permits within each County. Increased development also occurs with population growth. Statewide, Hudson County experienced the greatest population growth from 2010 to 2012 followed by Middlesex, Bergen and Union Counties, in descending order. There is a growing trend in urbanization and redevelopment in Bergen, Hudson, Essex, Middlesex, Monmouth, Ocean and Union Counties as demonstrated by the increase in building permits and growth compared to the less developed areas of the State. Damages and losses as a result of hazard events are generally associated with older existing infrastructure and buildings rather than new development. This is because building codes and land use regulations limit development in hazard areas or require construction to meet higher standards within hazard areas. This provides a reduction of risk in areas where new development or redevelopment is occurring.

If the proposed new development is located within the coastal erosion-susceptible and hazard areas, there is a potential increase in risk to life, property and the environment. However, new construction will be required to meet current standards which are designed to provide increased protection compared to

existing development in the area. Coastal areas impacted by Superstorm Sandy have seen an increase in redevelopment. Similar to new construction, redevelopment will be required to meet current standards which may provide increased protection compared to their pre-event conditions.

In Bergen County, Edgewater is one of the coastal-erosion susceptible municipalities which has experienced explosive growth with multifamily and commercial development. From 2002 to 2012, Edgewater issued the greatest number of building permits of any municipality in Bergen County, with 1,363. The southeast section of Bergen County, here Edgewater is located, had the most building permits issued of any area of Bergen County. Edgewater's location along the Hudson River means that its real estate, much of it directly on the waterfront or with views of the New York City skyline, has become very valuable. Even with Edgewater's industrial past, formerly contaminated properties are being redeveloped all along the Hudson River. This phenomenon is occurring in all of the Hudson River "Gold Coast" municipalities, most of which are located to the south of Edgewater in Hudson County. Edgewater has seen the highest population growth in Bergen County, with an increase of 35.9% from 2000 to 2012. A balance must be struck between continued development pressure and the need to mitigate the growing hazard risks in waterfront communities, in Bergen County and the entire state.



This map was developed using data provided by Bergen County and is for representation purposes only. For information on map content and accuracy, contact the NJMC-MERI GIS Department at merigis@njmeadowlands.gov or 201-460-4612.

Figure 3.6: Bergen County Building Permits by Region, 2002-2012

Table 3.2: Bergen County Building Permits, 2002-2012

ITALICS REPRESENTS HIGHEST REGIONALLY ANNUAL NUMBER

UNDERLINE REPRESENTS HIGHEST MUNICIPAL ANNUAL NUMBER

BUILDING PERMITS	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012		RANK
NORTHWEST BERGEN	221	219	234	290	283	174	149	91	92	96	73	1,922	
ALLENDALE	2	0	1	1	0	12	5	15	14	11	3	64	
FRANKLIN LAKES	38	30	44	37	140	26	12	10	12	15	7	371	
GLEN ROCK	12	3	2	3	5	6	7	4	2	21	6	71	
HO-HO-KUS	2	4	2	8	4	4	0	2	6	4	1	37	
MAHWAH	22	40	29	31	32	25	10	5	10	3	9	216	
MIDLAND PARK	13	6	7	2	8	3	1	0	1	3	0	44	
OAKLAND	5	29	9	2	8	2	5	1	2	6	4	73	
RAMSEY	9	20	11	121	12	7	51	14	5	2	3	255	
RIDGEWOOD	10	9	17	10	11	9	5	3	14	11	13	112	
SADDLE RIVER	5	14	17	21	16	16	8	7	2	5	8	119	
UPPER SADDLE RIVER	56	34	66	28	27	18	14	12	7	5	8	275	
WALDWICK	16	22	12	9	3	29	2	13	5	3	3	117	
WYCKOFF	31	8	17	17	17	17	29	5	12	7	8	168	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012		
PASCACK VALLEY	151	71	99	117	183	186	54	30	104	65	69	1,129	
EMERSON	17	20	36	8	43	8	2	1	22	5	1	163	
HILLSDALE	6	10	6	13	6	12	3	5	17	0	4	82	
MONTVALE	15	6	4	18	49	112	20	2	39	33	16	314	
PARK RIDGE	19	11	22	13	59	13	5	3	5	1	16	167	
RIVER VALE	12	9	13	19	6	15	12	6	9	19	12	132	
WASHINGTON	66	3	1	4	2	12	1	4	5	2	2	102	
WESTWOOD	10	3	6	7	6	7	6	7	2	1	2	57	
WOODCLIFF LAKE	6	9	11	35	12	7	5	2	5	4	16	112	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012		
NORTHERN VALLEY	296	259	414	<i>1,175</i>	275	779	121	108	104	82	90	3,703	
ALPINE	13	11	12	28	14	10	3	5	3	2	3	104	
BERGENFIELD	13	2	10	123	17	11	6	35	1	2	4	224	
CLOSTER	30	24	43	36	28	20	11	4	24	9	7	236	
CRESSKILL	16	25	101	90	13	11	4	5	6	7	12	290	
DEMAREST	8	10	33	39	31	13	7	7	9	7	6	170	
DUMONT	17	10	15	3	8	14	16	0	1	0	0	84	
ENGLEWOOD	8	72	13	<u>685</u>	10	388	11	3	6	2	3	1,201	6

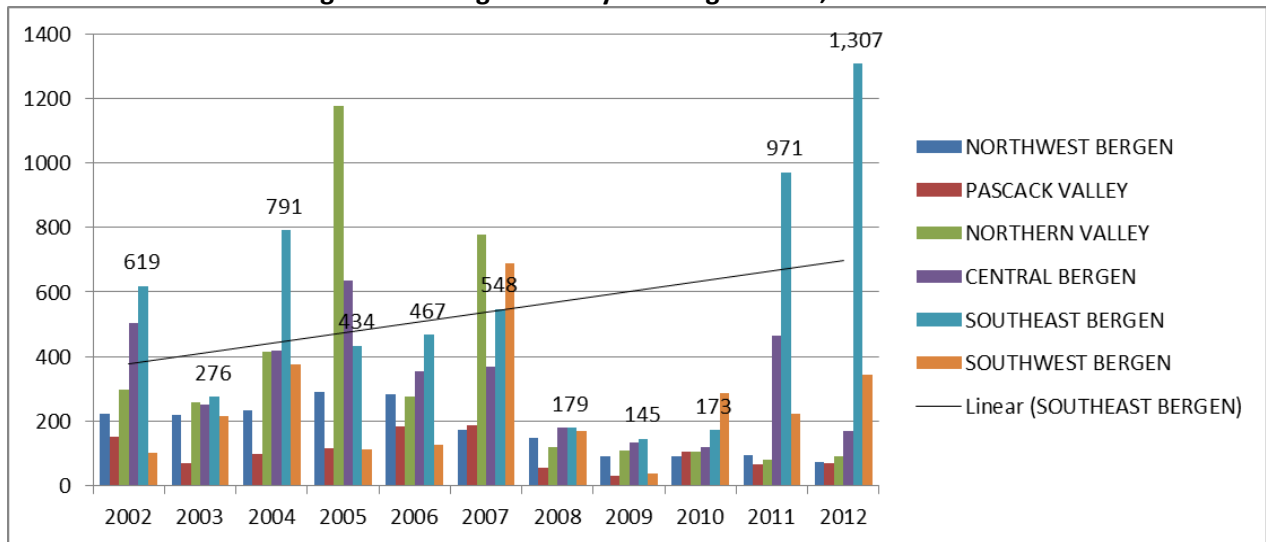
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ENGLEWOOD CLIFFS	36	32	51	35	23	27	20	7	11	6	12	260	
BUILDING PERMITS	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012		RANK
HARRINGTON PARK	29	4	45	7	9	5	3	2	3	1	3	111	
HAWORTH	3	2	5	13	9	6	2	0	1	0	4	45	
NORTHVALE	7	8	4	7	18	71	6	7	3	13	2	146	
NORWOOD	12	15	14	16	10	9	1	0	2	4	3	86	
OLD TAPPAN	50	18	29	45	32	11	8	7	11	6	7	224	
ROCKLEIGH	0	0	1	0	0	0	0	0	0	1	2	4	
TENAFLY	54	26	38	48	53	183	23	26	23	22	22	518	8
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012		
CENTRAL BERGEN	505	251	419	636	354	369	179	132	120	465	170	3,600	
BOGOTA	0	1	0	5	3	1	1	0	1	0	0	12	
ELMWOOD PARK	16	11	30	52	129	39	43	10	8	143	2	483	
FAIR LAWN	10	2	3	36	7	9	5	4	20	4	1	101	
GARFIELD	12	19	55	20	12	19	7	7	38	32	55	276	
HACKENSACK	31	11	92	104	64	59	49	<u>65</u>	4	227	3	709	7
LODI	34	47	55	58	26	11	4	2	4	6	1	248	
MAYWOOD	3	0	1	0	0	1	8	5	5	14	3	40	
NEW MILFORD	6	10	12	12	20	10	9	2	6	10	4	101	
ORADELL	0	1	5	3	5	2	4	4	2	2	9	37	
PARAMUS	96	28	36	47	42	25	22	14	15	18	17	360	
RIVER EDGE	2	2	4	9	3	11	1	0	1	1	2	36	
ROCHELLE PARK	3	83	35	4	10	1	2	0	2	0	57	197	
SADDLE BROOK	13	28	71	199	16	165	4	2	8	2	5	513	9
TEANECK	279	8	20	87	17	16	20	17	6	6	11	487	10
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012		
SOUTHEAST BERGEN	619	276	791	434	467	548	179	145	173	971	1,307	5,910	
CLIFFSIDE PARK	47	52	83	65	118	310	36	34	17	286	308	1,356	2
EDGEWATER	<u>296</u>	8	193	28	56	77	9	44	48	<u>538</u>	66	1,363	1
FAIRVIEW	22	42	30	56	32	29	14	25	8	62	9	329	
FORT LEE	117	39	43	37	54	35	40	17	48	25	<u>820</u>	1,275	4
LEONIA	11	2	2	0	3	2	33	1	0	1	1	56	
PALISADES PARK	117	106	<u>331</u>	233	<u>187</u>	78	36	18	47	59	101	1,313	3
RIDGEFIELD	9	25	28	14	13	12	10	6	5	0	2	124	
RIDGEFIELD PARK	0	2	81	1	4	5	1	0	0	0	0	94	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012		

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SOUTHWEST BERGEN	101	215	377	113	127	689	168	36	287	223	345	2,681	
CARLSTADT	15	8	6	22	21	14	4	0	0	3	0	93	
BUILDING PERMITS	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012		RANK
EAST RUTHERFORD	4	<u>134</u>	115	15	1	<u>624</u>	27	0	2	0	317	1,239	5
HASBROUCK HEIGHTS	24	11	15	17	15	12	21	1	6	3	7	132	
LITTLE FERRY	8	2	4	4	2	5	6	3	3	0	1	38	
LYNDHURST	8	24	189	2	7	3	0	0	0	201	5	439	
MOONACHIE	4	2	6	5	2	2	0	0	0	1	1	23	
NORTH ARLINGTON	13	10	13	5	0	2	<u>69</u>	6	0	0	0	118	
RUTHERFORD	12	9	7	19	18	5	6	13	2	5	3	99	
SOUTH HACKENSACK	1	3	7	0	2	1	26	0	1	4	1	46	
TETERBORO	0	0	0	0	0	0	0	0	0	0	0	0	
WALLINGTON	9	6	6	19	45	13	2	6	5	4	8	123	
WOOD-RIDGE	3	6	9	5	14	8	7	7	<u>268</u>	2	2	331	
GRAND TOTALS	1,893	1,291	2,334	2,765	1,689	2,745	850	542	879	1,902	2,054	18,944	
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012		
NORTHWEST BERGEN	221	219	234	290	283	174	149	91	92	96	73	1,922	
PASCACK VALLEY	151	71	99	117	183	186	54	30	104	65	69	1,129	
NORTHERN VALLEY	296	259	414	1,175	275	779	121	108	104	82	90	3,703	2
CENTRAL BERGEN	505	251	419	636	354	369	179	132	120	465	170	3,600	3
SOUTHEAST BERGEN	619	276	791	434	467	548	179	145	173	971	1,307	5,910	1
SOUTHWEST BERGEN	101	215	377	113	127	689	168	36	287	223	345	2,681	

Figure 3.7: Bergen County Building Permits, 2002-2012



3.4 Hazard Identification

Table 3.3 is a list of potential natural hazards and the likelihood that an event may occur in Bergen County, taken from the State of New Jersey 2014 Hazard Mitigation Plan, historical and recent hazard event data, and communication with local and regional experts.⁷

Table 3.3: Bergen County Hazards of Concern

Hazard Type	Identified Hazard of Concern?
Coastal Erosion (including enhanced discussion of beach protection) and Sea-Level Rise	Yes
Dam and Levee Failure	Yes
Drought	Yes
Earthquake	Yes
Flood (riverine, coastal, storm surge, tsunami, and stormwater flooding caused by local drainage and high groundwater levels)	Yes
Geological Hazards (landslide and subsidence/ sinkholes)	Yes
Hurricane and Tropical Storms	Yes
Nor'easter	Yes
Severe Weather (high winds, tornadoes, thunderstorms, hail, and extreme temperature)	Yes
Winter Storms (snow, blizzards, and ice storms)	Yes
Wildfire	Yes

It should be noted that that the Planning Team only considered natural hazards for this Plan update.

In assessing risk associated with potential natural hazard occurrences, it is important to determine the probability and frequency of, and severity/vulnerability to the hazard. By doing so, the Plan is able to target and concentrate on hazards that are more likely to occur, cause the most harm, require the most attention, and/or are most easily or cost-effectively mitigated.

The *probability* of future events is the chance or likelihood that a hazard will occur in any given year. For instance, a flood event that has at least a 1 in 100 (or 1%) chance of occurring in any given year is known as a 100-year flood event, and the area that could potentially be flooded by such an event is known as the 100-year floodplain. The expected average *frequency* of such a flood would be once every 100 years.

The *severity* or *vulnerability* with regard to a specific hazard is the estimate of potential damage or impact that a particular hazard event may have on a designated community.

Table 3.4 shows New Jersey emergency and disaster declarations from 1955-2012. Bergen County has experienced 15 disaster declarations since 1996.

Table 3.4: FEMA Major Disaster Declarations-New Jersey, 1955-2012

FEMA Disaster No.	Disaster Date	Type of Disaster	BC
DR41	August 1955	Hurricane, floods	NA
DR124	March 1962	Severe storms, high tides, flooding	NA
DR205	August 1965	Water shortage	NA
DR245	June 1968	Heavy rains, flooding	NA
DR310	September 1971	Heavy rains, flooding	NA
DR402	August 1973	Severe storms, flooding	NA
EM3005	November 1974	Severe storms, high winds, high tides	NA
DR477	July 1975	Heavy rains, high winds, hail, tornadoes	NA
DR519	August 1976	Severe storms, high winds, flooding	NA
DR528	February 1977	Ice conditions	NA
EM3083	October 1980	Water shortage	NA
DR701	April 1984	Coastal storms, flooding	NA
DR749	October 1985	Hurricane Gloria	NA
DR936	March 1992	Coastal storm	
DR973	December 1992	Coastal storm	
EM3106	March 1993	Severe blizzard	
DR1088	January 1996	Snow, blizzard	Y
DR1145	November 1996	Flooding	Y
DR1189	September 1997	Severe storms, flooding	
DR1206	March 1998	Coastal storm	
DR1295	September 1999	Hurricane Floyd	
EM3147	September 1999	Hurricane Floyd	Y
EM3148	September 1999	Hurricane Floyd	Y
DR1337	August 2000	Flooding	
EM3156	November 2000	Virus threat	Y
EM3169	September 2001	Terrorist attack emergency declaration	
FM2411	June 2002	Double trouble fire	
EM3181	March 2003	Snowstorm	Y
EM3188	September 2003	Power outage	Y
DR1530	July 2004	Severe storm, flooding	
DR1563	October 2004	Tropical Depression Ivan	
DR1588	April 19, 2005	Severe storms and flooding	Y
EM3257	September 2005	Hurricane Katrina evacuation	Y
DR1653	July 7, 2006	Severe Storms And Flooding	
DR1694	April 26, 2007	Severe Storms/Coastal And Inland Flooding	Y

FEMA Disaster No.	Disaster Date	Type of Disaster	BC
DR1867	December 22, 2009	Tropical Storm Ida and Nor'easter	
DR1873	February 5, 2010	Severe Winter Storm And Snowstorm	
DR1889	March 23, 2010	Severe Winter Storm And Snowstorm	
DR1897	April 2, 2010	Severe Storms And Flooding	Y
DR1954	February 4, 2011	Severe Winter Storm and Snowstorm	Y
DR4021	August 31, 2011	Hurricane Irene	Y
DR4033	September 15, 2011	Severe Storms and Flooding	
DR4039	October 14, 2011	Remnants of Tropical Storm Lee	
DR4048	November 30, 2011	Severe Storm	Y
DR4070	July 19, 2012	Severe Storms and Straight-Line Winds	
DR4086	October 30, 2012	Hurricane Sandy	Y

3.5 Hazards Eliminated

Based on the combination of geographic location, climate, and geology, the Plan will not address avalanches, tsunamis, volcanoes, subsidence, hailstorms, or expansive soils. The likelihood of such events being a critical threat to Bergen County or any of the constituent municipalities reflected in the Plan is negligible.

Avalanche

An avalanche is the flow of snow down a slope. Avalanches typically do not occur on slopes flatter than 25 degrees or steeper than 60 degrees. Snow does not accumulate well on steep slopes and does not flow well on flat slopes. Bergen County does not have mountainsides that are vulnerable to avalanches, nor do snowfall accumulations reach amounts large enough for avalanches to be considered a hazard. There have been no incidences of avalanches in the past.

Tsunami

A tsunami is a series of large waves created by an underwater disturbance such as an earthquake, landslide, volcanic eruption, or meteorite. Tsunamis generally affect the coastlines and thus were eliminated as a hazard in Bergen County.

Volcano

A volcano is a mountain that opens downward to a reservoir of molten rock below the surface of the earth. The danger zone around a volcano typically covers a 20-mile radius. Active volcanoes in the United States are found mainly in Hawaii, Alaska, and the Pacific Northwest. Volcanoes were eliminated as a possible hazard in Bergen County.

Subsidence

Subsidence is the motion of a surface (usually, the Earth's surface) as it shifts downward relative to a datum such as sea-level. Subsidence frequently occurs in karst terrains, where dissolution of limestone by fluid flow in the subsurface causes the creation of voids (i.e. caves). If the roof of these voids becomes too weak, it can collapse and the overlying rock and earth will fall into the space, causing subsidence at the surface. This type of subsidence can result in sinkholes, which can be hundreds of meters deep.

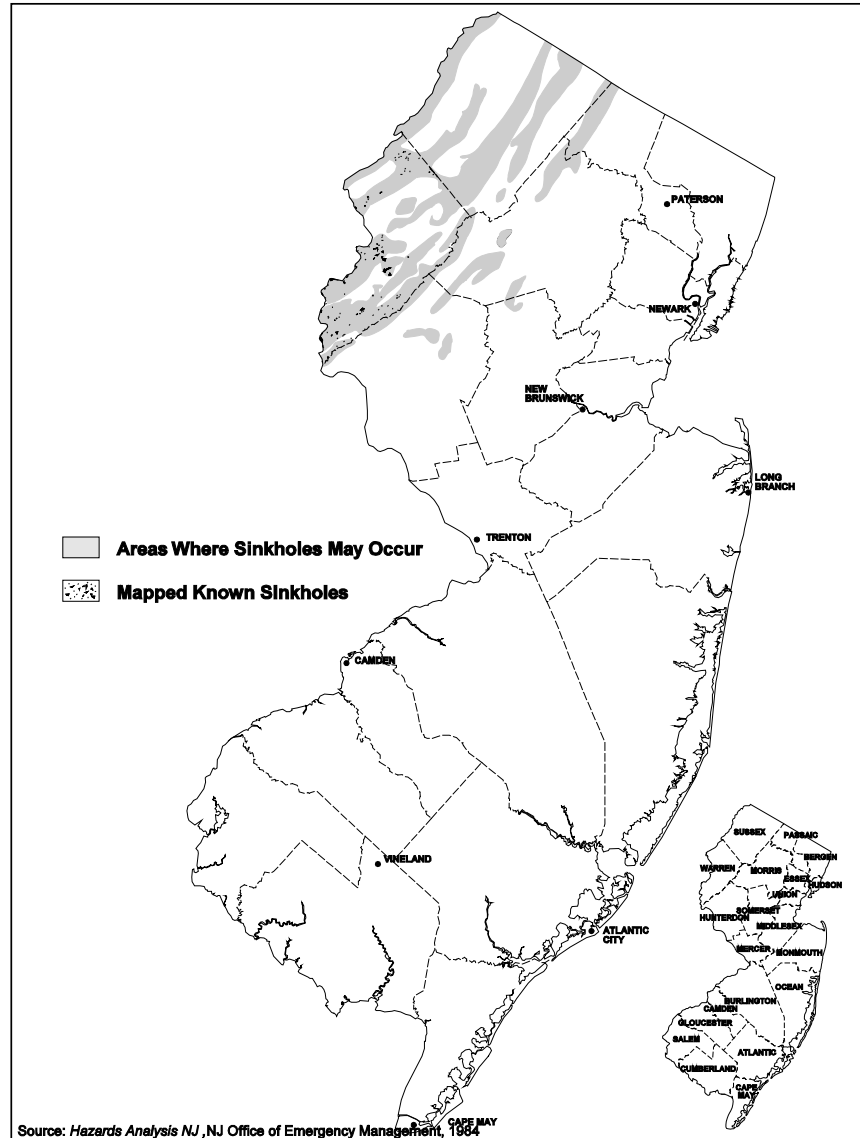


Figure 3.8: Areas Prone to Natural Sinkhole Development

The New Jersey Geological Survey has identified municipalities in New Jersey that have significant limestone deposits which may contribute to subsidence hazards. None are located in Bergen County. As Figure 3.8 indicates, Bergen County has no significant limestone deposits, and thus no areas that are prone to natural sinkholes. The probability of subsidence occurring is low and further assessment of this hazard is not needed.⁸

Hailstorm

Hail is a form of precipitation which consists of balls or irregular lumps of ice (hailstones). Hailstones on Earth consist mainly of water ice and measure between 5 and 50 millimeters in diameter, with the larger stones coming from severe thunderstorms. Hail forms in strong thunderstorm clouds, particularly those with intense updrafts, high liquid water content, great vertical extent, large water droplets, and where a good portion of the cloud layer is below freezing. In the summer months in New Jersey, thunderstorms are very common. However, the possibility of hail is relatively low because the cloud layers are usually not below freezing and the precipitation usually falls as rain. A total of 21 hailstorms have been recorded in Bergen County dating back to May of 1986, as detailed in Table 3.5.⁹

The last recorded hailstorm was in July 2012 with the largest hail measuring 1" in diameter. Of the 40 recorded hailstorms, none have caused significant property damage, injury or death. The largest diameter hailstone recorded was 1.75" in diameter, which would not result in significant damage.

While hailstorms may occur in Bergen County, the probability of hailstorms posing a significant hazard is very low. In general, hailstones do not reach a large enough size to cause a considerable damage or injury. Hailstorms thus were eliminated as a potential hazard in Bergen County.

Table 3.5: Bergen County Historical Hail Events

	Location or County	Date	Time	Type	Magnitude
1	BERGEN	5/31/1986	14:30	Hail	0.75 in.
2	BERGEN	9/22/1987	14:54	Hail	1.00 in.
3	Paramus	5/6/1997	12:30 PM	Hail	0.88 in.
4	Hackensack	5/8/1999	4:45 PM	Hail	0.75 in.
5	Lyndhurst	4/9/2001	7:01 PM	Hail	0.88 in.
6	Lodi	5/29/2001	2:05 PM	Hail	0.75 in.
7	Lyndhurst	8/14/2001	6:50 PM	Tstm/Wind/hail	0 knots
8	Maywood	8/28/2001	5:00 PM	Tstm/Wind/hail	0 knots
9	Saddle Brook	4/19/2002	4:40 PM	Hail	1.00 in.
10	Garfield	5/31/2002	6:10 PM	Hail	1.00 in.
11	Ramsey	5/31/2002	6:48 PM	Hail	0.75 in.
12	Garfield	6/19/2002	3:31 PM	Hail	1.00 in.
13	Teterboro	6/26/2002	4:20 PM	Hail	1.00 in.
14	Oakland	5/12/2004	2:21 PM	Hail	0.88 in.
15	Lyndhurst	5/12/2004	3:05 PM	Hail	0.75 in.
16	Ramsey	6/1/2004	4:00 PM	Hail	1.00 in.
17	Allendale	6/1/2004	4:03 PM	Hail	1.75 in.
18	Saddle River	6/1/2004	4:15 PM	Hail	1.75 in.
19	Central Portion	6/1/2004	5:25 PM	Hail	0.75 in.
20	Ft Lee	8/11/2004	1:35 PM	Hail	1.00 in.
21	Rutherford	6/22/2005	2:30 PM	Hail	0.75 in.
22	Saddle Brook	6/16/2007	14:38	Hail	0.88 in.

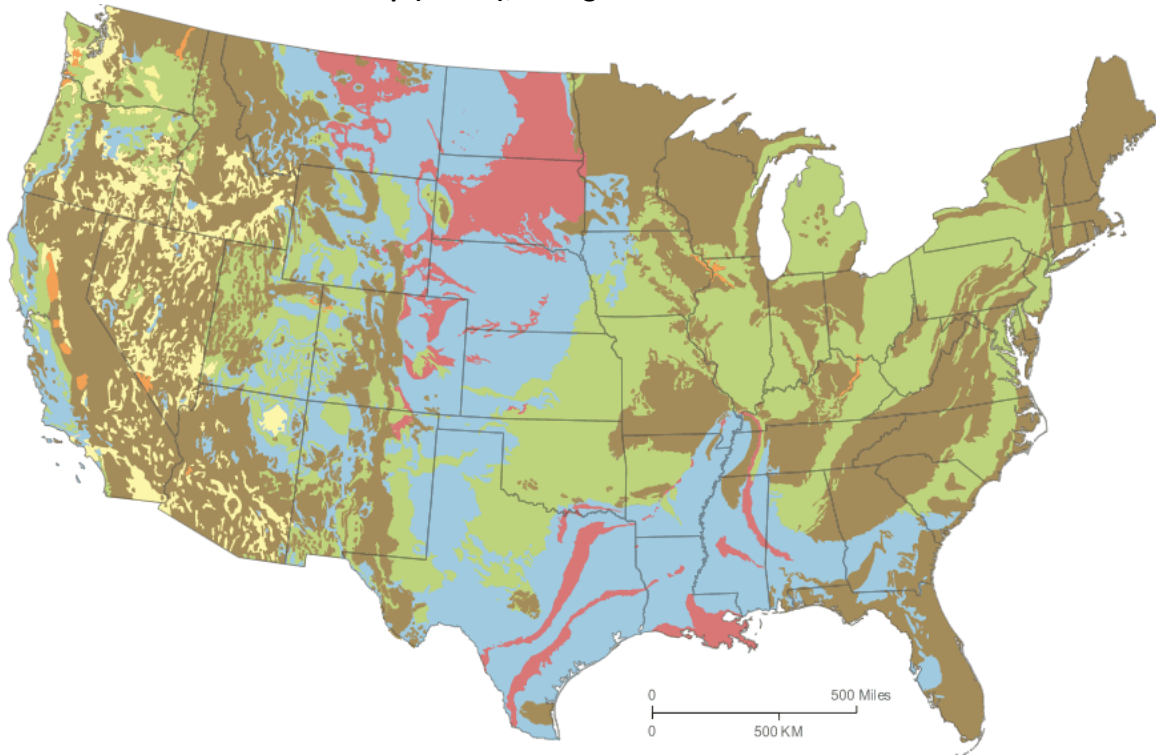
	Location or County	Date	Time	Type	Magnitude
23	Waldwick	6/16/2008	17:25	Hail	0.75 in.
24	Ft Lee	8/11/2008	9:30	Hail	0.75 in.
25	Wortendyke	8/15/2008	15:51	Hail	0.88 in.
26	Oakland	3/29/2009	18:45	Hail	0.75 in.
27	Ridgewood	4/21/2009	21:51	Hail	0.75 in.
28	Westwood	6/15/2009	14:29	Hail	0.75 in.
29	Westwood	6/15/2009	14:29	Hail	0.75 in.
30	Hillsdale Manor	7/7/2009	22:14	Hail	0.75 in.
31	Oakland	7/17/2009	20:53	Hail	1.00 in.
32	Hillsdale Manor	7/24/2009	21:15	Hail	0.75 in.
33	Woodcliff Lake	12/9/2009	16:50	Hail	0.75 in.
34	North Arlington	10/11/2010	19:24	Hail	1.00 in.
35	Harrington Park	6/9/2011	17:00	Hail	1.25 in.
36	Norwood	6/9/2011	17:07	Hail	1.75 in.
37	Oradell	8/19/2011	18:00	Hail	1.75 in.
38	Englewood Cliffs	9/29/2011	11:55	Hail	0.88 in.
39	Bergenfield	9/29/2011	12:00	Hail	0.75 in.
40	Oakland	7/1/2012	15:37	Hail	1.00 in.
41	Fort Lee	8/28/2013	11:48	Hail	0.88 in.

Expansive Soils

According to the USGS, expansive soils are those that shrink or swell as the moisture content decreases or increases.¹⁰ Expansive clay particles are invisible to the naked eye and swell by absorbing large amounts of water relative to their volume. When these particles dry out, they can shrink considerably. When winter rains fall on the dry, cracked ground, the clays swell; the cracks close; and the ground can heave up as much as several inches. Expansive soils pose a threat when built upon. A house built on expansive soil will likely move if the foundation has not been designed to take the soil type into account. Movement occurs because the soils expand so forcefully, the foundation actually shifts. Different parts of the house can move at different rates and distances, thus cracking the foundation. During extreme drought conditions, even homes that are not normally affected by expansive soil problems may experience slight cracking.

According to Figure 3.9, most of the soil in New Jersey has less than a 50% chance of consisting of clay with a slight to moderate swelling potential.¹¹ Figure 3.9 was taken from the USGS and is dated 1989. There have been no recordable incidents in the past where expansive soils have caused significant damage in Bergen County. As such, expansive soils will not be addressed in the Plan.

Figure 3.9: "Swelling Clays Map of the Conterminous United States" and the New Jersey portion of the map (below), enlarged to show detail



Map Legend

- Unit contains abundant clay having high swelling potential
- Part of unit (generally less than 50%) consists of clay having high swelling potential
- Unit contains abundant clay having slight to moderate swelling potential
- Part of unit (generally less than 50%) consists of clay having slight to moderate swelling potential
- Unit contains little or no swelling clay
- Data insufficient to indicate clay content of unit and/or swelling potential of clay (Shown in westernmost states only)

3.6 Profiling Hazards and Assessing Vulnerability

Coastal Erosion

Coastal erosion is the wearing away of land or the removal of beach or dune sediments by wave action, tidal currents, or wave currents. A number of factors determine whether a community experiences and/or is vulnerable to increased long-term coastal erosion:

- Exposure to high-energy storm waves;
- Sediment size and composition of eroding coastal landforms feeding adjacent beaches;
- Near-shore bathymetric variations which direct wave approach;
- Alongshore variations in wave energy and sediment transport rates;
- Relative sea level rise;
- Frequency and severity of storm events; and
- Human interference with sediment supply (e.g. revetments, seawalls, jetties).¹²

Bergen County, per FEMA's Flood Insurance Rate Maps, did not previously have any Zone V hazard areas. As such, the area had not been designated as having "coastal flood zones with wave action" and coastal erosion, though not impossible, was deemed unlikely in the area.

According to the 2011 Coastal Construction Manual, FEMA P-55, Zone V (including Zones VE, V1-30, and V) identifies the Coastal High Hazard Area. This is the portion of the special flood hazard area (SFHA) that extends from offshore to the inland limit of a primary frontal dune along an open coast and any other portion of the SFHA that is subject to high-velocity wave action from storms or seismic sources. The boundary of Zone V is generally based on wave heights (3 feet or greater) or wave run-up depths (3 feet or greater). Zone V can also be mapped based on the wave overtopping rate (when waves run up and over a dune or barrier).

Wave oscillations are attenuated by the funneling of ocean water through several restrictions and bays, including Upper New York Bay, Kill Van Kull, and Newark Bay. Only six counties in the State of New Jersey had previously been designated Zone V or Zone E hazard areas (Ocean, Cape May, Atlantic, Monmouth, Middlesex and Hudson). FEMA's Preliminary FIRMS were released in 2014, after Bergen County and its municipalities had completed the risk assessment process. The Preliminary FIRMS now show V zones in Bergen County in the municipalities of Edgewater, Fort Lee, Englewood Cliffs, Alpine and Tenafly. As this is a new hazard of concern for Bergen County, it will be more fully examined through Plan maintenance and in the next Plan update.

Climate Change, Sea Level Rise, and Coastal Erosion

Please note that climate change, sea level rise, and their impact on hazards impacting Bergen County will be examined in greater detail through the Plan maintenance process and in the next Plan update.

Climate change refers to a change in the state of the climate that can be identified (e.g. using statistical tests) by changes in the mean and/or the variability of its properties. These changes persist for an extended period, typically decades or longer.¹³ Properties of interest typically include temperature, precipitation patterns, and wind patterns. Climate change can alter the frequency and intensity of hazards such as wildfire, extreme temperature, drought, or flooding. The climate change impact of primary

concern for Bergen County going forward is the effect of sea level rise on coastal flooding. As climate science evolves, additional climate change effects on hazards of concern such as drought, extreme temperature, and hurricanes/tropical storms may be evaluated.

Sea level rise is described in terms of relative sea level change, defined as the height of the sea with respect to a specific point on land.¹⁴ It is caused by the combination of eustatic and isostatic sea level effects. Eustatic effects are alterations in global sea level due to changes in the volume of water in ocean basins through processes such as thermal expansion, glacial melt, etc., or net changes in the size of ocean basins. Isostatic sea level effects refer to local changes in vertical land movement. Extreme weather events will continue to be the primary driver of increasing water levels. However, a consensus has not yet been reached on how the frequency and magnitude of storms may change in coastal regions of the United States, including New Jersey.

Bergen County supports efforts to ensure that all critical facilities are more resilient in the face of future severe weather events and better able to withstand potential future sea-level rise and other hazards. The NJ Department of Environmental Protection (DEP) and other State agencies will continue to employ a science-based risk analysis to analyze forward-looking risks to inform the hazard mitigation process. Where appropriate, additional information will be incorporated through the plan maintenance process described in Section 5.

Dam Failure

Dam failure is being added to this Plan Update as a new hazard of concern for Bergen County. While there are few dams in Bergen County, dam failure has been cited as a hazard to be mitigated in Bergen County's mitigation strategy, and thus has been added to this Plan Update. A dam is an artificial barrier with the ability to store water, wastewater, or liquid-borne materials for various reasons, including flood control, human or livestock water supply, irrigation, energy generation, containment of mine tailings, recreation, or pollution control.¹⁵ Dam failures typically occur when spillway capacity is inadequate and excess water flow overtops the dam, or when internal erosion through the dam or foundation occurs. Complete failure occurs if internal erosion or overtopping results in a complete structural breach, releasing a high-velocity wall of debris-filled waters that rush downstream damaging and/or destroying anything in its path (FEMA 1996).

The National Dam Safety Program is a partnership of the states, federal agencies, and other stakeholders that encourages individual and community responsibility for dam safety. Under FEMA's leadership, state assistance funds have allowed all participating states, including New Jersey, to improve their programs through increased inspections, emergency action planning, and the purchase of needed equipment.

The NJDEP Dam Safety Section under the Bureau of Dam Safety and Flood Control has responsibility for overseeing dam safety in the State. The primary goal of the program is to ensure the safety and integrity of dams in New Jersey and, thereby, protect people and property from the consequences of dam failures. The Section also coordinates with the Division of State Police, local and county emergency management officials in the preparations and approval of Emergency Action Plans.

The United States Army Corps of Engineers (USACE) is responsible for safety inspections of some federal and non-federal dams in the United States that meet the size and storage limitations specified in the National Dam Safety Act. USACE has inventoried dams and has surveyed each state and federal agency's

capabilities, practices, and regulations regarding design, construction, operation, and maintenance of the dams. USACE has also developed guidelines for inspection and evaluation of dam safety (USACE 1997).

The Federal Energy Regulatory Commission (FERC) has the largest dam safety program in the United States. FERC cooperates with a large number of federal and state agencies to ensure and promote dam safety and, more recently, homeland security, on dams associated with hydropower. There are 3,036 dams that are part of regulated hydroelectric projects and are included in the FERC program.

According to the National Inventory of Dams (NID), there are 87,359 dams in the United States. Of these dams, 3,808 are owned by federal agencies; 6,435 are owned by state agencies; 15,938 are owned by local agencies; 1,686 are owned by public utilities; and 56,541 are owned by private individuals or entities. According to the USACE, the ownership of 2,951 dams is undetermined.

According to NID, there are 825 dams in New Jersey. Of these dams, 28 are owned by federal agencies; 124 are owned by state agencies; 278 are owned by local agencies; 8 are owned by public utilities; and 387 are owned by private individuals or entities. The NJDEP's list contains 1,946 dams in New Jersey.

The extent or magnitude of a dam failure event can be measured in terms of the classification of the dam. FEMA has three classification levels of dams: low, significant, and high. The classification levels build on each other. The hazard potential classification system should be utilized with the understanding that the failure of any dam or water-retaining structure could represent a danger to downstream life and property (FEMA 2004).

- Low hazard potential dams are those where failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.
- Significant hazard potential dams are those where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominately rural or agricultural areas.
- High hazard potential dams are those where failure or misoperation will likely cause loss of human life.

USACE developed the classification system shown in Table 3.6 for the hazard potential of dam failures. USACE hazard rating systems is based only on the potential consequences of a dam failure; it does not take into account the probability of such failures.

Table 3.6: United States Army Corps of Engineers Hazard Potential Classification

Hazard Category ^a	Direct Loss of Life ^b	Lifeline Losses ^c	Property Losses ^d	Environmental Losses ^e
Low	None (rural location, no permanent structures for human habitation)	No disruption of services (cosmetic or rapidly repairable damage)	Private agricultural lands, equipment, and isolated buildings	Minimal incremental damage
Significant	Rural location, only transient of day-use facilities	Disruption of essential facilities and access	Major public and private facilities	Major mitigation required
High	Certain extensive residential, commercial or industrial development	Disruption of essential facilities and services	Extensive public and private facilities	Extensive mitigation cost or impossible to mitigate

a. Categories are assigned to overall projects, not individual structures at a project.
b. Loss-of-life potential is based on inundation mapping of area downstream of the project. Analyses of loss-of-life potential should take into account the population at risk, time of flood wave travel, and warning time.
c. Lifeline losses include indirect threats to life caused by the interruption of lifeline services from project failure or operational disruption; for example, loss of critical medical facilities or access to them.
d. Property losses include damage to project facilities and downstream property and indirect impact from loss of project services, such as impact from loss of a dam and navigation pool, or impact from loss of water or power supply.
e. Environmental impact downstream caused by the incremental flood wave produced by the project failure, beyond what would normally be expected for the magnitude flood event under which the failure occurs.

Source: United State Army Corps of Engineers, 1995

According to the NJDEP, there are four hazard classifications of dams in New Jersey. The classifications relate to the potential for property damage and/or loss of life in the event of a dam failure:

- Class I (High-Hazard Potential) - Failure of the dam may result in probable loss of life and/or extensive property damage.
- Class II (Significant-Hazard Potential) - Failure of the dam may result in significant property damage; however, loss of life is not envisioned.
- Class III (Low-Hazard Potential) - Failure of the dam is not expected to result in loss of life and/or significant property damage.
- Class IV (Small-Dam Low-Hazard Potential) - Failure of the dam is not expected to result in loss of life or significant property damage.

Table 3.7 summarizes the number of dams and their hazard classifications, by County.

Table 3.7: Number of Dams by County in New Jersey

County	High Hazard	Significant Hazard	Low Hazard	Other	Total
Atlantic	1	7	28	12	48
Bergen	7	9	54	8	78
Burlington	10	37	95	24	166
Camden	1	20	51	7	79
Cape May	0	7	4	4	15
Cumberland	4	14	10	10	38
Essex	8	3	14	8	33
Gloucester	3	23	32	11	69
Hudson	1	0	0	2	3
Hunterdon	9	10	69	16	104
Mercer	8	9	72	7	96
Middlesex	4	11	21	11	47
Monmouth	9	13	88	12	122
Morris	35	47	138	29	249
Ocean	8	14	70	7	99
Passaic	49	21	64	21	155
Salem	1	20	19	9	49
Somerset	5	13	67	15	100
Sussex	37	42	159	25	263
Union	3	7	13	8	31
Warren	15	7	62	18	102
Totals	218	334	1130	264	1946

Source: NJDEP 2013

Bergen County has relatively few dams compared with other counties in New Jersey, and thus has not been as severely impacted by dam failure as other dams across the state. According to the State of New Jersey 2014 Hazard Mitigation Plan, only one Bergen County dam has been affected by the major storms listed in the State Plan. In 1999, Hurricane Floyd caused notable damage to the Whites Pond Dam in Waldwick.

Dam failures are rare and normally coincide with events that cause them such as earthquakes, landslides, and excessive rainfall and snowmelt. Dam failures in New Jersey are often caused by heavy rains or other precipitation. The probability of dam failure in Bergen County is low.

Coastal Flooding

Coastal flooding is typically a result of storm surges, wind-driven waves, and/ or heavy rainfall. These conditions are produced by hurricanes during the summer and fall, and nor'easters and other large coastal storms during the winter and spring. Storm surges may overrun barrier islands and push sea water up coastal rivers and inlets, blocking the downstream flow of inland runoff. Thousands of acres of crops and forest lands may be inundated by both saltwater and freshwater. Escape routes, particularly from barrier islands, may be cut off quickly, stranding residents in flooded areas and hampering rescue efforts.

According to the August 29, 2014 FEMA Flood Insurance Study (FIS) for Bergen County, New Jersey, which supersedes the September 8, 2005 FIS, principal flooding in southern Bergen County results from tidal stages of the Newark Bay, which affect the Hackensack River, and in turn, Bellman's Creek and Wolf

Creek. The tidal influence is negated on Wolf Creek by a tidal barrier located approximately 1,000 feet upstream of the confluence of Wolf Creek and Bellman's Creek.¹⁶

Specifically, the FIS notes that the Hackensack Meadowlands District is impacted yearly by nor'easter storm events. Additionally, nor'easters and hurricanes have produced the largest stream elevations, and not rainfall events. The maximum historical tide was produced by a hurricane on September 3, 1821. The surge was approximately 10 to 11 feet above normal tide.

Hurricane Irene

Hurricane Irene came ashore in Little Egg Inlet in Southern New Jersey on August 28, 2011. Mandatory evacuations were ordered throughout the State of New Jersey. Wind speeds were recorded at 75 mph and rainfall totals reached over 10 inches in many parts of the state. Extensive flooding throughout Bergen County caused damage to homes, businesses, and public infrastructure. The flooding was exacerbated by high water levels in reservoirs and wetlands as a result of previous heavy rains. Over 1 million customers lost power during the storm. Overall damage estimates for the State of New Jersey came to over \$1 billion, with over 200,000 homes and buildings being damaged. The county received more than \$48 million in federal loans and grants to cover the storm damages.

Hurricane Sandy

Hurricane Sandy came ashore as an immense tropical storm in Brigantine, New Jersey, on October 29, 2012. Although rainfall was limited to less than 2 inches within Bergen County, wind gusts were recorded up to 76 mph. A full moon made the high tides 20 percent higher than normal and amplified the storm surge. Sandy wreaked havoc on Bergen County with surges that registered approximately 4-5 feet above average high tide (NAVD88). Figure 3.10 shows water elevation levels and storm surge depths as recorded by the Meadowlands Environmental Research Institute sensor at the Barge Club Marina monitoring station in the Hackensack River in Carlstadt, New Jersey. Approximately 346,000 homes in New Jersey were damaged, of which 22,000 were uninhabitable and nearly 19,000 businesses sustained damage of \$250,000 or more.¹⁷ The New Jersey shore suffered the most damage. Seaside communities were damaged and destroyed up and down the coastline. Although protected from severe waves, the Bergen County shoreline within New York-New Jersey Harbor experienced record storm surge elevations. Some 2.7 million households within New Jersey lost power. Hurricane Sandy was estimated to cost the State of New Jersey over \$36 billion.

In Bergen County, Little Ferry and Moonachie experienced significant flooding due to the tidal surge which overtopped various berms and the edge of the Hackensack River. The massive volume of water was pushed inland from Newark Bay to the Hackensack River. The height of the berms, which were constructed by the Bergen County Mosquito Commission to control standing water, allowed water to flow into Little Ferry and surrounding municipalities, and also prevented the water from receding. Little Ferry's Main Street Pump Station did not have a generator, which prevented any water from being pumped out and prolonged the "bathtub effect."¹⁸

Hurricane Sandy highlighted the deficiencies facing many Bergen municipalities regarding disaster preparedness and the ability to recover from such a natural disaster. Issues with lack of jurisdiction to control floodwaters; lack of flood capacity in such a highly developed county; a wide range of infrastructure issues including those related to deficiencies with ditches, grates, pumps, outfalls, and sewer systems; critical facilities located in hazard areas; lack of early warning systems in many areas; dependence upon electricity (and the lack of backup power for critical facilities); and the existing natural

gas infrastructure. Issues such as these led to a very difficult recovery for many Bergen towns in the days after Sandy.

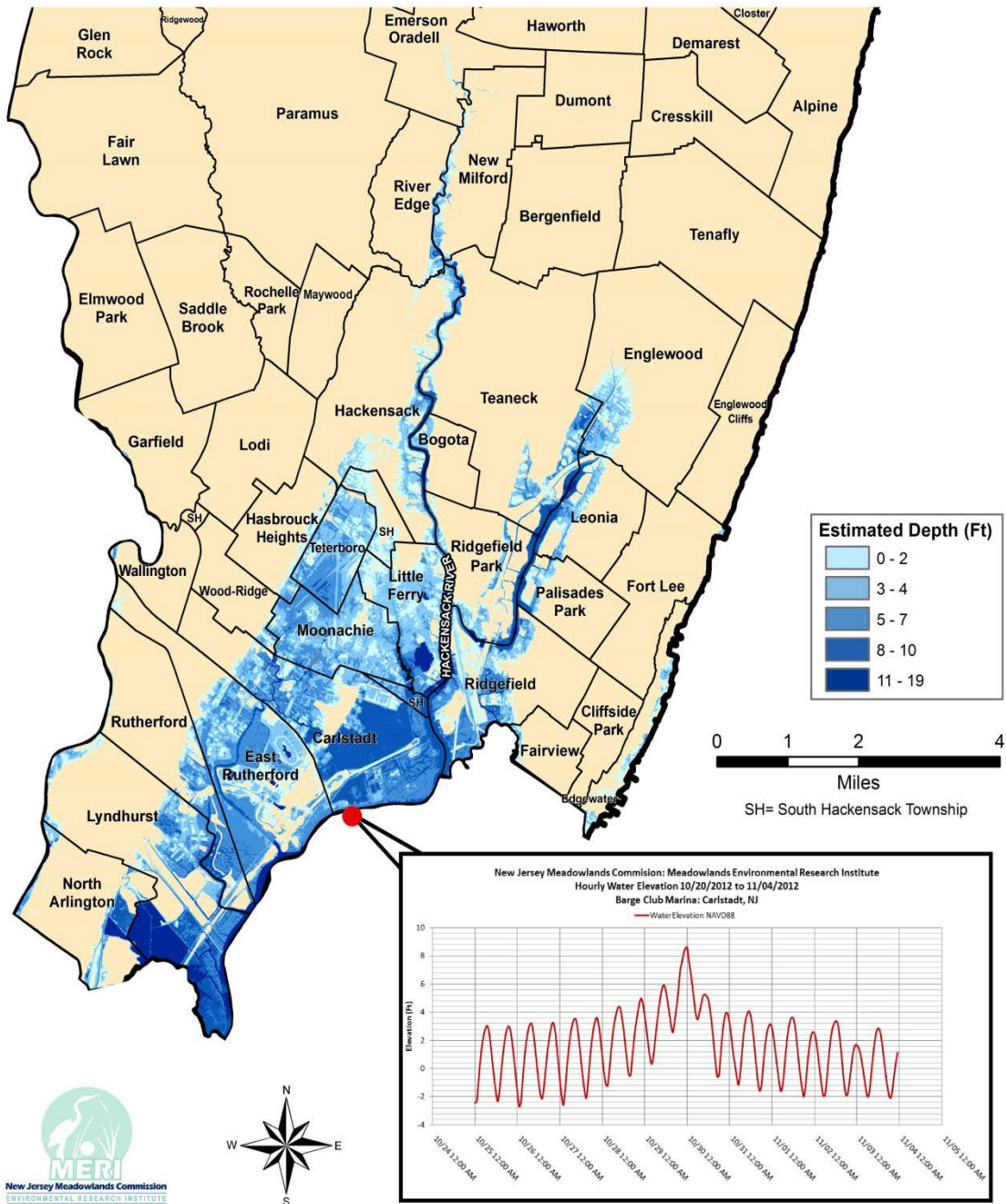
The Bergen FIS differentiates between coastal flooding and riverine flooding (see below). Coastal flooding, due to hurricanes and nor'easters, is isolated according to the report and related Flood Insurance Rate Maps (FIRMs) to the following locations:

Hackensack River

- Village of Ridgefield Park (Portions of Major Flooding Due to Coastal Surges)
- Borough of Bogota (All Due to Coastal Surges)
- Borough of North Arlington (Portions)
- Township of Lyndhurst (Portions)
- Borough of Little Ferry (All)
- Borough of Teterboro (All)
- Borough of Rutherford (Portions)
- Borough of East Rutherford (Portions)
- Borough of Moonachie (All)
- Borough of Carlstadt (All)
- City of Hackensack (Portions)
- Township of Teaneck (Portions)
- Township of South Hackensack (All)
- Borough of Hasbrouck Heights (All)

Hudson River

- Borough of Edgewater (All)
- Borough of Fort Lee (All)
- Borough of Englewood Cliffs (All)
- Borough of Tenafly (Portions)
- Borough of Alpine (All)



This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.

Figure 3.10: MERI Water Elevation Levels & USGS/FEMA Estimates Sandy Storm Surge Depth Superstorm Sandy 2012

As shown above, the extent of coastal flooding (with the exception of the Borough of Edgewater) from a surge in the Hudson River is extremely limited due to the steep topography along the New Jersey banks.

Many critical facilities throughout Bergen County are vulnerable to flooding. Tables 3.8 and 3.9 list those facilities that are vulnerable to flooding or storm surge and/or have experienced damage from flood or storm surge in the past.

Figure 3.11 shows the locations of coastal and riverine floodplains in Bergen County, as well as the boundary between the coastal and fluvial flood zones¹⁹. The magnitude of the coastal flooding and riverine flooding in Bergen County municipalities are further highlighted in Table 3.10 below. Data for this figure and table was compiled from two sources. The 2014 Preliminary Flood Insurance Rate Maps (FIRMs) were obtained from FEMA. Municipal boundaries and the hydrography stream network were obtained from NJDEP. Appendix C contains individual maps of each Bergen County municipality, showing critical facility location and the 100-year flood zone. Please note that the terms “Flood zone” and “Special Flood Hazard Area” are used interchangeably in this Plan Update.

Figure 3.12 shows the 100 and 500-year flood zones according to the 2014 Preliminary FIRMs. Figure 3.13 shows the changes in Special Flood Hazard Area boundaries with the new 2014 Preliminary FIRMs. The previous FIRMs were dated 2005.

For coastal flooding, the flood hazard area boundaries represent the extent of inundation caused by a coastal surge with a 1% and 0.2% annual probability of occurrence (also known as the 100-year and 500-year events, respectively) and critical facilities provided by the municipalities have been added to the maps. The elevations used to develop these extents are based on the findings of the above FIS. In the past, FEMA's Flood Insurance Rate Maps (FIRMs) were updated every 10-15 years in the New York metropolitan area. The new digital format (DFIRM) allows for more accurate floodplain determinations, and the capability to update the maps more frequently. FEMA states in the FIS that the flooding in the study area is predominantly tidal and that elevations resulting from a given tide are not sensitive to fluvial flows with the exception of Teterboro airport, an area flooded by Moonachie Creek.²⁰

Since the creation of New Jersey's Coastal Management (CZM) Program in 1980, the NJDEP has regulated development and other related activities in coastal areas in order to reduce the probability of impact from coastal erosion and flooding, as well as to protect the sensitive coastal environment from human disturbance. These areas include:

- Lands regulated under the Coastal Area Facility Review Act (CAFRA);
- State tidal waters from mean high water (MHW) to the 3-mile limit;
- New Jersey Meadowlands District;
- Tidal wetlands; and
- Properties located between the MHW line landward to the first public roadway, if between 100 and 500 feet of the MHW line.

As noted earlier in the Plan, parts of ten Bergen County municipalities are located within the New Jersey Meadowlands District - Carlstadt, East Rutherford, Little Ferry, Lyndhurst, Moonachie, North Arlington, Ridgefield, Rutherford, South Hackensack, and Teterboro. The majority of these municipalities have properties located along the Hackensack River or tidal tributaries of the river. They also contain numerous tidal wetlands. These municipalities have been some of the most severely impacted by coastal flooding in the County in the past and remain susceptible.

Riverine/Stormwater Flooding

Periodic flooding of lands adjacent to non-tidal rivers and streams is a natural and inevitable occurrence. When stream flow exceeds the capacity of the normal water course, some of the above-normal stream flow spills over onto adjacent lands within the floodplain. Unlike coastal flooding (above), riverine flooding is a function of precipitation levels and water runoff volumes within the watershed of the stream or river. The recurrence interval of a flood is defined as the average time interval, in years, expected to take place between the occurrence of a flood of a particular magnitude and an equal or larger flood. Flood magnitude increases with increasing recurrence interval.

As with coastal flooding, floodplains are divided into areas that experience different levels of flooding depending on their elevation. A 100-year riverine flood will inundate the 100-year zone of that floodplain, and a 500-year flood will inundate the 500-year flood zone. The 500-year floodplain is higher in elevation. Several methods were used by FEMA to develop the inundation extents. For smaller watersheds, with drainage areas less than 1 square mile, the Rational Method was used. The Rational Method is a very simplified peak flow analysis. For larger watersheds, the hydrology was based on Special Report No. 38, a method developed by NJDEP and the USGS. Input parameters include drainage area, main channel slope, surface storage area, and impervious cover. Lastly, when a sufficient amount of data was available, flood-flow frequency data was established using actual discharges from local gauging stations.

The flood of record on the Hackensack River occurred on April 16, 2007. The USGS gauge located on the Hackensack River at New Milford, New Jersey (01378500) recorded a flow of 11,600 cfs with an associated gauge height of 12.36 feet. This flow of record is much higher than the estimated 1% annual chance of exceedance peak flow on the Hackensack River at this location. The next highest discharge of 10,500 cfs occurred during Hurricane Irene. The discharge measured following Tropical Storm Floyd in September 1999 was 9,760 cfs.

Flooding is one of the most common and frequently identified hazards in Bergen County. It is also one that Bergen municipalities seek the most assistance for, along with other water-related hazards. While New Jersey land use regulations are in place to control future development in the floodplain, older structures still exist and need to be maintained.

The Hazards U.S. Multi-Hazard (HAZUS-MH) is a nationally applicable standardized methodology and software program that estimates potential losses from floods, earthquakes and hurricanes. HAZUS-MH, developed by FEMA, uses GIS to map and display hazard data as well as the results of damage and economic loss estimates for buildings and infrastructure. HAZUS-MH can also estimate the impacts of floods, earthquakes, and hurricane winds on populations.²¹ FEMA has provided Bergen County with a series of HAZUS vulnerability data for riverine flooding in Bergen County. This data is included as **Appendix K**. Bergen County acknowledges the value of using HAZUS for mitigation planning purposes and intends to utilize HAZUS for the next Plan update in 5 years.

Table 3.8: Bergen County Critical Facilities Vulnerable to Flooding

Facility Name
Allendale
Allendale DPW
Allendale Fire Department
Allendale Police Department
Allendale Volunteer Ambulance Corps
Allendale Water
Brookside School
Hillsdale School
Northern Highlands Regional High School
Bergenfield
Bergenfield Municipal
Bogota
DPW Garage
Carlstadt
Carlstadt Public Works
Carlstadt Pump Station (Barell Ave)
Carlstadt Pump Station (Industrial Rd)
NJ Meadowlands Commission Marina
PSE&G Substation
Pumping Station 1 (Jony Drive)
Williams Transcontinental LPG Pipeline
Closter
Closter Borough Hall
Closter DPW Headquarters
Closter EMS Headquarters
Closter Fire Headquarters
Closter Public Library
Spectrum for Living
Tenakill School
Cresskill
Ambulance Station
Cresskill High School
Electric Substation
Public Fire Station
Public Works Building
Demarest
Anderson Avenue
County Road
Demarest D.P.W
Hardenburgh Ave
Hardenburgh Ave. Bridge

Hardenburgh Ave.-Dam
Knickerbocker Road
Piermont Road
Dumont
94/95 Schraalenburgh Way Senior Housing
Dumont Borough Hall
Dumont D.P.W Building
Dumont Fire Co. #2
Dumont Police Department
Dumont Volunteer Ambulance Corp.
Pump Station (White Beeches Dr)
Verizon Central Office
East Rutherford
Alfred S. Faust Intermediate School
East Rutherford Department of Public Works
East Rutherford Fire Dept.-Carlton Hill Firehouse
East Rutherford Sewage Authority Lift Station
East Rutherford Sewage Authority Pump Station
Federal Reserve Bank
Henry P. Becton Regional High School
McKenzie School
PSE&G Switching Station
Williams Gas Pipeline Valve Station
Edgewater
Comfort Inn Motel (used as shelter)
DPW Annex
Duane Reed Pharmacy
Edgewater Boro Hall and Police Dept.
Edgewater D.P.W
Edgewater Fire Department
Edgewater Library
Edgewater Multi-Plex
Edgewater Municipal
Edgewater Pathmark/Pharmacy
Edgewater Senior Center
Edgewater Volunteer 1st Aide Squad
Edgewater Water Pollution Control Facility
EVG School
George Washington School
Grand Cove Marina
Hess Oil
Holy Rosary Church
Palisade Learning Center
Prime Time Learning Center
Sewer Plant #3
Sunrise Assisted Living

Waterford Towers
Elmwood Park
Elmwood Park Water Distribution Center
Prime Energy Co-Generation
Sewer Pumping Station (Parkview Ave)
Sewer Pumping Station (Martha Ave)
Sewer Pumping Station (River Dr)
Englewood
Route 4
Route 95
Shop Rite Pharmacy
Englewood Cliffs
Pump Station (Chestnut St)
Pump Station (Hollywood
Pump Station (Jane Dr)
Pump Station (Lyncrest Rd)
Pump Station (Roberts Rd)
Unilever Best Foods
Fair Lawn
Fair Lawn DPW Complex
Fair Lawn Memorial Pool
Fair Lawn Parks Bldg
Fair Lawn Sewer Facility (Canger Pl.)
Fair Lawn Sewer Facility (River Rd.)
Fair Lawn Sewer Facility (Saddle River Rd.)
Fair Lawn Water Facility #15
Fair Lawn Water Facility #16
Fair Lawn Water Facility #17
Fair Lawn Water Facility #19
Fair Lawn Water Facility (Wagaraw Rd.)
Memorial Junior High School
Parks & Recreation Garage
Well House
Fairview
Department of Public Works
Fort Lee
Pump Station (Valley St)
Recreation Center
Franklin Lakes
Franklin Lakes Borough Hall
Garfield
Garfield Fire Co #4
Public Service Electric Sub-Station
Hackensack
Bergen County Academies
Bergen County Administrative Building
Bergen County Central Municipal Court
Bergen County Conklin Youth Center

Bergen County Dept. of Public Works
Bergen County Housing, Health & Human Services
Bergen County Jail & BCI Building
Bergen County Justice
Bergen County Maintenance Garage & Fueling Storage
Bergen County Police-Patrol Unit
Bergen County Probation
New Bergen County Agency Building
Ever Ready Oil
Hackensack Dept. of Public Works
PSE&G
Public Service Sub Station
Regent Care
Senior Center & Addiction Rec. Program
Harrington Park
D.P.W Building
Harrington Park Municipal Building
Hasbrouck Heights
Franklin Sewage Pumping Station
Hasbrouck Heights D.P.W
PSE&G Power Substation
Haworth
Haworth Ambulance Corps
Haworth DPW Bldg. #1
Haworth DPW Bldg. #2
Haworth Municipal Complex
United Water Treatment Facility and Reservoir
Hillsdale
Hillsdale Dept. Public Works
PSE&G Electric Substation
Hillsdale Public Library
Ho-Ho-Kus
Bogert Rd. Sewer Station
Bogert Rd. Well #2
Brewster Dams
Community Church and Shelter
Emergency Landing Facility
Flood Monitoring Station
Ho-Ho-Kus Ambulance
Ho-Ho-Kus Borough Hall and Shelter
Ho-Ho-Kus Fire Dept.
Ho-Ho-Kus Inn
Ho-Ho-Kus Police Dept.
Hollywood Ave Well #1
Maple Ave Bridge
Mill Road Bridge
Northwest Bergen Pump Station
Phone Trunk Station

Railroad viaduct
Verizon Switching Center
Leonia
Leonia High School
Little Ferry
Bergen County Utilities Authority
Depyster Creek Pump
Early Learners Child Center
Eckel Rd. Pump Station
Little Ferry D.P.W
Little Ferry Hook & Ladder Fire Dept.
Little Ferry Hose Co. Fire
Little Ferry Library
Little Ferry Municipal
Little Ferry Nursery School
Little Ferry Public Safety Building
Losen Slote Drain Station
Maiden Lane Drain Station
Main & Franklin St. Pump Station
Main St. Pump Station
Memorial School
Public Service Electric
Scientific Design
St. Margaret's of Cartona Church
Union Ave Pump Station
Washington School
Williams St. Drainage
Willow Lake Pump Station
Lodi
D.P.W Yard
Lodi Borough Hall
Lodi Fire Headquarters
LVAC-Lodi EMS
Washington School
Lyndhurst
Bergen Community College at the Meadowlands
Lyndhurst Pump Station #1
Lyndhurst Pump Station #2
Lyndhurst Pump Station #3
Lyndhurst Pump Station #4
Mahwah
Dept. of Public Works/ DPW Garage
Fire Co #3
Public Works Garage
Maywood
Maywood Health Care Center
Maywood DPW
Municipal Pump Station

PSEG Substation
Midland Park
D.P.W Garage
DEP Dam
DEP Dam (Godwin Ave)
Kentshire Apartments
Midland Park Fire Dept.
Verizon/ T-Mobile Cell
Verizon/ T-Mobile Cell
Towers
Montvale
DPW Garage
Moonachie
Civic Center
Concord St. Pump Station
Crest Foam
Department of Public Works
Lincoln Place Pump Station
Moonachie Ave Pump
Moonachie Fire Department
Moonachie First Aid Squad
Moonachie Road Pump Station
Municipal Building
Robert L. Craig School
New Milford
New Bridge Road
New Milford D.P.W
New Milford High School
PSE&G sub-station & electric switching station
River Rd.
United Water Resource Landscaping Yard
North Arlington
Daniel Morris Firehouse Co.
North Arlington D.P.W
North Arlington EMS
North Arlington Little League Field
North Arlington/Lyndhurst Joint Waste Water
PSE&G Power Sub-Station (North Arlington)
Williams Transco Natural Gas Pipeline
Northvale
BCUA Sanitary Sewer Pump Station
Northvale Sanitary Pump Station
Norwood
Buckingham at Norwood-Care and Rehab Center
Norwood Ambulance
Norwood Borough Hall
Norwood D.P.W
Norwood Police Station

Norwood Police Station-EOC	Callahan Chemical Co., Inc.
Norwood Public School	Department of Public Works
Old Tappan	Dowling Fuel Co.
Borough of Old Tappan (Sewer Pump Station #1)	NYS&W Fuel Depot
Lake Tappan	Ridgefield Park High School
Lake Tappan Dam	Ridgewood
Old Tappan Borough Hall	Carr Water Well System Building
Old Tappan Exxon	Ridgewood Fire Dept. Headquarters
Tennessee Gas Pipeline	Ridgewood Parks Building
Oradell	Ridgewood Village Hall/Police Station
NJT Bus	Ridgewood Water Building
Oradell Public Works	Sewer Pump Station (Bellair Rd)
PSE&G Gas Distribution	Sewer Pump Station (Franklin Tpk)
Palisades Park	Sewer Pump Station (Lake Ave)
Department of Public Works	Water Well Pump (Grove St)
Time Warner Cable Co.	Water Well Pump (Lakeview Dr)
Paramus	Water Well Pump (Linwood & Northern Pkwy)
Bergen County Regional Medical Center	Water Well Pump (Ridgewood Ave)
Arcola Power Sub Station	Water Well Pump (Ridgewood Ave)
Department of Public Works	Water Well Pump (Saddle River Rd
Orchard Hills Power Sub Station	St.)
Paramus Borough Hall	River Edge
Paramus Park Power Sub Station	PSE&G
Radio Antenna/ Repeater Site (US Cable)	River Edge D.P.W
Sewer Pump Station (Dunkerhook Road)	River Edge Fire Dept. Co. #2
Sewer Pump Station (Grove Street)	Von Steuben House
Sewer Pump Station (Southcrest Drive)	River Vale
Spring Valley Road Power Sub Station	Ambulance Corps
Woodland Ave Power Sub Station	Lake Tappan
Park Ridge	Police Headquarters
Borough Hall	Public Works Garage
Park Ridge DPW / Water / Electric	South Fire Station
Park Ridge Fire Department	Rochelle Park
Park Ridge Police Headquarters/ Triboro Radio EOC	AT&T / Verizon Telecommunications Center
Tri-Boro Ambulance	Bristol Manor Nursing Home
Ramsey	Fire/EMS/D.P.W
Crystal Spring Lake Dam	Ramada Inn (used as shelter)
Ridgefield	Offices/Police/EOC
English Neighborhood Reform Church	Rockleigh
CSX Freight Railroad	Bergen County Health Care Center
PSE&G Generating Station	Rutherford
PSE&G Sub Station	Borough of Rutherford Public Works
Ridgefield Ambulance Corp. Building	Saddle Brook
Ridgefield Community	Brookwood Convalescent Home
Ridgefield Department of Public Works	Engine Co #1 Fire Station
Ridgefield Fire House #3	Kessler Institute
Wolf Creek Culverts and Bridges	Saddle Brook High School
Ridgefield Park	Saddle Brook Police Headquarters

St. Philips School
Saddle River
Department of Public Works
South Hackensack
Fire Headquarters
Garfield Park Sewage Pumping Station
Grove Street Sewage Station
Huyler St Pump Station
J. Josephson Company
Leuning Street
Memorial Elementary
Phillips Avenue
Public Service Electric Sub Station
Restaurant Depot
Saddle River Ave. Sewage Station
Town Hall Complex
U.S. Post Office
Vreeland Avenue
Wesley Street
Teaneck
D.P.W Yard
Tenafly
Cell Tower (Monopole)
County Manor Nursing
Tenafly D.P.W
Teterboro
Bergen County Animal Shelter
Bergen County Technical H.
Bergen County Youth Complex (JDC)
Municipal Building
Public Works Facility
Sewer & Storm Water Pumping Station
Teterboro Airport
Waldwick
Forum School
Franklin Turnpike
Northwest Bergen Utilities Authority
Village School
White Pond Dam
Wallington
Farmland Dairies
Westwood
Berkeley School
Brookside School
Ketler School
Westwood DPW
Westwood Regional Middle School
Westwood Substation

Woodcliff Lake
Dam
Wood-Ridge
Anderson Ave. Pump Station
Department of Public Works

Table 3.9: Bergen County Critical Facilities Vulnerable to Storm Surge

Facility Name
Carlstadt
Carlstadt Pump Station (Barell Ave)
Carlstadt Pump Station (Industrial Rd)
NJ Meadowlands Commission Marina
Pumping Station 1 (Jony Drive)
Williams Transcontinental LPG Pipeline
East Rutherford
Alfred S. Faust Intermediate School
East Rutherford Department of Public Works
East Rutherford Fire Dept.-Carlton Hill Firehouse
East Rutherford Sewage Authority Lift Station
East Rutherford Sewage Authority Pump Station
Federal Reserve Bank
Henry P. Becton Regional High School
Williams Gas Pipeline Valve Station
Edgewater
Edgewater Water Pollution Control Facility
Fair Lawn
Fair Lawn Public Library
Fair Lawn Senior Center
Fair Lawn Water Facility #19
Fort Lee
Fort Lee Parking Authority
Garfield
Public Service Electric Sub-Station
Hasbrouck Heights
Hasbrouck Heights D.P.W
Little Ferry
Bergen County Utilities Authority
Depyster Creek Pump
Early Learners Child Center
Eckel Rd. Pump Station
Little Ferry D.P.W
Little Ferry Hook & Ladder Fire Dept.
Little Ferry Hose Co. Fire
Little Ferry Library
Little Ferry Municipal
Little Ferry Nursery School
Little Ferry Public Safety Building
Losen Slote Drain Station
Maiden Lane Drain Station
Main & Franklin St. Pump Station
Main St. Pump Station
Memorial School
Public Service Electric
Scientific Design
Scientific Design
St. Margaret's of Cartona Church
Union Ave Pump Station
Washington School
Williams St. Drainage
Willow Lake Pump Station
Lyndhurst
Lyndhurst Pump Station #1
Lyndhurst Pump Station #2
Lyndhurst Pump Station #3
Lyndhurst Pump Station #4
Midland Park
Midland Park Fire Dept.
Moonachie
Civic Center
Concord St. Pump Station
Crest Foam
Department of Public Works
Lincoln Place Pump Station
Moonachie Ave Pump
Moonachie Fire Department
Moonachie First Aid Squad
Moonachie Road Pump Station
Municipal Building
Robert L. Craig School
New Milford
New Bridge Road
New Milford High School
North Arlington
Daniel Morris Firehouse Co.
North Arlington D.P.W
North Arlington/Lyndhurst Joint Waste Water
PSE&G Power Sub-Station (North Arlington)
Oradell
New Jersey Transit Bus
River Edge
PSE&G
River Edge Fire Dept. Co. #2
Von Steuben House
Rutherford
Borough of Rutherford Public Works
Saddle Brook
Engine Co #1 Fire Station
South Hackensack
Grove Street Sewage Station
Huyler St Pump Station

J. Josephson Company
Public Service Electric Sub Station
Saddle River Ave. Sewage Station
Teaneck
D.P.W Yard
Pump Station
Wood-Ridge
Anderson Ave. Pump Station
Department of Public Works

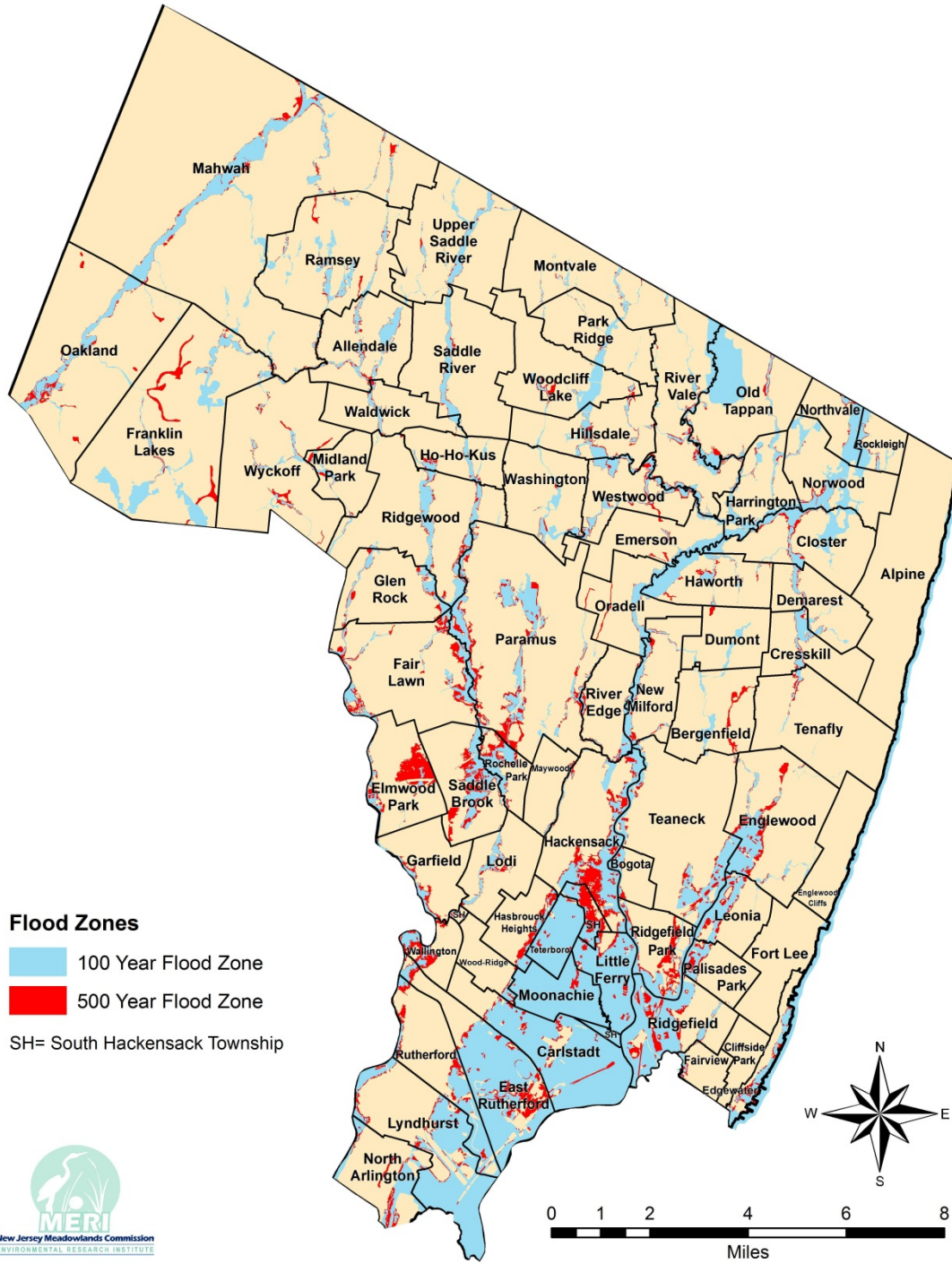


Figure 3.12: Bergen County FEMA 2014 Preliminary FIRM 100 & 500 Year Flood Zones

Table 3.10: Percentage of Bergen County Municipalities Subject to 100- and 500-Year Flood*Percentages based on FEMA 2014 Preliminary FIRMs*

Municipality	Riverine - 100 Yr	Riverine - 500 Yr	Coastal - 100 Yr	Coastal - 500 Yr
Allendale Borough	12	3	0	0
Alpine Borough	0	0	1	0
Bergenfield Borough	5	3	0	0
Bogota Borough	0	0	16	3
Carlstadt Borough	0	0	77	4
Cliffside Park Borough	0	0	0	0
Closter Borough	20	2	0	0
Cresskill Borough	10	2	0	0
Demarest Borough	7	1	0	0
Dumont Borough	5	1	0	0
East Rutherford Borough	2	1	61	10
Edgewater Borough	0	0	38	10
Elmwood Park Borough	7	15	0	0
Emerson Borough	10	2	0	0
Englewood City	13	5	0	0
Englewood Cliffs Borough	0	0	2	0
Fair Lawn Borough	10	6	0	0
Fairview Borough	1	0	6	2
Fort Lee Borough	0	0	1	0
Franklin Lakes Borough	10	3	0	0
Garfield City	8	3	0	0
Glen Rock Borough	9	3	0	0
Hackensack City	6	1	19	11
Harrington Park Borough	24	1	0	0
Hasbrouck Heights Borough	0	0	10	9
Haworth Borough	21	3	0	0
Hillsdale Borough	11	3	0	0
Ho-Ho-Kus Borough	9	2	0	0
Leonia Borough	25	7	0	0
Little Ferry Borough	0	0	87	7
Lodi Borough	7	2	0	0
Lyndhurst Township	5	1	46	2
Mahwah Township	6	1	0	0
Maywood Borough	3	1	0	0
Midland Park Borough	4	2	0	0
Montvale Borough	3	1	0	0
Moonachie Borough	0	0	98	2
New Milford Borough	14	3	0	0

North Arlington Borough	5	0	15	5
Northvale Borough	26	1	0	0
Norwood Borough	21	1	0	0
Oakland Borough	7	2	0	0
Old Tappan Borough	27	2	0	0
Oradell Borough	10	2	0	0
Palisades Park Borough	15	6	0	0
Paramus Borough	12	5	0	0
Park Ridge Borough	6	0	0	0
Ramsey Borough	8	2	0	0
Ridgefield Borough	7	1	43	9
Ridgefield Park Village	9	11	15	3
Ridgewood Village	12	2	0	0
River Edge Borough	11	3	0	0
River Vale Township	15	2	0	0
Rochelle Park Township	28	13	0	0
Rockleigh Borough	24	2	0	0
Rutherford Borough	4	3	24	3
Saddle Brook Township	16	11	0	0
Saddle River Borough	6	1	0	0
South Hackensack Township	2	1	50	30
Teaneck Township	10	2	3	1
Tenafly Borough	1	1	0	0
Teterboro Borough	0	0	96	3
Upper Saddle River Borough	8	1	0	0
Waldwick Borough	7	1	0	0
Wallington Borough	18	15	0	0
Washington Township	7	1	0	0
Westwood Borough	18	5	0	0
Woodcliff Lake Borough	9	2	0	0
Wood-Ridge Borough	0	0	6	2
Wyckoff Township	3	2	0	0

Drought

Bergen County is in New Jersey's Northeast Drought Region, as designated by NJDEP. Droughts of varying intensity occur several times a decade in New Jersey, as noted in Table 3.11.²² Fortunately, in addition to being the hottest and most drying, the high summer months of July and August are normally the wettest months of the year as a result of the greater availability of atmospheric moisture and the higher frequency of thunderstorms.

Reservoir levels decrease and aquifer draw-downs intensify during drought conditions. According to the NJDEP's drought resource website, river and reservoir levels are equally important as water supply sources to Bergen County.²⁴ All municipalities in Bergen County are equally likely to be impacted by drought conditions.

The New Jersey Drought Emergency Plan, prepared by the New Jersey Departments of Law and Public Safety and Environmental Protection, fully identifies authority, organization, concept of operations, and responsibilities for any drought emergency and is used as needed in response to potential drought situations. Drought status information is maintained at <http://njdrought.org>. Drought emergencies are implemented when drought begins to affect residents and businesses.

When emergencies are declared, all residents, including those with private wells, are urged to adhere to mandatory restrictions such as limiting or eliminating lawn watering, driveway washing, and car washing. Often, non-essential business use may be restricted. When waterways approach historic low flows, groundwater supplies may also be affected.

Table 3.11: New Jersey Drought Periods - Northern Climate Division
Periods of 2 or More Months of Severe or Extreme Drought

-- Northern Climate Division --		
Drought Periods	Duration	Lowest PDSI
8/1932 - 9/1932	2 months	-3.40 in 9/1932
11/1949 - 1/1950	3 months	-3.67 in 12/1949
9/1957 - 11/1957	3 months	-3.12 in 11/1957
8/1964 - 8/1966	25 months	-5.51 in 8/1966
12/1980 - 1/1981	2 months	-3.77 in 1/1981
3/1985 - 4/1985	2 months	-3.82 in 4/1985
8/1995 - 9/1995	2 months	-3.43 in 8/1995
7/1999 - 8/1999	2 months	-4.15 in 7/1999
12/2001 - 5/2002	6 months	-4.57 in 2/2002
7/2002 - 9/2002	3 months	-3.28 in 8/2002

Note: Based on the monthly Palmer Drought Severity Index as computed by the National Climatic Data Center. Period of record: January 1895 through November 2014

Table 3.12: Palmer Classifications

4.0 or more	extremely wet
3.0 to 3.99	very wet
2.0 to 2.99	moderately wet
1.0 to 1.99	slightly wet
0.5 to 0.99	incipient wet spell
0.49 to -0.49	near normal
-0.5 to -0.99	incipient dry spell
-1.0 to -1.99	mild drought
-2.0 to -2.99	moderate drought
-3.0 to -3.99	severe drought
-4.0 or less	extreme drought

Table 3.12 details the Palmer drought classifications.²⁵ The Palmer Drought Severity Index (PDSI) attempts to measure the duration and intensity of the long-term drought-inducing circulation patterns. Long-term drought is cumulative, so the intensity of drought during the current month is dependent on the current weather patterns plus the cumulative patterns of previous months. Since weather patterns can change almost literally overnight from a long-term drought pattern to a long-term wet pattern, the PDSI can respond fairly rapidly.²⁶

Extreme Heat

According to FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks. Humid or muggy conditions, which add to the discomfort of high temperatures, occur when a dome of high atmospheric pressure traps hazy, damp air near the ground. Extremely dry and hot conditions can provoke dust storms and low visibility. Droughts occur when a long period passes without substantial rainfall. A heat wave combined with a drought is a very dangerous situation. All municipalities in Bergen County are equally likely to be impacted by extreme heat.

The elderly, the very young, and those who are disabled are at risk from extreme heat. Studies indicate that extreme heat that continues for periods longer than 2 days causes a significant rise in heat-related illnesses. Spending several hours each day in air conditioning, however, can reduce the risk of heat-related illness. People living in urban areas may be at greater risk from the effects of a prolonged heat wave than people living in rural regions. Stagnant atmospheric conditions can trap pollutants in urban areas, and asphalt and concrete stay warm longer. This phenomenon is known as the urban heat island effect.

The risks associated with a heat wave can include:

- Heat cramps: Muscular pains and spasms resulting from heavy exertion. Heat cramps are often the first signal that the body is suffering from extreme heat.
- Heat exhaustion: A form of mild shock that typically occurs when people exercise heavily or work in a hot, humid place where body fluids are lost through heavy sweating.

- Heat/Sun stroke: A life-threatening condition in which the victim's temperature control system that produces sweating to cool the body stops working. The body temperature can rise to the extent that brain damage and death may result if the body is not cooled quickly.

New Jersey experiences temperatures in the summer that range from 85 to 100 degrees, with occasional temperatures that may reach above 100 degrees Fahrenheit. The probability of Bergen County experiencing extreme heat is very high (see Figure 3.14.)²⁷ It is almost certain that there will be a period of extreme heat in Bergen County every summer. Steps to be taken to stay safe during extreme heat include:

- Stay indoors as much as possible and limit exposure to the sun.
- Stay on the lowest floor out of the sunshine if air conditioning is not available.
- Consider spending the warmest part of the day in public buildings such as libraries, schools, movie theaters, shopping malls, and other community facilities. Circulating air can cool the body by increasing the perspiration rate of evaporation.
- Eat well-balanced, light, and regular meals. Avoid using salt tablets unless directed to do so by a physician.
- Drink plenty of water. Persons who have epilepsy or heart, kidney, or liver disease; are on fluid-restricted diets; or have a problem with fluid retention should consult a doctor before increasing liquid intake.
- Limit intake of alcoholic beverages.
- Dress in loose-fitting, lightweight, and light-colored clothes that cover as much skin as possible.
- Protect face and head by wearing a wide-brimmed hat.
- Check on family, friends, and neighbors who do not have air conditioning and who spend much of their time alone.
- Never leave children or pets alone in closed vehicles.
- Avoid strenuous work during the warmest part of the day. Use a buddy system when working in extreme heat, and take frequent breaks.

According to the National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center (NCDC), extreme heat has claimed lives in New Jersey. While extreme heat is unavoidable, it is important that residents follow the proper precautions and safety practices when the weather gets extremely hot.

Table 3.13: Record High Temperatures (in Degrees Fahrenheit) in the United States by State²⁸

State	Value	Date	Location	Station	Status
Alabama	112	6-Sep-25	CENTREVILLE	11520	E
Alaska	100	27-Jun-15	FORT YUKON	26413	E
Arizona	128	29-Jun-94	LAKE HAVASU CITY	24761	E
Arkansas	120	10-Aug-36	OZARK	35508	E
California	134	10-Jul-13	GREENLAND RANCH	43603	E
Colorado	114	1-Jul-33	LAS ANIMAS	54834	N1A
Colorado	114	11-Jul-54	SEDGWICK	57513	N1A
Connecticut	106	23-Aug-16	TORRINGTON (1)	68438	E1
Connecticut	106	15-Jul-95	DANBURY	61762	E1
Delaware	110	21-Jul-30	MILLSBORO	76020	E
Florida	109	29-Jun-31	MONTICELLO 5 SE	85879	E

Georgia	112	24-Jul-52	LOUISVILLE 1 E	95314	E1
Georgia	112	20-Aug-83	GREENVILLE	93915	E1
Hawaii	100	27-Apr-31	PAHALA 21	517421	E
Idaho	118	28-Jul-34	OROFINO	106681	E
Illinois	117	14-Jul-54	EAST ST LOUIS PARKS COLLEGE	112614	E
Indiana	116	14-Jul-36	COLLEGEVILLE ST JOSEPH COUNTY AP	121719	E
Iowa	118	20-Jul-34	KEOKUK NO 2	134372	EA
Kansas	121	18-Jul-36	FREDONIA	142894	E1
Kansas	121	24-Jul-36	ALTON 1 W	140201	E1
Kentucky	114	28-Jul-30	GREENSBURG	153430	E
Louisiana	114	10-Aug-36	PLAIN DEALING	167344	E
Maine	105	4-Jul-11	NORTH BRIDGTON	175875	E1
Maine	105	10-Jul-11	NORTH BRIDGTON	175875	E1
Maryland	109	July 3, 1898	BOETTCHERVILLE	180960	E3
Maryland	109	6-Aug-18	KEEDYSVILLE	184780	E3
Maryland	109	6-Aug-18	CUMBERLAND	182280	E3
Maryland	109	7-Aug-18	CUMBERLAND	182280	E3
Maryland	109	10-Jul-36	FREDERICK POLICE BRKS	183348	E3
Maryland	109	10-Jul-36	CUMBERLAND	182280	E3
Massachusetts	107	2-Aug-75	CHESTER 2	191430	E2
Massachusetts	107	2-Aug-75	NEW BEDFORD	195246	E2
Michigan	112	13-Jul-36	STANWOOD	207834	E2
Michigan	112	13-Jul-36	MIO HYDRO PLANT	205531	E2
Minnesota	115	29-Jul-17	BEARDSLEY	210541	N1A
Mississippi	115	29-Jul-30	HOLLY SPRINGS 2 N	224168	E
Missouri	118	14-Jul-54	UNION	238515	E3
Missouri	118	14-Jul-54	WARSAW 1	238733	E3
Montana	117	July 20, 1893	GLENDIVE	243581	E1
Montana	117	5-Jul-37	MEDICINE LAKE 3 SE	245572	E1
Nebraska	118	15-Jul-34	GENEVA	253175	E1
Nebraska	118	17-Jul-36	HARTINGTON	253630	E1
Nebraska	118	24-Jul-36	MINDEN	255565	E1
Nevada	125	29-Jun-94	LAUGHLIN	264480	E
New Hampshire	106	4-Jul-11	NASHUA 2 NNW	275712	E
New Jersey	110	10-Jul-36	RUNYON	287825	E
New Mexico	122	27-Jun-94	WASTE ISOLTN PILOT PLT	299569	E
New York	108	22-Jul-26	TROY	308597	E
North Carolina	110	21-Aug-83	FAYETTEVILLE REG AP GRANNIS FIELD	93740	E
North Dakota	121	6-Jul-36	STEELE 4N	328366	E
Ohio	113	21-Jul-34	GALLIPOLIS	333029	E
Oklahoma	120	18-Jul-36	ALVA 1W	340193	E1A
Oklahoma	120	19-Jul-36	ALTUS IRIG RES STATION	340179	E1A
Oklahoma	120	10-Aug-36	POTEAU	347246	E1A

Oklahoma	120	12-Aug-36	ALTUS IRIG RES STATION	340179	E1A
Oregon	119	July 29, 1898	PRINEVILLE	356883	E1
Oregon	119	August 10, 1898	PENDLETON DOWNTOWN	356541	E1
Pennsylvania	111	9-Jul-36	PHOENIXVILLE 1 E	366927	E1
Pennsylvania	111	10-Jul-36	PHOENIXVILLE 1 E	366927	E1
Puerto Rico	104	2-Jul-96	MONA ISLAND 2	666258	NA
Rhode Island	104	2-Aug-75	PROVIDENCE T F GREEN STATE AP	14765	E
South Carolina	113	29-Jun-12	COLUMBIA UNIV OF SC	381944	NS
South Dakota	120	5-Jul-36	GANN VALLEY 4NW	393217	N1
South Dakota	120	15-Jul-06	FORT PIERRE 17 WSW	393076	N1
Tennessee	113	29-Jul-30	PERRYVILLE	407099	E1
Tennessee	113	9-Aug-30	PERRYVILLE	407099	E1
Texas	120	12-Aug-36	SEYMOUR 3NW	418221	E1
Texas	120	28-Jun-94	MONAHANS	415999	E1
Utah	117	5-Jul-85	ST GEORGE	427516	EA
Vermont	107	7-Jul-12	VERNON	438600	N
Virgin Is. (U.S.)	99	31-Jul-88	CRUZ BAY	671980	N1A
Virgin Is.(U.S.)	99	4-Aug-94	CHARLOTTE AMALIE CYRIL E KING AP	11640	N1A
Virgin Is. (U.S.)	99	23-Jun-96	CHARLOTTE AMALIE CYRIL E KING AP	11640	N1A
Virginia	110	5-Jul-00	COLUMBIA 2SSE	441929	E1
Virginia	110	7-Jul-00	COLUMBIA 2SSE	441929	E1
Virginia	110	15-Jul-54	BALCONY FALLS	440411	E1
Washington	118	24-Jul-28	WAHLUKE	458903	E1
Washington	118	5-Aug-61	ICE HARBOR DAM	453883	E1
West Virginia	112	4-Aug-30	MOOREFIELD 1 SSE	466163	E1
West Virginia	112	10-Jul-36	MARTINSBURG EASTERN WV REG AP	13734	E1
Wisconsin	114	13-Jul-36	WISCONSIN DELLS	479319	E
Wyoming	115	8-Aug-83	BASIN	480540	N1
Wyoming	115	15-Jul-88	DIVERSION DAM	482595	N1

Notes

- **E** Value is unchanged from previous extremes tables last updated by NCDC between 1998 and 2006. Value exceeds all other valid values.
- **N** Value is changed from extremes tables last updated by NCDC between 1998 and 2006. Value exceeds all other valid values.
- **1** Value ties values from earlier dates.
- **2** Value set at multiple stations on the same date.
- **3** Value set at multiple locations on the same date and ties values from earlier dates.
- **S** Value has been officially reviewed by a State Climate Extremes Committee.
- **A** Additional information is available. Official value may be exceeded by a widely accepted unofficial value that is not supported by a direct, calibrated observation (e.g., estimates, uncalibrated instruments, anecdotal reports).

Figure 3.14 Historical Extreme Temperatures

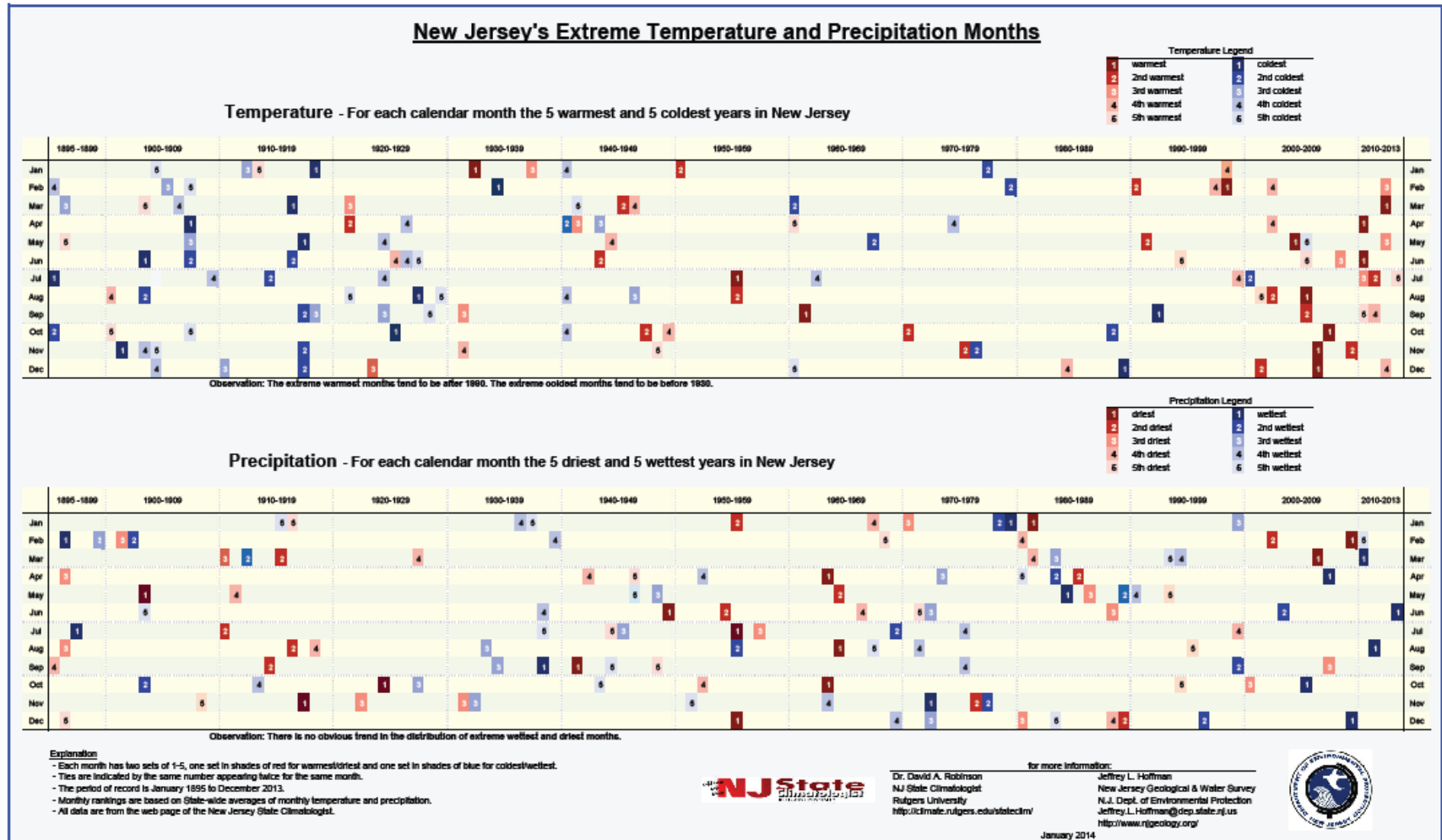


Table 3.14 details extreme temperature events (heat and cold) that occurred from January 2010 through December 2012.²⁹

Table 3.14: Extreme Temperatures Events in Bergen County, July 1995 through December 2012

Date(s) of Event	Event Type	Counties Affected	Description
July 15, 1995	Excessive Heat	Statewide	Heat index reached 128°F in Newark when the temperature reached 103°F and the dew point reached 84°F. There were 16 hours with the heat index $\geq 100^\circ\text{F}$, 12 hours of $\geq 110^\circ\text{F}$, and three hours of $\geq 120^\circ\text{F}$. ONJSC stated that this was the most uncomfortably hot day at Newark since weather observations began to be collected in the early 1930s.
July 5, 1999	Excessive Heat	Statewide	The index was $\geq 100^\circ\text{F}$ for 14 hours, $\geq 105^\circ\text{F}$ for nine hours, and $\geq 110^\circ\text{F}$ for four hours. This culminated with the July 4 to 7 period of having 58 hours with a heat index $\geq 90^\circ\text{F}$, with never more than four consecutive hours of less than 90°F.
January 27 to 28, 2000	Extreme Cold	Statewide	Temperatures ranged from 9°F to 14°F
May 2 to 4, 2001	Extreme Heat	Statewide	Temperatures ranged from 89°F to 96°F
February 5 to 7, 2007	Extreme Cold	Statewide	Temperatures ranged from -4°F to 12°F
June 26 to 28, 2007	Extreme Heat	Statewide	Temperatures ranged from 92°F to 96°F
July 8 to 10, 2007	Extreme Heat	Statewide	Temperatures ranged from 93°F to 100°F
August 7 to 8, 2007	Extreme Heat	Statewide	Temperatures ranged from 93°F to 101°F
August 25, 2007	Extreme Heat	Statewide	Temperatures ranged from 91°F to 94°F
June 7 to 10, 2008	Extreme Heat	Statewide	Temperatures ranged from 92°F to 100°F
July 16 to 22, 2008	Extreme Heat	Statewide	Temperatures ranged from 93°F to 98°F
August 10, 2009	Extreme Heat	Statewide	Temperatures ranged from 93°F to 104°F
June 23 to 24, 2010	Extreme Heat	Statewide	Temperatures ranged from 97°F to 99°F
June 27 to 28, 2010	Extreme Heat	Statewide	Temperatures ranged from 95°F to 99°F
July 4 to 7, 2010	Extreme Heat	Statewide	Temperatures ranged from 90°F to 105°F. One fatality was reported from this event. In Newark, four straight days of temperatures $\geq 100^\circ\text{F}$ (101°F, 102°F, 103°F, and 101°F respectively). This led to 65 consecutive hours of temperatures of $\geq 80^\circ\text{F}$. The low temperature on July 6 was 84°F.
January 24, 2011	Extreme Cold/ Wind chill	Statewide	An arctic high pressure system brought in the coldest air mass of the season to New Jersey. Many places saw morning lows that were the coldest during that winter. Northwest winds produced wind chill factors below zero in most of the State. Sussex County experienced a wind chill of -15°F. Actual low temperatures in the Raritan Basin and northwest New Jersey were below 0°F. Temperatures throughout the State ranged from -14°F in Warren County to 9°F in Cape May Co.
July 21 to 24, 2011	Heat Wave	Statewide	One of the most oppressive heat waves since July 1995. It caused two deaths and hundreds of heat-related injuries. Many locations had high temperatures that were in excess of 100°F. July 22 was the hottest, with heat index values of 110°F to 120°F. Many counties and municipalities

			opened cooling centers for its residents. Temperatures ranged from 100°F in Cumberland and Cape May Counties, to 106°F in Mercer County.
March 2012	Record Warmth	Statewide	The warmest March in history, breaking nearly 15,000 warm temperature records.
June 20 to 22, 2012	Heat Wave	Statewide	A three-day heat wave occurred throughout the entire State, bringing temperatures between 94°F and 99°F. The heat wave broke dramatically when a series of severe thunderstorms impacted New Jersey.
June 29, 2012	Extreme Heat	Statewide	An unseasonably hot and humid day produced high temperatures in the mid to upper 90s in most of New Jersey. Maximum hourly heat indices reached between 100°F and 105°F. High temperatures ranged from 93°F in Hunterdon, Warren, Cape May and Atlantic Counties, to 99°F in Burlington County.
July 17 to 18, 2012	Extreme Heat	Statewide	Temperatures ranged from 97°F in Sussex County, to 102°F in Morris, Ocean and Camden Counties.

Source: NOAA-NCDC 2013; ONJSC Rutgers University 2013a
 °F degrees Fahrenheit

Winter Storm/Extreme Cold

Winters in New Jersey can be extremely hazardous. Temperatures often reach well below freezing point and wind chills can make it feel as though it is below zero degrees Fahrenheit. Figure 3.11 on the previous page details historical extreme heat as well as extreme cold temperatures in New Jersey.³⁰ All municipalities in Bergen County are equally likely to be impacted by extreme cold and winter storms.

In New Jersey temperatures fall below freezing as many as 150 days each year in the northwest portion of the State, with less than 75 days below freezing along the southern coast. The average is between 90 and 100 days over two-thirds of the State.³¹

Wind chill is an index of air temperature indicating how quickly heat is lost from skin when exposed to cold, windy conditions. Figure 3.15 shows what the temperature actually feels like with the wind chill factor.³² Wind chills can lead to serious conditions of frost bite and even hypothermia. Hypothermia, or abnormally low body temperature, results when the body starts losing heat faster than it can be produced. Hypothermia can affect the brain, making it difficult for the victim to think clearly, move well, or even realize that they are in danger. When the body temperature is below 95 degrees Fahrenheit, the situation is an emergency.

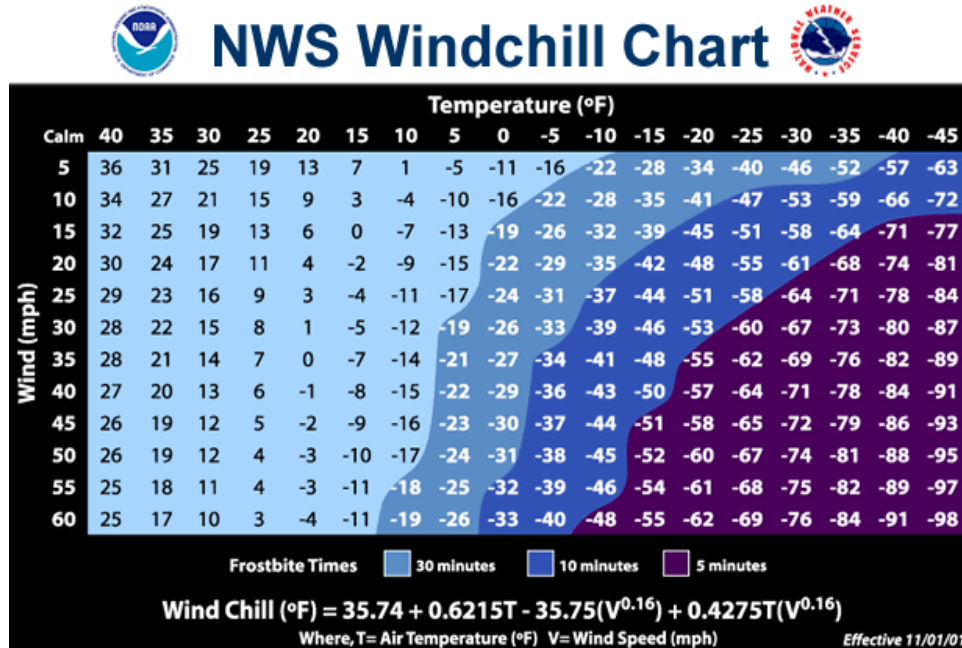


Figure 3.15: National Weather Service Wind Chill Chart

Those most at risk include the elderly, babies sleeping in cold bedrooms, children left unattended, and anyone who remains outdoors for long periods. Symptoms of hypothermia include uncontrolled shivering, memory loss, disorientation, and drowsiness. Warning signs in infants include cold, bright red skin and very low energy. Frostbite is damage to body tissue caused by extreme cold. Symptoms of frostbite include numbness and a pale color in extremities such as fingers, toes, and earlobes. Skin may feel unusually firm or waxy. If you must go outdoors during extremely cold temperatures, it is important to dress appropriately:

- Wear several layers of loose-fitting, lightweight, warm clothing rather than one layer of heavy clothing. The outer garments should be tightly woven and water repellent.
- Wear mittens, which are warmer than gloves.
- Wear a hat.
- Cover your mouth with a scarf to protect your lungs.

Extremely cold temperatures and wind chills are not the only hazards that affect New Jersey in the winter. New Jersey is also highly susceptible to snow storms, blizzards and nor'easters. A blizzard includes winds of 35 mph or more and blowing snow that reduces visibility to less than ¼ mile for three hours or longer. Heavy snow can immobilize a region and strand commuters, close airports, stop the flow of supplies and disrupt emergency and medical services. Accumulations of snow can cause the collapse of roofs, trees, and power lines. Homes and farms may be isolated for days, and unprotected crops may be lost. A Nor'easter is defined as a macro-scale storm whose winds come from the northeast, especially in the coastal areas of the northeastern United States and Atlantic Canada (<http://www.wikipedia.com>). More specifically, it describes a low pressure area whose center of rotation is just off the coast and whose leading winds in the left forward quadrant rotate onto land from the northeast. The precipitation pattern is similar to other extratropical storms. A Nor'easter can cause coastal flooding, coastal erosion and gale force winds. The northeastern United States, from New Jersey to the New England coast, Quebec and Atlantic Canada see nor'easters each year, most often in the winter and early spring, but also sometimes

during the autumn. These storms can leave inches of rain or several feet of snow on the region, and can last for several days. There have been several severe storms to hit Bergen County in recent years. Two of the most severe were the North American Blizzard of 1996 (January) and the North American Blizzard of 2006 (February).

The Blizzard of 1996 was a state declared emergency which dropped at least 24" of snow onto the entire state of New Jersey. Roads were shut down during the three day storm and power outages were reported statewide. Businesses were closed either due to road conditions or because of the loss of power. Table 3.15 shows a summary of snowfall for the northeast and comparisons to other storms.

Snowfall totals for the Blizzard of 1996 are based on data received through Tuesday morning. Record snowfall amounts are for storms spanning no more than two days. Another state declared emergency, the Blizzard of 2006 saw record snowfall for New York City at 26.9" recorded at Central Park. In New Jersey, the storm was powerful enough to stop NJ Transit bus service from 7:00 a.m. to 4:00 p.m. 21.0" of snow fell in Newark, New Jersey and 16,000 people were left without power. Businesses were closed for most of the day throughout northern New Jersey.

While the NJOEM does not recommend driving during a snowstorm or blizzard, they offer the following precautions if a resident finds it absolutely necessary to take a motor vehicle out on the road in inclement cold weather conditions:

- Always buckle your seat belt.
- Brake properly to avoid skidding. If driving on snow or ice, start slowly and brake gently. Begin braking early when you come to an intersection.
- If you start to slide, ease off the gas pedal or brakes. Steer into the direction of the skid until you regain traction, and then straighten your vehicle. If you have antilock brakes, apply steady pressure.
- In fog, drive with headlights set on dim or use fog lights.
- In rain, fog, snow or sleet, stay within the limits of your vision. If it is too difficult to see, pull off the road and stop.
- Drive slowly and increase your following distance. Your speed should adjust for conditions and match the flow of traffic.
- Watch for slick spots. Be physically and mentally prepared to react.

Given the history of extreme temperatures and snowstorms in New Jersey and Bergen County in particular, it is almost certain that at least one case of extreme cold and/or snowfall will be seen during winter months. It is important to make sure residents know what precautions to take when these conditions occur. Though it is not possible to keep everyone indoors during cold temperatures and to keep all drivers off the roads during snow storms, it is important for Bergen County Police and OEM to be able to do their best to prevent unnecessary injuries or deaths.

Table 3.15: Snowfall Amounts for the NortheastData compiled by the Northeast Regional Climate Center at Cornell University. ³³

City	Blizzard of '96 Total (inches)	Record Snowfall Amount	Date of Record Amount	"Storm of the Century" (March 1993)
Philadelphia, PA	30.7	21.3	Feb. 11-12, 1983	12.0
Newark, NJ	27.8	22.6	Feb. 3-4, 1961	12.7
Washington Dulles AP	24.6	22.8	Feb. 10-11, 1983	14.1
Providence, RI	24.0	28.6	Feb. 7-8, 1978	10.2
Elkins, WV	23.4	20.7	Nov. 24-25, 1950	18.8
Baltimore, MD	22.1	22.8	Feb. 11, 1983	11.9
Wilkes-Barre/Scranton, PA	21.0	21.4	Mar. 13-14, 1993	21.4
Charleston, WV	20.5	18.9	Mar. 13-14, 1993	18.9
New York, NY	20.2	26.4	Dec. 26-27, 1947	10.6
Boston, MA	18.2	27.1	Feb. 6-7, 1978	12.8
Hartford, CT	18.2	21.0	Feb. 11-12, 1983	14.8
Washington National AP	17.1	18.7	Feb. 18-19, 1979	6.6
Bridgeport, CT	15.0	17.0	Dec. 19-20, 1948	10.8
Portland, ME	10.2	27.1	Jan. 17-18, 1979	18.6
Pittsburgh, PA	9.6	24.6	Mar. 12-13, 1993	24.6
Williamsport PA	8.6	24.1	Jan. 12-13, 1964	15.9

Table 3.16 details snow and blizzard events that occurred in New Jersey from January 1, 2012 to December 31, 2012. This table may not include all incidents.³⁴

Table 3.16: Snow and Blizzard Events Affecting Bergen County

Date(s) of Event	Event Type	Counties Affected	Description
February 6, 2010	Blizzard	Statewide	A major winter storm dropped 20 to 30 inches of snow across the southern third of New Jersey, 10 to 20 inches across the central third of New Jersey, and less than 10 inches of snow north of Interstate 78 in the northern third of New Jersey from the afternoon of the February 5 into the afternoon of February 6, 2010. Blizzard conditions occurred in the southeastern part of the State during the early morning of February 6th, as winds gusted up to 50 mph. The 18.2 inches of snow that fell at the Atlantic City International Airport (Atlantic County) was the 3rd-highest single snowfall event on record. Cape May County was particularly hard hit by this storm with more than 70,000 homes and businesses losing power.
February 10, 2010	Blizzard	Statewide	For the second time within one week a major winter storm affected New Jersey. Blizzard conditions occurred at times across the extreme southern part of the state during the afternoon and early evening of February 10th. Snowfall averaged seven to 15 inches across northwest New Jersey, 12 to 20 inches across central New Jersey, and six to 12 inches across the southern third of New Jersey. Ice accretions were less than one tenth of an inch. Two storm-related deaths occurred in Burlington and Middlesex Counties.
March 25-26, 2010	Heavy Snow	Northeast	A weather low brought a combination of heavy snow, heavy rain, coastal flooding, and strong winds to the region from March 25th through the 26th. Accumulations of one to two feet of snow were common across the region.
December 26-27, 2010	Heavy Snow	Statewide	See Appendix D for detailed information regarding this event.
January 8, 2011	Heavy Snow	Statewide	Snowfall averaged four to eight inches across the southeast part of the State, one to four inches across the southwest and central part of the State, and less than two inches in the northwest part of the State.
January 11-12, 2011	Heavy Snow	Statewide	Heavy snow fell across most of New Jersey from the early evening of January 11th through the early morning on the 12th. Snowfall averaged one to four inches in the southeast part of the State where some rain, freezing rain, and sleet occurred and five to nine inches of snow fell across the rest of the State.
January 17-18, 2011	Winter Storm	Statewide	A winter storm produced a protracted mix of snow, sleet, and freezing rain across most of the northern half of New Jersey with less of an impact across southwest and coastal central New Jersey. Snow and sleet accumulations in most of the northern half of New Jersey averaged one to three inches, and ice accretions averaged two tenths to five tenths of an inch. Across southwest and coastal central New Jersey snow and sleet accumulations were around an inch or less and ice accretions averaged around one tenth of an inch. Mainly rain fell across southeast New Jersey.
January 26-27, 2011	Heavy Snow	Statewide	Snow and sleet accumulations reached 12 to 18 inches in southwest New Jersey and the Passaic and Raritan Basins with lesser amounts elsewhere, especially toward and along the southeast coast.
March 4-5, 2011	Heavy Snow	Statewide	An intensifying low-pressure system brought a protracted wintry mix of precipitation to central and southern New Jersey on March 4th and 5th and to northwestern New Jersey on March 4th through the 6th. Accumulations ranged from one to 15 inches throughout the state.
October 29, 2011	Heavy Snow	Northeast	Snowfall totals ranged from 0.2 inches in several locations to 19.1 inches in Vernon Township (Sussex County) (record storm total). Several other locations broke records for October snowfall totals (ONJSC 2011).
January 21, 2012	Heavy Snow	Bergen, Passaic	Between five to seven inches of snow fell across Western Bergen County by Saturday afternoon, with Oakland reporting 6.5 inches.
January 7-8, 2012	Winter Storm	Statewide	A strong Nor'easter caused high winds along the coast, heavy snow in east central New Jersey, 10-foot waves along the oceanfront, and minor tidal flooding along the oceanfront with the overnight high tide on January 7th

Source: NOAA-NCDC 2013; NJ State HMP 2011

Earthquake

Damaging earthquakes are rare, but not unheard of in New Jersey. Earthquakes with an estimated magnitude of 5.2 on the Richter scale occurred in the New York City area in 1737 and 1834. In historic times, earthquakes of magnitudes between 6 and 7 have occurred in the Boston, Massachusetts and Charleston, South Carolina areas, and in the St. Lawrence Valley of Quebec. New Jersey is in a similar tectonic setting as these places and earthquakes of this magnitude are possible. The risk of a damaging quake, in combination with the density and value of the buildings, place New Jersey tenth among all states for potential economic loss from earthquakes.

New Jersey Geological Survey³⁵

FEMA defines an earthquake as a sudden slipping or movement of a portion of the earth's crust, accompanied and followed by a series of vibrations. It is important to understand all of the terms associated with earthquakes, which include the following:

Epicenter: The place on the Earth's surface directly above the point on the fault where the earthquake rupture begins. Once fault slippage begins, it expands along the fault during the earthquake and can extend hundreds of miles before stopping.

Fault: The fracture across which displacement occurs during an earthquake. The slippage may range from less than an inch to more than 10 yards in a severe earthquake.

Magnitude: The amount of energy released during an earthquake, which is computed from the amplitude of the seismic waves. A magnitude of 7.0 on the Richter scale indicates an extremely strong earthquake. Each whole number on the scale represents an increase of about 30 times more energy released than the previous whole number represents. Therefore, an earthquake measuring 6.0 is about 30 times more powerful than one measuring 5.0. The relationship between magnitude and intensity is detailed in Table 3.17.

Seismic Waves: Vibrations that travel outward from the earthquake fault at speeds of several miles per second. Although fault slippage directly under a structure can cause considerable damage, the vibrations of seismic waves cause most of the destruction during earthquakes.

Aftershock: An earthquake of similar or lesser intensity that follows the main earthquake.

Table 3.17: Approximate Relationship between Magnitude and Intensity³⁶

Magnitude	Felt Area	Distance Felt	Modified Mercalli Scale
	(Square miles)	(approx. miles)	(close to epicenter)
3.0-3.9	750	15	I-III
4.0-4.9	3,000	30	IV-V
5.0-5.9	15,000	70	VI-VII
6.0-6.9	50,000	125	VII-VIII
7.0-7.9	200,000	250	IX-X

The Modified Mercalli (MM) scale reads as follows:³⁷

- I. Not felt except by a very few under especially favorable circumstances.
- II. People lying down might feel the earthquake. Light suspended objects may sway.
- III. People on upper floors will feel it, but may not know it's an earthquake. Hanging objects swing.
- IV. People indoors will probably feel it, but those outside may not. Houses may creak.
- V. Nearly everybody feels it. Sleepers are awakened. Doors swing, pictures move, things tip over.
- VI. Everyone feels the earthquake. It is hard to walk. Windows and dishes broken. Books fall from shelves.
- VII. It is hard to stand. Plaster, bricks and tiles fall from buildings. Small landslides.
- VIII. People will not be able drive cars. Poorly built buildings may collapse, chimneys may fall.
- IX. Most foundations are damaged. Masonry heavily damaged. Pipes are broken. The ground cracks.
- X. Most buildings are destroyed. Water is thrown out of rivers and lakes. Large landslides.
- XI. Rails are bent. Bridges and underground pipelines unusable.
- XII. Most objects are leveled. Large objects may be thrown into the air. Large rock masses displaced.

The effect of an earthquake on the Earth's surface is called the intensity. The intensity scale consists of a series of certain key responses such as people awakening, movement of furniture, damage to chimneys, and finally - total destruction. Although numerous *intensity scales* have been developed over the last several hundred years to evaluate the effects of earthquakes, the one currently used in the United States is the Modified Mercalli (MM) Intensity Scale. It was developed in 1931 by the American seismologists Harry Wood and Frank Neumann. This scale, composed of increasing levels of intensity that range from imperceptible shaking to catastrophic destruction, is designated by Roman numerals. It does not have a mathematical basis; instead it is an arbitrary ranking based on observed effects.³⁸

The Modified Mercalli Intensity value assigned to a specific site after an earthquake has a more meaningful measure of severity to the nonscientist than the magnitude because intensity refers to the effects actually experienced at that place.

The lower numbers of the intensity scale generally deal with the manner in which the earthquake is felt by people. The higher numbers of the scale are based on observed structural damage. Structural engineers usually contribute information for assigning intensity values of VIII or above.

The longest and most active geologic fault in New Jersey is the Border Fault. The fault, which divides the Highlands and Piedmont Physiographic Provinces, geologically unique regions, extends south from Stony Point, New York to Reading, Pennsylvania. In the north, it passes into New Jersey about half a mile west of State Route 202 in Bergen County, and passes out of northwestern New Jersey north of Stockton in Hunterdon County. The Ramapo section of this fault, known as the Ramapo Fault, extends south from the New Jersey-New York border along two thirds of the New Jersey portion of the Border Fault, and has been the most active section of the Border Fault. Over 25 percent of the earthquakes experienced in New Jersey over the past 200 years had their epicenters within 30 miles of the fault.

Figure 3.16 represents historical earthquake epicenters spatially across Bergen County. This map also shows earthquakes that have occurred in immediately adjacent counties. Most have been less than 2.5 in magnitude which is usually undetected. A few have been around a magnitude 3.0 which may cause minimal damage, if any. Although predicting the time, place, and magnitude of earthquakes is not possible, it is possible to predict their potential to do damage. Structural damage caused by an earthquake depends on how much the ground shakes. The amount of ground shaking, in turn, depends on how soft

and how deep the soil is, and on the type of bedrock lying beneath it. Also important is whether the soil type will lose strength, liquefy, or slide downhill when shaken. The New Jersey Geological Survey maps seismic soil properties, including shaking behavior, liquefaction susceptibility, and tendency to landslide.

The USGS maps the peak ground acceleration (PGA) values with a 10% chance of being exceeded over 50 years. Figure 3.17 shows the geographic area affected (all colored areas on the map), the probability of an earthquake of each given level of severity (10% chance in 50 years, or once in 500 years), and the severity (the PGA is indicated by color). The lowest risk of earthquake is shown in gray and the greatest risk in brown. PGA is a measure of the strength of ground movements. PGA measures the rate in change of motion relative to the established rate of acceleration due to gravity. If the PGA value is less than 2 (i.e., a gray color), seismic risk is relatively low and earthquakes are not required to be identified as a hazard. In the case of Bergen County, there is a PGA value of 5-6, which means the seismic risk is moderate to high. Figure 3.17 shows peak ground acceleration (PGA) with a 10% chance of being exceeded over 50 years as highest in northeastern New Jersey (5-6%g) and decreasing to the south (2%g). According to FEMA's How-To Guidance entitled, *Understanding Your Risks*, earthquakes should be profiled as a hazard if the PGA is greater than 3%g.³⁹

In addition to the map data, Bergen County has the ability to evaluate the potential vulnerability in terms of estimated loss from earthquakes and other natural hazards. The Hazards U.S. Multi-Hazard (HAZUS-MH) is a nationally applicable standardized methodology and software program that estimates potential losses from earthquakes, hurricanes, and floods. HAZUS-MH, developed by FEMA, uses GIS to map and display hazard data as well as the results of damage and economic loss estimates for buildings and infrastructure. HAZUS-MH can also estimate the impacts of earthquakes, hurricane winds, and floods on populations.⁴⁰ It should be noted that HAZUS was **not** used to prepare this Plan update. Bergen County will utilize HAZUS for the next Plan update in 5 years.

HAZUS-MH studies utilized for the 2008 Plan indicate a low frequency, but high potential dollar losses for earthquakes in northern New Jersey. The New York Consortium for Earthquake Mitigation (NYCEM) HAZUS Multi-Hazards Study of the greater New York City metro area (including parts of northern New Jersey) indicated a low hazard frequency, but high severity because of dense population, vulnerable infrastructure, and substantial economic value. According to *Earthquake Risks and Mitigation in the New York/New Jersey/Connecticut Region*, prepared by the NYCEM, the replacement value of the buildings in Bergen County is \$56 billion.⁴¹ The New Jersey Geological Survey (NJGS) has conducted a HAZUS earthquake loss estimation study for Bergen County. This report, entitled, *Earthquake Loss Estimation Study for Bergen County, New Jersey*, used HAZUS to estimate quantitative earthquake losses for Bergen County. The report considered various earthquake "worst case" scenarios using default HAZUS rock/soil data, as well as updated data compiled by the NJGS. For example, for a 5.0 magnitude earthquake occurring in Bergen County, it is estimated that 12,800 buildings would be damaged, with \$1.08 billion in property damages and \$80 million in business interruption losses. The report lists several caveats that accompany the use of the HAZUS model, but concludes that the results for the 5.0 magnitude earthquake are reasonably representative of the actual damage an earthquake in New Jersey could cause, although the damage would not be limited to Bergen County. The complete report is available for download from the NJDEP website⁴².

The most recent earthquake recorded in Bergen County was a magnitude 2.0 recorded in November 2012. The largest earthquake reported in New Jersey was a magnitude 5.3 recorded November 30, 1783. This earthquake was felt from New Hampshire to Pennsylvania.⁴³

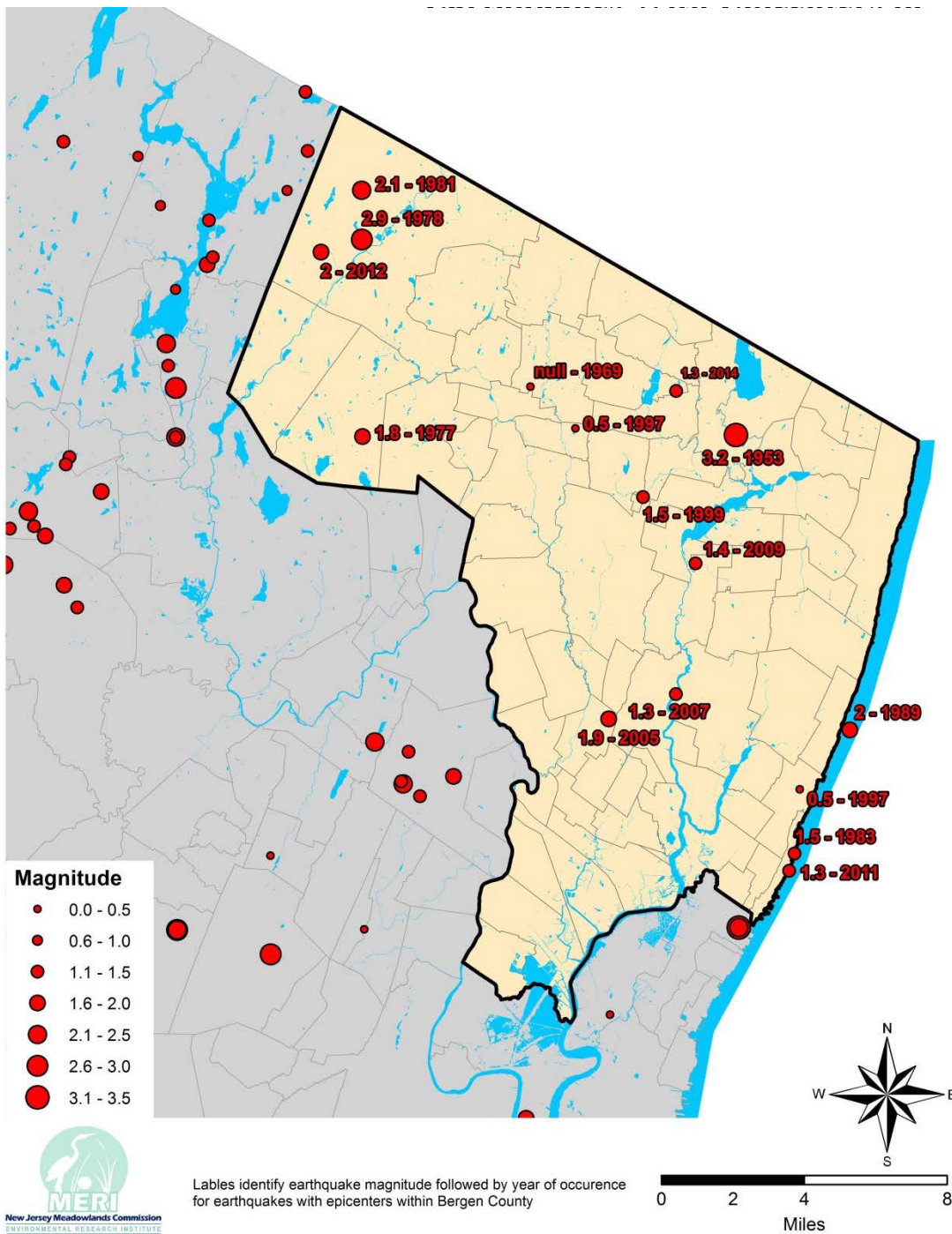


Figure 3.16: Earthquakes with Epicenters in Bergen County, NJ

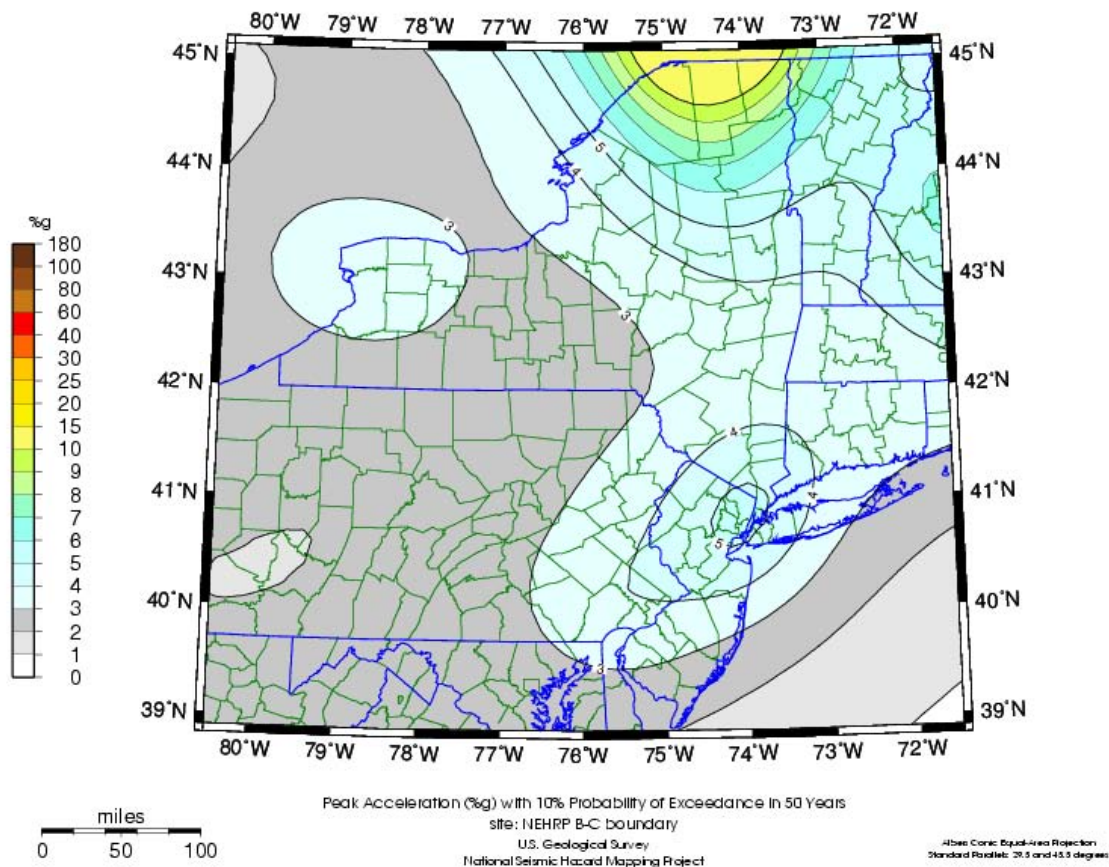


Figure 3.17: Peak Ground Acceleration with a 10% Probability of Exceedance in 50 Years

Landslides/ Mudslides

A landslide is a geological phenomenon which includes a wide range of ground movement, such as rock falls, deep failure of slopes and shallow debris flows. Although gravity's action on an over-steepened slope is the primary reason for a landslide, there are other contributing factors affecting the original slope stability such as a heavy rainfall event, earthquake, or human activity. The rate of landslide movement ranges from rapid to very slow. A landslide can involve large or small volumes of material. Material can move practically intact or be greatly deformed and rearranged. The slope may be nearly vertical or fairly gentle.

The USGS defines landslide as the movement of rock, debris or earth down a slope. The term landslide encompasses events such as rock falls, topples, slides, spreads and flows, such as debris flows commonly referred to as mudflows and mudslides. Landslides can be initiated by rainfall, earthquakes, volcanic activity, changes in groundwater, disturbance and change of a slope by man-made construction activities, or any combination of the above. Failure of a slope occurs when the force that is pulling the slope downward (gravity) exceeds the strength of the earth materials that compose the slope. Materials can move slowly, (millimeters per year) or can move quickly and disastrously, as is the case with debris-flows. Debris-flows can travel down a hillside of speeds up to 200 miles per hour (more commonly, 30 - 50 miles per hour), depending on the slope angle, water content, and type of earth and debris in the flow. These

flows are initiated by heavy, usually sustained, periods of rainfall, but sometimes can happen as a result of short bursts of concentrated rainfall in susceptible areas. Burned areas charred by wildfires are particularly susceptible to debris flows, given certain soil characteristics and slope conditions.

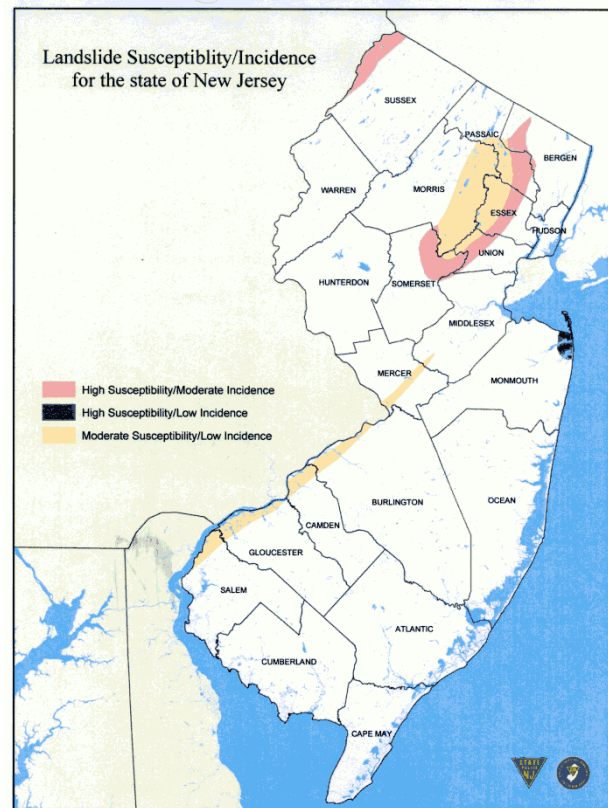


Figure 3.18: Landslide Susceptibility/Incidence for the State of New Jersey

Figure 3.18 was compiled based on attributes associated with 133 historic and recent landslide locations mapped by the New Jersey Geological Survey.^{xiv} The landslides have occurred in the northern and central part of the state and include slumps, debris flows, rockfalls and rockslides. Although New Jersey landslides are not as common as in other areas of the United States, they are a geologic hazard in areas with steep to moderate slopes or geologic units prone to failure. They cause damage to utilities, property, and transportation routes.

Damage from New Jersey landslides is likely in the hundreds of thousands of dollars. New Jersey landslides have caused fatalities and injuries, although none were recorded in Bergen County. The northwest portion of the County is the only area with steep hills that lead up to the Ramapo Mountains. Figure 3.18 depicts a small area in the northwest portion of Bergen County as having a high susceptibility to landslides, but a moderate incidence. The sharp cliffs of the New Jersey Palisades lift much of the County up from the eastern boundary with the Hudson River. Table 3.18 lists past occurrences of landslides in Bergen County.^{xiv} Figure 3.19 shows sites of past occurrences of landslides, particularly in the Palisades Cliffs area of the County, primarily due to weathering and heavy rain. Table 3.19 below lists the Bergen County critical facilities that are vulnerable to landslides.

Table 3.18 Past Occurrences of Landslides in Bergen County, New Jersey (1896 to 2012)

Date	Type	County	Municipality	Trigger	Damage	Fatalities	Injuries	Comments
4/18/1896	Rockfall	Bergen	Alpine	Weathering	No	0	0	A large boulder fell on the south side of the Blackledge Kearney House. It has an inscription on it that the rock fell on April 18, 1896.
7/5/1928	Rockslide	Bergen	Alpine	Heavy rain	Yes	0	0	Report of a large rockslide: 100 feet of Henry Hudson Drive destroyed, \$15,000 in damage in 1928. Estimated location.
5/17/1935	Rockslide	Bergen	Edgewater	Weathering	Yes	0	0	A 50-ton rock fell from the Palisades onto Rt. 5. The road was closed for five hours.
7/14/1936	Rockslide	Bergen	Alpine	Heavy rain	No	0	0	A small rock slide occurred in the Palisades Interstate Park near the Yonkers-Alpine Ferry. Triggered by heavy rain from thunderstorms. Estimated location.
1/10/1937	Rockslide	Bergen	Alpine	Weathering	No	0	0	A rockslide on the Alpine Approach Road closed traffic for one hour. Estimated location.
7/23/1938	Rockslide	Bergen	Alpine	Heavy rain	No	0	0	Large rockslide north of Twombly's Landing. Estimated location.
7/23/1938	Debris flow	Bergen	Lodi	Heavy rain	No	0	0	Report of Rt. 6 (now Rt. 46) closed for several hours by landslides after heavy rain. Estimated location.
7/23/1938	Debris flow	Bergen	Paramus	Heavy rain	No	0	0	Report of a landslide, road restricted to one lane by a landslide of mud and stone. Estimated location.
7/23/1938	Rockslide	Bergen	Alpine	Heavy rain	No	0	0	A rockslide on the Palisades creates the likeness of Hitler on the cliffs. Estimated location.
9/21/1938	Rockslide	Bergen	Alpine	Heavy rain	Yes	0	0	Landslides caused by the rain from The Great Hurricane of 1938 closed Henry Hudson Drive between Alpine and the boat basin. Estimated location.
4/1/1939	Rockslide	Bergen	Tenaflly Boro	Heavy rain	No	0	0	Heavy rain caused a rockslide on Henry Hudson Drive covering 20 feet of the road. Estimated location.
3/15/1947	Rockslide	Bergen	Englewood Cliffs	Weathering	No	0	0	Rockslide destroyed the likeness of Hitler on the Palisades. Estimated location.
8/6/1952	Rockslide	Bergen	Alpine	Heavy rain	Yes	0	0	Heavy rains caused a rockslide on the Alpine Approach Road blocking the road for 28 hours. Estimated location.
4/8/1957	Rockslide	Bergen	Alpine	Heavy rain/ weathering	Yes	0	0	Report of a rockslide triggered by weathering from rain and melting snow, Henry Hudson Drive closed for two days. Estimated location.
1/27/1959	Rockslide	Bergen	Tenaflly	Weathering	Yes	0	0	Large rockslide slid off the Palisades triggered by freezing and thawing, road closed. Estimated location.

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3/6/1959	Rockfall	Bergen	Alpine	Heavy rain	Yes	0	0	A rockfall blocked the Alpine Approach Road; heavy rains combined with early thawing caused the rockfall. Estimated location.
3/6/1959	Rockfall	Bergen	Fort Lee Boro	Heavy rain	Yes	0	0	A rockfall on Henry Hudson Drive just north of George Washington Bridge, traffic blocked, heavy rains and early thawing triggered rockfall. Estimated location.
8/6/1961	Rockslide	Bergen	Alpine	Weathering	Yes	0	0	Rockslide caused thousands of dollars in damage, 100 feet of road destroyed; rocks stopped 100 feet short of 50 people at the water's edge. Estimated location.
9/12/1971	Debris flow	Bergen	Wood Ridge	Heavy rain	No	1	0	A 24-year-old man was killed when the earth collapsed on the cliffside parking lot where he worked burying him under three feet of mud and rocks.
9/3/1974	Debris flow	Bergen	Fort Lee Boro	Heavy rain	No	0	0	A landslide on Rt. 4 blocked a westbound lane from the George Washington Bridge, estimated location.
3/18/1998	Rockslide	Bergen	Fort Lee Boro	Weathering	Yes	0	0	Rockslide on Rt. 95 Southbound local lanes, damage to one car from debris in the roadway, right lane closed to install fencing and remove debris.
8/5/2003	Debris flow	Bergen	Edgewater	Heavy rain	Unknown	0	0	Reported debris flow down the mountain triggered by heavy rain covered a 100-foot section of River Road.
7/23/2004	Rockfall	Bergen	Fort Lee Boro	Heavy rain	Unknown	0	0	Rockslide after heavy rain.
3/29/2005	Rockslide	Bergen	Englewood	Weathering	No	0	0	Rockslide on Rt. 95 Southbound local lanes, right lane was closed for 65 minutes to remove debris. Estimated location.
10/8/2005	Debris flow	Bergen	Lodi	Heavy rain	Yes	0	0	Landslide caused some property damage to a two family house on Farnham Avenue.
12/17/2005	Rockslide	Bergen	Alpine	Weathering	Yes	0	0	Significant rockslide, road closed for repairs, location taken at the toe of the landslide in the parking lot where a large boulder bounced into the Hudson River.
7/22/2006	Debris flow	Bergen	River Edge	Heavy rain/ broken sewer pipe	Yes	0	0	Heavy rain caused a storm sewer line to break triggering a debris flow which damaged a fence and closed Kinderkamack Road for two days.
4/15/2007	Debris flow	Bergen	Glen Rock	Heavy rain	Yes	0	0	Heavy rain triggered a debris flow on Rt. 208 Southbound near Lincoln Avenue which caused a multiple vehicle accident on the highway, road temporarily closed.
4/15/2007	Debris flow	Bergen	Hasbrouck Heights	Heavy rain	No	0	0	A small debris flow at the bottom of Passaic Avenue and Burr Place was triggered by heavy rain.
4/15/2007	Debris flow	Bergen	Lodi	Heavy rain	Yes	0	0	Landslide after heavy rain on Farnham Avenue. Some property damage, backyard covered in mud, 50 families displaced.

4/15/2007	Debris flow	Bergen	Lodi	Heavy rain	Yes	0	0	Landslide after heavy rain on Farnham Avenue. Some property damage, backyard covered in mud, 50 families displaced.
4/15/2007	Debris flow	Bergen	Lodi	Heavy rain	Yes	0	0	Landslide after heavy rain on Farnham Avenue. Some property damage, backyard covered in mud, 50 families displaced.
4/15/2007	Debris flow	Bergen	Lodi	Heavy rain	Yes	0	0	Landslide onto two family house on Farnham Avenue. Inside of house destroyed, 70-foot retaining wall collapsed, backyard covered in mud, 50 families displaced.
4/15/2007	Debris flow	Bergen	Alpine	Heavy rain	Yes	0	0	Heavy rain triggered a landslide on Henry Hudson Drive which was closed for one month, damage to road and retaining walls.
4/15/2007	Debris flow	Bergen	Alpine	Heavy rain	Yes	0	0	Heavy rain triggered a landslide on Henry Hudson Drive which was closed for one month, damage to road and retaining walls.
4/15/2007	Debris flow	Bergen	Alpine	Heavy rain	Yes	0	0	Heavy rain triggered a landslide on Henry Hudson Drive which was closed for one month, damage to road and retaining walls.
4/15/2007	Debris flow	Bergen	Alpine	Heavy rain	Yes	0	0	Heavy rain triggered a landslide on Henry Hudson Drive which was closed for one month, damage to road and retaining walls.
4/15/2007	Debris flow	Bergen	Fort Lee Boro	Heavy rain	Yes	0	0	Heavy rain caused a small landslide near Ross Dock causing damage to retaining walls. Henry Hudson Drive closed for one month.
4/15/2007	Debris flow	Bergen	Englewood Cliffs	Heavy rain	Yes	0	0	Heavy rain caused a landslide 150-feet wide near Ross Dock causing damage to retaining walls. Henry Hudson Drive closed for one month.
1/5/2009	Debris flow	Bergen	Tenaflly	Heavy rain/snowmelt	Yes	0	0	Rock slide on Henry Hudson Drive at Englewood Cliffs, Tenaflly border triggered by rain and snow. Road closed for cleanup. Estimated location.
9/16/2009	Debris flow	Bergen	Oakland	Heavy rain	Yes	0	0	Landslide after heavy rain during Hurricane Floyd, three houses damaged, 100 people evacuated. Estimated location.
5/5/2010	Rockfall	Bergen	Edgewater	Weathering	Yes	0	0	Rockslide closed Rt. 5 for two days at the Undercliff Avenue section. About 20 yards of rocks and some trees fell onto the road.
8/28/2011	Debris flow	Bergen	Englewood Cliffs Boro	Heavy rain	Yes	0	0	Debris flow of mud, rock and trees triggered by Tropical Storm Irene. Temporary road closure of River Road up to one week.

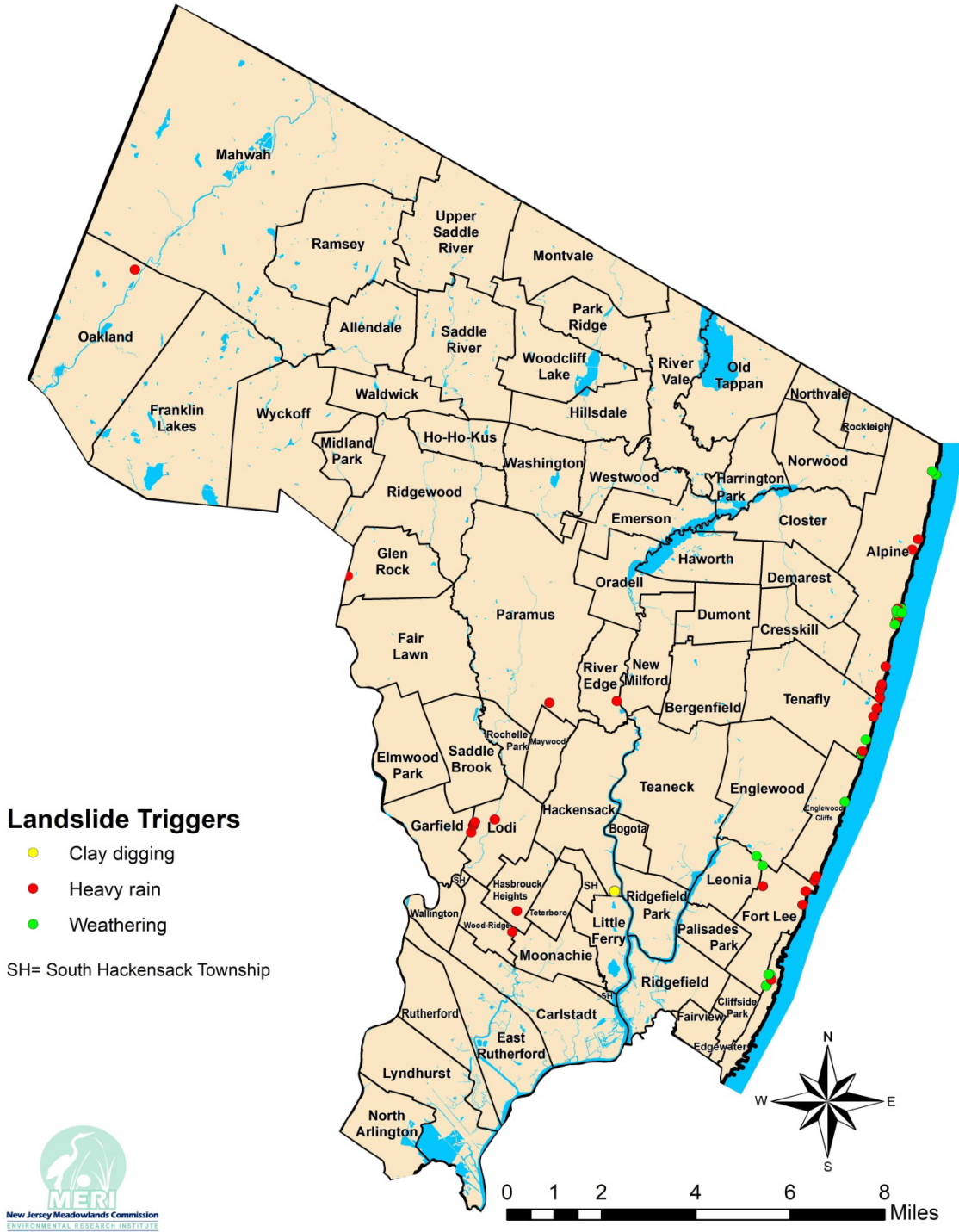
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8/28/2011	Debris flow	Bergen	Tenaflly Boro	Heavy rain	Yes	0	0	Debris flow of mud, rock and trees triggered by Tropical Storm Irene. Temporary road closure of River Road up to one week.
8/28/2011	Debris flow	Bergen	Alpine Boro	Heavy rain	Yes	0	0	Debris flow of mud, rock and trees triggered by Tropical Storm Irene. Temporary road closure of River Road up to one week.
5/12/2012	Rockslide	Bergen	Alpine Boro	Weathering	Yes	0	0	A large chunk of the Palisades Interstate Park's cliff wall broke off Saturday, May 12, at about 7:45 p.m., causing a rock slide into the Hudson River at the State Line Lookout. The Shore Trail was closed temporarily.
Unknown	Rockslide	Bergen	Alpine	Weathering	No	0	0	Historic rockslide area, thousands of rockslides and rockfalls over the years created a talus slope called the Giant Stairs.
Unknown	Debris flow	Bergen	Hackensack	Clay digging	No	1	0	A laborer, while digging in a brick yard pit, at Hackensack, was crushed to death by a mass of clay which fell upon him. Estimated location.
Unknown	Rockfall	Bergen	Edgewater Boro	Weathering	Unknown	0	0	Small rockfall.
Unknown	Rockfall	Bergen	Alpine	Weathering	Yes	0	0	Roadway damage. Estimated location.
Unknown	Rockfall	Bergen	Edgewater Boro	Weathering	Unknown	0	0	Small rockfall.
Unknown	Rockfall	Bergen	Tenaflly	Weathering	Yes	0	0	Roadway damage. Estimated location.
Unknown	Rockfall	Bergen	Fort Lee Boro	Weathering	Unknown	0	0	Small rockfall.
Unknown	Rockfall	Bergen	Tenaflly	Weathering	Yes	0	0	Roadway damage. Estimated location.
Unknown	Rockfall	Bergen	Alpine	Weathering	Yes	0	0	Roadway damage. Estimated location.

Table 3.19: Bergen County Critical Facilities Vulnerable to Landslides

Facility Name
Carlstadt
Carlstadt Pump Station (Barell Ave)
Edgewater
Colony Community Center
Edgewater Senior Center
Englewood Cliffs
St. Peter's College
Fort Lee
Bluff Rd. Pump Station
Fort Lee Historical Park
Lewis F. Cole Middle School
Pump Station (Main St)
Pump Station (Palisades)
Garfield
Kidz University
New Concepts For Living
Hackensack
Bergen County Police-Patrol Unit
Hillsdale
Woodcliff Lake Dam
Little Ferry
Bergen County Utilities Authority
Depyster Creek Pump
Main St. Pump Station
Willow Lake Pump Station
Lodi
D.P.W Yard

Midland Park
D.P.W Garage
DEP Dam
DEP Dam (Godwin Ave)
Kentshire Apartments
North Arlington
Daniel Morris Firehouse Co.
North Arlington D.P.W
North Arlington EMS
North Arlington/Lyndhurst Joint Waste Water
PSE&G Power Sub-Station (North Arlington)
Old Tappan
Lake Tappan
Lake Tappan Dam
Tennessee Gas Pipeline
Pipeline
Ramsey
Crystal Spring Lake Dam
Ridgefield
Wolf Creek Culverts and Bridges
River Vale
Town Hall
Washington Township
Immaculate Heart Academy (High School)
Jesse F. George School
Washington School (Elementary)
Washington Volunteer Fire Department
Woodcliff Lake
Dam



This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.

Figure 3.19: Bergen County, NJ Landslides

High Winds/ Tornadoes

The American Meteorological Society defines a tornado as a violently rotating column of air, in contact with the ground, either pendant from a cumuliform cloud or underneath a cumuliform cloud, and often (but not always) visible as a funnel cloud.⁴⁶

Tornadoes vary in intensity regardless of shape, size, and location, though strong tornadoes are typically larger than weak tornadoes. Tornado intensities are rated by the damage on a scale known as the Enhanced Fujita Scale, found in Table 3.20.⁴⁷

Figure 3.20 illustrates the number of tornadoes per 1,000 square miles of the northern New Jersey area to be 1-5.⁴⁹ Figure 3.21⁵⁰ and Figure 3.22⁵¹ indicate that in Zone II, in which Bergen County is located, community shelters are the preferred method of protection from high winds events, as homes could also be susceptible to a hurricane. Based on historic facts, the probability of a tornado in Bergen County is low.

Table 3.20: The Enhanced Fujita Scale

EF-Scale Number	Intensity Phrase	Wind Speed	Typical Observations
EF0	Gale tornado	65-85 mph	Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
EF1	Moderate tornado	86-110 mph	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	Significant tornado	111-135 mph	Considerable damage. Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	Severe tornado	136-165 mph	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	Devastating tornado	166-200 mph	Devastating damage. Whole frame houses Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF5	Incredible tornado	Over 200 mph	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m (109 yd); high-rise buildings have significant structural deformation; incredible phenomena will occur.

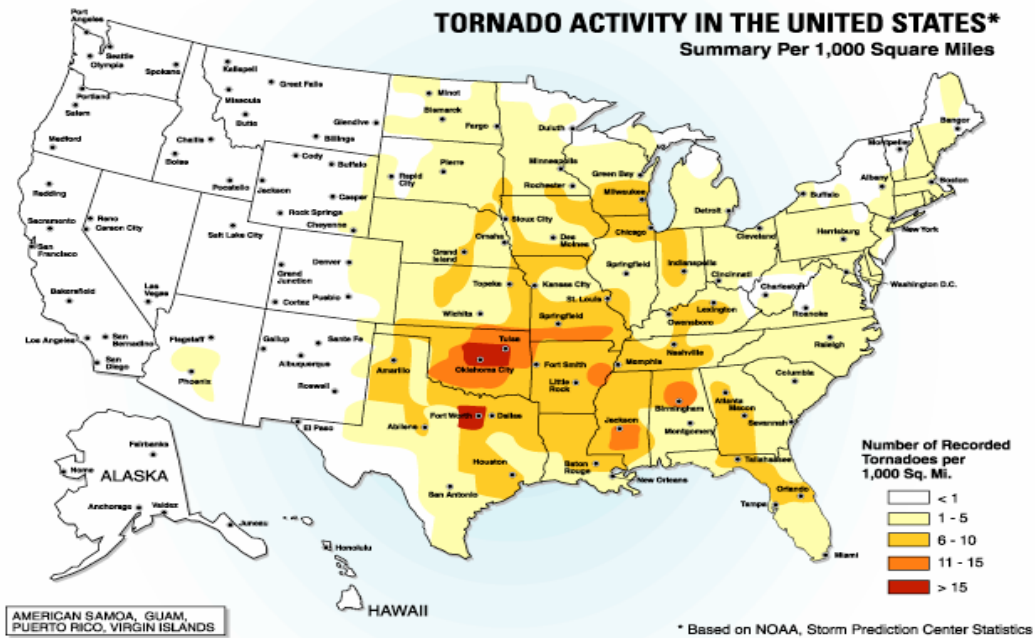
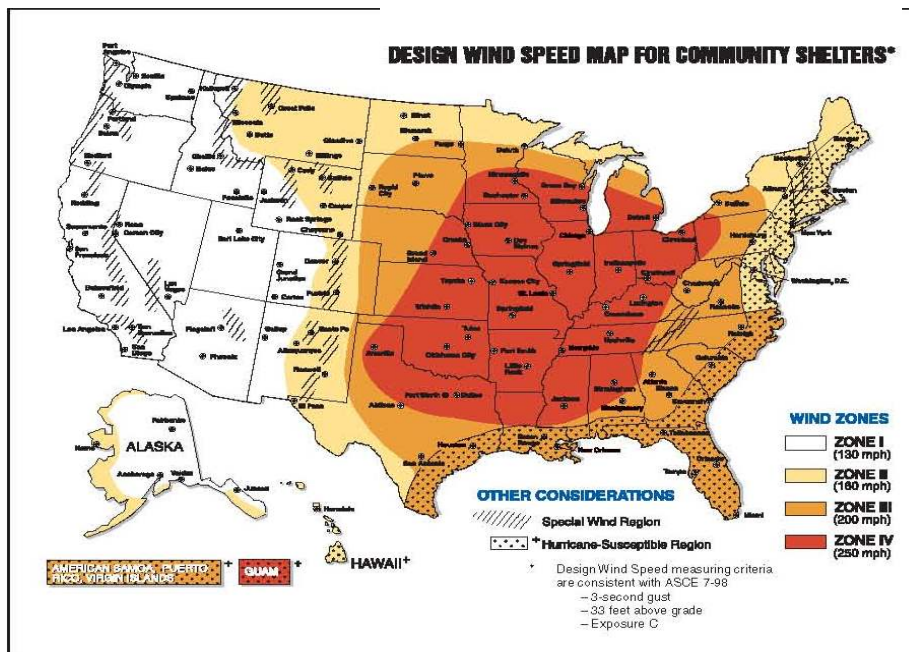


Figure 3.20: Tornado Activity in the United States



Source: ASCE 7-98

Figure 3.21: Design Wind Speed Map for Community Shelters

Figure 3.22: Tornado Risk by Wind Zone

		WIND ZONE (See Figure 1.2)			
		I	II	III	IV
NUMBER OF TORNADOES PER 1,000 SQUARE MILES (See Figure 1.1)	<1	LOW RISK	LOW RISK ★	LOW RISK ★	MODERATE RISK
	1 - 5	LOW RISK	MODERATE RISK ★	HIGH RISK	HIGH RISK
	6 - 10	LOW RISK	MODERATE RISK ★	HIGH RISK	HIGH RISK
	11 - 15	HIGH RISK	HIGH RISK	HIGH RISK	HIGH RISK
	>15	HIGH RISK	HIGH RISK	HIGH RISK	HIGH RISK

LOW RISK	MODERATE RISK	HIGH RISK
Need for high-wind shelter is a matter of homeowner preference	Shelter should be considered for protection from high winds	Shelter is preferred method of protection from high winds

★ Shelter is preferred method of protection from high winds if house is in hurricane-susceptible region

Tornado season in New Jersey is generally March through August, although tornadoes can occur at any time during the year, according to the *State of New Jersey 2014 State Hazard Mitigation Plan*.⁵² Since 1950, there have been eight recorded instances of tornadoes touching down in Bergen County. Two of the most destructive tornadoes occurred on July 10, 1989 in Fair Lawn causing approximately five million dollars in damage. The tornadoes were rated F0 on the Fujita Scale.

Bergen County is in a low risk zone for tornadoes and high winds, but is vulnerable to tornado damage due to the dense development in the County. All municipalities in Bergen County are equally likely to be impacted by high winds or a tornado. High winds will occur as part of severe weather events in Bergen County and across the State of New Jersey.

According to the 2014 NJ State Mitigation Plan, there have been 144 tornado touch-downs in New Jersey from 1950-2012, with at least one in each county.⁵³ High wind events that have impacted Bergen County are detailed in Table 3.22⁵⁴.

Table 3.21: Number of Historic Confirmed Tornado Touch-Downs in New Jersey (1950-2012) by County

County	Number of Tornado Touch-downs
Atlantic	7
Bergen	8
Burlington	15
Camden	6
Cape May	8
Cumberland	9
Essex	2
Gloucester	8
Hudson	1
Hunterdon	7
Mercer	8
Middlesex	10
Monmouth	6
Morris	6
Ocean	11
Passaic	3
Salem	5
Somerset	4
Sussex	5
Union	10
Warren	5
Total	144

Source: ONJSC Rutgers University 2013a

Table 3.22: High Wind Incidents Affecting Bergen County

Date(s) of Events	Event Type	Counties Affected	Description
November 20, 1989	Derecho	Statewide	A line of thunderstorms formed along a cold front over north-central Pennsylvania in the late afternoon on November 20. The storms built south along the front as it moved across Pennsylvania, southeastern New York State, New Jersey, and adjacent portions of Maryland and Delaware. The squall line produced a continuous swath of damaging wind that extended more than 250 miles from the Allegheny Mountains to the New Jersey coast and Long Island. Maximum wind gusts exceeded 58 mph and there were numerous gusts measuring at greater than 70 mph. In New Jersey, wind gusts of 86 mph were recorded in the southern portion. A steeple was blown off a church in Trenton and a roof was blown off of a high-rise apartment building in Burlington County. A falling tree seriously injured a man in Princeton. Overall, this event caused more than \$20 million in damages to Pennsylvania, New Jersey, and New York.
September 7, 1998	Derechos ("The Labor Day Derechos of 1998")	Northern New Jersey	A derecho formed over western New York State and moved east in the early morning on September 7. Wind damage occurred in much of the area, with some of the worst storm damage occurring in a band across western and central New York State. Along the path of the derecho, tens of thousands of trees were blown down and over 1,000 homes and businesses were damaged. Damage was estimated at approximately \$130 million. Many homes and businesses were without power.
January 3, 2010	Strong Winds	Statewide	Strong and gusty west to northwest winds occurred for nearly twenty-four hours across New Jersey. Peak wind gusts averaged around 50 mph, with some gusts of 70 mph in the higher terrain of Sussex County. Strong winds downed weak trees, tree limbs, and power lines resulting in power outages. About 1,000 homes and businesses lost power in Monmouth and Ocean Counties.
March 13, 2010	High Winds	Statewide	Strong to high winds downed thousands of trees and tree limbs, hundreds of telephone poles. Over half a million utility customers throughout the state lost power. Dozens of homes were damaged by fallen trees, a few other homes were damaged by the high winds themselves and crane damage occurred in Atlantic City. There were three reported injuries. A 78 mph wind gust was reported at Robbins Reef at 7:18 pm.
December 1, 2010	Wind Gusts	Bergen, Passaic	A wind gust to 59 mph was reported at Teterboro airport in the early afternoon of December 1. Strong winds knocked down some trees and tree limbs which caused scattered power outages across the region.
December 26, 2010	High Winds	Statewide	Strong to high winds that started in the afternoon of the winter storm on December 26 persisted into the next evening. Peak wind gusts were around 50 mph, except along some shore points and in the higher terrain of Sussex County where gusts reached 60 mph and greater.

Source: NCDC 2013; ONJSC Rutgers University 2013; SPC 1998; SPC 2012

Wildfire

Bergen County has a relatively low probability of being affected by wildfires, as indicated by Figure 3.23. The Ramapo Mountain State Forest in Mahwah and Palisades Interstate Park in Fort Lee, Englewood Cliffs, Tenafly and Alpine are considered to be moderate wildfire hazards and the Meadowlands marsh grasses and old landfills are deemed to be a high hazard area. The remainder of the County is developed, lowering the risk of wildfires. A great deal of landfill closure work has been taking place in the New Jersey Meadowlands, further reducing the potential for future wildfires in Bergen County.

Wildfires generally start and grow depending on a combination of 3 factors: fuel, topography, and weather. Dry plant debris like leaves and branches, steep slopes which allow flames to climb uphill, and any of a variety of weather conditions that may start or spread a fire including strong winds, thunderstorms, or dry, drought like conditions.

Although wildfires can occur at any time during the year, most destructive fires in New Jersey occur during the spring. The weather conditions provide optimal conditions for the rapid spread of wildfires.

Table 3.23 lists Bergen County critical facilities that are vulnerable to wildfire.

Table 3.23: Bergen County Critical Facilities Vulnerable to Wildfires

Facility Name
Carlstadt
Carlstadt Presbyterian
Pumping Station 1 (Jony Drive)
Demarest
Academy of Holy Angels School (Shelter)
Anderson Avenue
County Road
County Road School
Demarest Cooperative
Demarest D.P.W
Demarest Fire Department
Demarest Middle School/Shelter
Hardenburgh Ave
Hardenburgh Ave. Bridge
Luther Lee Emerson School
Northern Valley Catholic Academy
Northern Valley Regional High School (Shelter)
Piermont Road
East Rutherford
Alfred S. Faust Intermediate School
Boiling Springs Gardens
East Rutherford Building Department
East Rutherford Fire Department-Station #13
East Rutherford Fire Dept.-Carlton Hill Firehouse
East Rutherford Municipal Building
East Rutherford Police Headquarters

McKenzie School
NJSEA Fire Station
St. Joseph's Church School
Edgewater
Colony Community Center
Comfort Inn Motel
DPW Annex
Edgewater Boro Hall and Police Dept.
Edgewater Community
Edgewater D.P.W
Edgewater Library
Edgewater Multi-Plex
Edgewater Municipal
Edgewater
Edgewater Post Office
Edgewater Senior Center
Edgewater Senior Center
Edgewater Volunteer 1st Aide Squad
Edgewater Water Pollution Control Facility
EVG School
Holy Rosary Church
Lord's Grace Church
Mitsuwa
Montessori School
Palisade Learning Center
Prime Time Learning Center
Sewer Plant #3
Sunrise Assisted Living
Transco Gas Pipeline
Waterford Towers

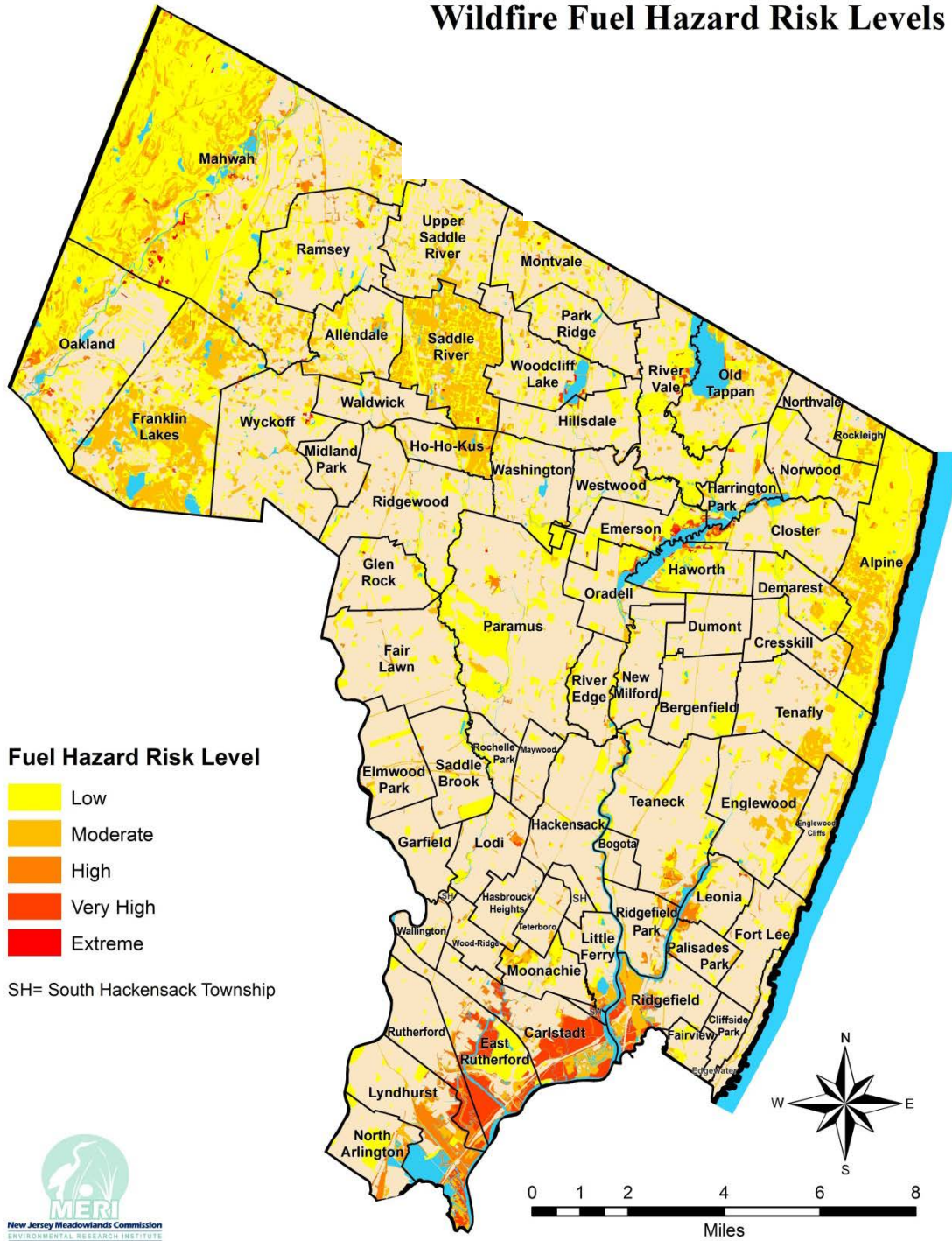
Elmwood Park
Elmwood Park Water Distribution Center
Emerson
Armenian Home
Assumption Academy
Emeritus at Emerson
Emerson Dept. of Public Works
Villano Elementary School
Englewood Cliffs
Borough Hall Court and Police Facility
Citibank (Citigroup) NA
Communication Tower
Department of Public Works
Englewood Cliffs Fire Dept.
PSEG Substation
Pump Station (Chestnut St)
Pump Station (Hollywood
Pump Station (Jane Dr)
Pump Station (Lyncrest Rd)
Pump Station (Roberts Rd)
St. Peter's College
Unilever Best Foods
Unilever Best Foods NA
Volunteer Ambulance Corps
Fairview
Department of Public Works
Fairview Police Department/ Municipal Co.
Walker St. Firehouse
Fort Lee
PSEG Substation
Public School #4
Franklin Lakes
Becton Dickinson and Co.
Franklin Lakes Volunteer Ambulance Bldg.
Garfield
Bergen Arts/ Science Charter School
Garfield Group Home
Happy Times Daycare
Kidz University
New Concepts For Living
Susana's Day Care
Glen Rock
Municipal Complex
Ridgewood Pollution Plant
Hackensack
Bergen County Probation
Haworth
Haworth Ambulance Corps

Haworth DPW Bldg. #1
Haworth DPW Bldg. #2
Haworth Municipal Complex
United Water Treatment Facility and Reservoir
Hillsdale
Woodcliff Lake Dam
Ho-Ho-Kus
Hermitage
Little Ferry
Depyster Creek Pump
Early Learners Child Center
Little Ferry Hook & Ladder Fire Dept.
Little Ferry Nursery School
Losen Slote Drain Station
Memorial School
Scientific Design
Scientific Design
Washington School
Lodi
D.P.W Yard
Mahwah
Dept. of Public Works/ DPW Garage
Fire Co #3
Fire Company #1
International Crossroads
Joyce Kilmer School
Lenape Meadows School
Mahwah High School
Ramapo Ridge Middle
Midland Park
Godwin School
Highland School
New Milford
New Milford Vol. Ambulance Corp.
River Rd.
United Water Resource Landscaping Yard
North Arlington
Corsi House
Daniel Morris Firehouse Co.
Jefferson School
Jefferson School
North Arlington Health and Senior Centers
North Arlington High School
North Arlington Middle
PSE&G Power Sub-Station (North Arlington)
Queen of Peace Church
Queen of Peace Grammar School
Queen of Peace High School

Washington School
Northvale
BCUA Sanitary Sewer Pump Station
Northvale Sanitary Pump Station
Norwood
Norwood Fire House
Old Tappan
Bi-State Plaza Shopping
Korean Presbyterian Church of the Palisades
Old Tappan Commons Senior Housing
Old Tappan DPW
Old Tappan Exxon
Old Tappan Fire
Old Tappan First Aid Corps
Old Tappan Police Headquarters
Old Tappan Public Library
Prince of Peace Church
Rockland Electric (Con Ed) Substation
Saint Pius X Roman Catholic Church
Sunrise Assisted Living
Tom's Automotive Specialists (Citco)
Trinity Reformed Church
Paramus
Arcola Power Sub Station
Orchard Hills Power Sub Station
Paramus Park Power Sub Station
Spring Valley Road Power Sub Station
Woodland Ave Power Sub Station
Ramsey
NJ Transit Train Station
Ramsey Municipal Bldg.
Ramsey Public Library
Ridgefield
New Jersey Turnpike
NJ State Highway 46
Ridgefield Park
Active Chemical Co. Number Four
EMS, Rescue, Fire Chief's, Backup EOC
Friendship Hook & Ladder Co. Number One
Hazelton Truck Co. #2
Hose Co. Number One
NYS&W Fuel Depot
Overpeck Engine Co. Number Two
Westview Hose Co. Number Three
Saddle River
Calicooneck Road
South Hackensack

Fire Headquarters
Leuning Street
Phillips Avenue
Public Service Electric Sub Station
Restaurant Depot
Town Hall Complex
Town Hall Complex
Town Hall Complex
Town Hall Complex
Wesley Street
Teaneck
D.P.W Yard
Fire Dept. Headquarters
Municipal Building
Upper Saddle River
Police Headquarters
Waldwick
Franklin Turnpike
Waldwick Train Station
Wallington
Emergency/ Ambulance
Farmland Dairies
Washington Township
Twp. of Washington Police Dept.
Twp. of Washington Police Dept. Communications
Washington Volunteer Fire Department
Westwood
Hackensack UMC at Pascack Valley
Kurt Versen Company
Lanman & Kemp-Barclay &
Wood-Ridge
Assumption Church
Borough Hall
Catherine E. Doyle School
Department of Public Works
Wood-Ridge High School
Woodridge Intermediate School
Wyckoff
Christian Health Care Center
Coolidge School
Eisenhower School
Wyckoff Public Library

Wildfire Fuel Hazard Risk Levels



This map was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.

Figure 3.23: Wildfire Fuel Hazard Risk Levels Based on 2002 LU/LC
Bergen County, NJ

Hurricane/ Tropical Storm

Hurricane season normally extends from June 1 through November 30 in New Jersey. The peak potential for hurricane and tropical storm activity runs from mid-August through the end of October.⁵⁵

The combination of warm ocean water, humid air and consistent winds contributes to the formation of tropical cyclones – low-pressure systems of circulating winds, clouds and thunderstorms – over the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico. As they gain strength, these cyclones are classified as tropical depressions, tropical storms, or hurricanes. A tropical depression has maximum sustained wind speeds of 38 miles per hour (mph) or less. A tropical storm has maximum sustained wind speeds of 39 to 73 mph. The Saffir-Simpson Hurricane Scale rates hurricane strengths, from Category 1 to Category 5 (see Table 3.24 below.)

Table 3.24: Saffir-Simpson Hurricane Scale (Source: NOAA 2013)

Category	Sustained Winds	Types of Damage Due to Hurricane Winds
1	74-95 mph	Very dangerous winds will produce some damage: Homes with well-constructed frames could have damage to roof, shingles, vinyl siding, and gutters. Large branches of trees will snap and shallowly rooted trees may be toppled. Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96-110 mph	Extremely dangerous winds will cause extensive damage: Homes with well-constructed frames could sustain major roof and siding damage. Many shallowly rooted trees will be snapped or uprooted and block numerous roads. Near-total power loss is expected with outages that could last from several days to weeks.
3 (Major)	111-129 mph	Devastating damage will occur: Homes with well-built frames may incur major damage or removal of roof decking and gable ends. Many trees will be snapped or uprooted, blocking numerous roads. Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (Major)	130-156 mph	Catastrophic damage will occur: Homes with well-built frames can sustain severe damage with loss of most of the roof structure and/or some exterior walls. Most trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (Major)	>157 mph	Catastrophic damage will occur: A high percentage of framed homes will be destroyed, with total roof failure and wall collapse. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Figure 3.24: Empirical Probability of a Named Storm

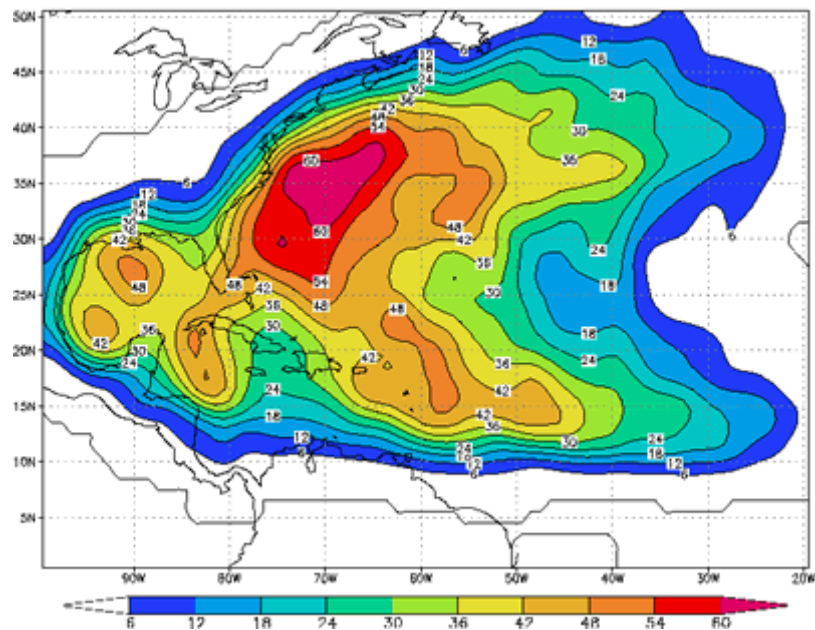


Figure 3.24 indicates the probability of a tropical storm or hurricane affecting a particular area sometime during the June to November hurricane season.⁵⁶ The years 1944 to 1999 are utilized in the analysis along with counted hits when a storm or hurricane was within about 100 miles (165 km). For example, people living in New Orleans, Louisiana have about a 40% chance (the green-orange color) per year of experiencing a strike by a tropical storm or hurricane. For the United States, the locations that have the highest chances of a tropical storm or hurricane occurrence are Miami, Florida with a 48% chance and Cape Hatteras, North Carolina with a 48% chance. Just outside of the United States, San Juan, Puerto Rico has a 42% chance of a tropical storm or hurricane occurring.⁵⁷ Table 3.25 lists the past occurrences of tropical storms and hurricanes in Bergen County from 1850-2012.⁵⁸

Table 3.25: Past Occurrences of Tropical Storms and Hurricanes in Bergen County, NJ from 1950 to 2012

Date(s) of Event	Event Type	Counties Affected	Description
September 11-12, 1950	Hurricane Dog	Statewide	Average rainfall amounts were 1.07 inches. Maximum rainfall total was 4.34 inches at the Canton station.
August 20-21, 1950	Hurricane Able	Statewide	Average rainfall amounts were 1.29 inches. Maximum rainfall total was 3.5 inches at the Freehold Marlboro (Monmouth County) station.
August 31-September 1, 1952	Hurricane Able	Statewide	Average rainfall amounts were 2.42 inches. Maximum rainfall total was 5.64 inches at the Oak Ridge Reservoir (Morris County) station.
February 4, 1952	Tropical Storm	Statewide	Average rainfall amounts were 1.13 inches. Maximum rainfall total was 1.99 inches at the Vineland station.
August 14-15, 1953	Hurricane Barbara	Statewide	Average rainfall amounts were 1.23 inches. Maximum rainfall total was 5.98 inches at the Tuckerton (Ocean County) station.
October 15-16, 1954	Hurricane Hazel	Statewide	Average rainfall amounts were 0.35 inch. Maximum rainfall total was 1.24 inches at the Pleasantville station.
September 10-11, 1954	Hurricane Edna	Statewide	Average rainfall amounts were 3.55 inches. Maximum rainfall total was 6.38 inches at the Lakehurst station.
August 30-31, 1954	Hurricane Carol	Statewide	Average rainfall amounts were 2.61 inches. Maximum rainfall total was 5.25 inches at the Midland Park (Bergen County) station.
September 19-20, 1955	Hurricane Ione	Statewide	Average rainfall amounts were 0.65 inch. Maximum rainfall total was 4.17 inches at the Berlin station.
August 17-19, 1955	Hurricane Diane	Statewide	Average rainfall amounts were 2.91 inches. Maximum rainfall total was 8.1 inches at the Sussex (Sussex County) station.
August 12-13, 1955	Hurricane Connie	Statewide	Average rainfall amounts were 6.28 inches. Maximum rainfall total was 10.89 inches at the Canistear Reservoir (Sussex County) station.
September 27-28, 1956	Hurricane Flossy	Statewide	Average rainfall amounts were 0.47 inch. Maximum rainfall total was 3.41 inches at the Shiloh station.
August 28-29, 1958	Hurricane Daisy	Statewide	Average rainfall amounts were 0.06 inch. Maximum rainfall total was 0.4 inch at the Belmar/Bass River State Forest station.
September 27-28, 1958	Hurricane Helene	Statewide	Average rainfall amounts were 1.68 inches. Maximum rainfall total was 3.41 inches at the Shiloh station.
September 30-October 1, 1959	Hurricane Gracie	Statewide	Average rainfall amounts were 0.99 inch. Maximum rainfall total was 2.87 inches at the Oak Ridge Reservoir (Morris County) station.
July 10-11, 1959	Hurricane Cindy	Statewide	Average rainfall amounts were 0.9 inch. Maximum rainfall total was 8.43 inches at the Belleplains SF (Cape May County) station.
September 12, 1960	Hurricane Donna	Statewide	Avg rainfall amounts were 4.91 inches. Maximum rainfall total was 8.99 inches at the Hammonton (Atlantic County) station. Maximum wind gust of 100 mph was observed in

			Wildwood (Cape May County). Max storm surge of seven feet was reported in Long Branch (Monmouth County). Tides were 5.7 feet above normal. Considerable damage to piers and beach front homes. Hurricane Donna caused three fatalities and \$6.9 million in damages in New
July 29-30, 1960	Hurricane Brenda	Statewide	Average rainfall amounts were 3.65 inches. Maximum rainfall total was 6.27 inches at the Cedar Grove station.
September 20-21 and 25, 1961	Hurricane Esther	Statewide	Average rainfall amounts were 1.62 inches. Maximum rainfall total was 5.6 inches at the Tuckerton (Ocean County) station. Maximum wind gust of 68 mph was observed in Atlantic City (Atlantic County). High surf and rip tides were also reported.
August 28-29, 1962	Hurricane Alma	Statewide	Average rainfall amounts were 2.14 inches. Maximum rainfall total was 4.85 inches at the Pemberton (Burlington County) station. Maximum wind gusts were below 20 mph. High surf and rip tides were reported.
October 16-18, 1964	Hurricane Isabell	Statewide	Average rainfall amounts were 0.72 inch. Maximum rainfall total was 2.01 inches at the Belleplain SF (Cape May County) station. Maximum wind gusts were below 20 mph.
September 13-14, 1964	Hurricane Dora	Statewide	Average rainfall amounts were 0.44 inch. Maximum rainfall total was 2.9 inches at Hightstown station. Maximum wind gusts were below 20 mph. High surf and rip tides were reported.
June 12-13, 1966	Hurricane Alma	Statewide	Average rainfall amounts were 0.18 inch. Maximum rainfall total was 0.91 inch at the Bass River State Forest station. Maximum wind gusts of 26 mph in Atlantic City (Atlantic County). Maximum storm surge of 4.5 feet was reported in Atlantic City (Atlantic County).
September 15-17, 1967	Hurricane Doria	Statewide	The avg rainfall for this event was 0.26 inch, with a max of 0.94 inch at the Lakehurst station. A maximum wind gust of 39 mph in Atlantic City (Atlantic County). High surf and rip tides were associated with this storm. Three boaters drowned on their way to Boston due to this event.
August 19-21, 1969	Hurricane Camille	Statewide	The average rainfall for this event was 0.19 inch, with a maximum of 1.25 inches at the Fortescue (Cumberland County) station. Maximum wind gusts were below 20 mph.
September 8-9, 1969	Hurricane Gerda	Statewide	The average rainfall for this event was 0.58 inch, with a maximum total of 1.78 inches at the Fortescue (Cumberland County) station. Maximum wind gusts were below 20 mph.
August 27-29, 1971	Hurricane Doria	Statewide	The average rainfall for this event was 7.09 inches, with a maximum total of 10.29 inches at the Little Falls (Passaic County) station. A maximum wind gust of 54 mph was reported at Atlantic City (Atlantic County). A maximum storm surge of 5.3 feet was also reported at Atlantic City (Atlantic County). Total damages in New Jersey were estimated at \$772 M. Three deaths were attributed to this event.
October 2-4, 1971	Hurricane Ginger	Statewide	The average rainfall for this event was 0.23 inch, with a maximum total of 1.64 inches at the Sea Brooks Farms (Cumberland County) station. Maximum wind gusts were below 20 mph. High surf and rip tides were associated with this storm.
June 21-25, 1972	Hurricane Agnes	Statewide	The average rainfall for this event was 3.4 inches, with a maximum total of 6.44 inches at the Canton station. Maximum wind gusts were below 20 mph. Total damages in New Jersey were estimated at \$15 M. One death was attributed to this storm.
September 3-4, 1972	Hurricane Carrie	Statewide	The average rainfall for this event was 0.28 inch, with a maximum total of 1.73 inches at the Cape May (Cape May County) station. Maximum wind gusts were below 20 mph.

September 24-28, 1975	Hurricane Eloise	Statewide	The average rainfall for this event was 5.45 inches, with a maximum total of 8.94 inches at the Hightstown (Mercer County) station. Maximum wind gusts were below 20 mph. High surf and rip tides were associated with this event.
June 30-31, 1975	Hurricane Amy	Statewide	The average rainfall for this event was 0.08 inch, with a maximum total of 0.63 inch at the Morris Plains (Morris County) station. Maximum wind gusts were below 20 mph.
October 27-28, 1975	Hurricane Hallie	Statewide	The average rainfall for this event was 0.02 inch, with a maximum of 0.3 inch at the Fortescue station. Maximum wind gusts were below 20 mph.
August 9-10, 1976	Hurricane Belle	Statewide	The average rainfall for this event was 2.66 inches, with a maximum of 5 inches at the Mays Landing (Atlantic County) station. A maximum wind gust of 90 mph was reported at Ship Bottom. A maximum storm surge of 8.85 feet was reported in Atlantic City (Atlantic County). New Jersey had approximately \$50 million in damages from this event.
September 16-18, 1976	Tropical Depression #8	Statewide	The average rainfall for this event was 1.32 inches, with a maximum of 3.44 inches at the Oak Ridge Reservoir (Morris County) station. Maximum wind gusts were below 20 mph.
September 7-8, 1977	Hurricane Clara	Statewide	The average rainfall for this event was 0.11 inch, with a maximum total of 1.03 inches at the Jersey City (Hudson County) station. Maximum wind gusts were below 20 mph.
September 10-11, 1977	Hurricane Babe	Statewide	The average rainfall for this event was 0.04 inch, with a maximum total of 1.22 inches at the Hammonton (Atlantic County) station. Maximum wind gusts were below 20 mph.
July 15-16, 1979	Hurricane Bob	Statewide	The average rainfall for this event was 0.26 inch, with a maximum total of 1.92 inches at the Hightstown (Atlantic County) station. Maximum wind gusts were below 20 mph.
July 29-30, 1979	Hurricane Claudette	Statewide	The average rainfall for this event was 0.37 inch, with a maximum of 2.05 inches at the Princeton Water Work station. Maximum wind gusts were below 20 mph.
September 14-16, 1979	Hurricane Frederic	Statewide	The average rainfall for this event was 0.47 inch, with a maximum of 1.25 inches at the High Point Park (Sussex County) station. Maximum wind gusts were below 20 mph.
September 6-8, 1979	Hurricane David	Statewide	The average rainfall for this event was 2.94 inches, with a maximum of 5.83 inches at the Ringwood (Passaic County) station. A maximum wind gust of 54 mph was reported in Trenton (Mercer County). High surf and rip tides were associated with this storm. This event caused a tornado outbreak in New Jersey.
November 15-17, 1981	Tropical Depression #12	Statewide	The average rainfall for this event was 0.48 inch, with a maximum of 1.35 inches at the Cape May (Cape May County) station. Maximum wind gusts were below 20 mph.
June 19-20, 1982	Tropical Storm #2	Statewide	The average rainfall for this event was 0.02 inch, with a maximum of 0.27 inch at the Atlantic City (Atlantic County) station. Maximum wind gusts were below 20 mph.
September 30-October 2, 1983	Hurricane Dean	Statewide	The average rainfall for this event was 1.25 inches, with a maximum of 2.35 inches at the Newark (Essex County) station. Maximum wind gusts were below 20 mph.
July 26-27, 1985	Hurricane Bob	Statewide	The average rainfall for this event was 1.92 inches, with a maximum of 3.52 inches at the Canistear Reservoir (Sussex County) station. Maximum wind gusts were below 20 mph.
August 19-20, 1985	Hurricane Danny	Statewide	The average rainfall for this event was 0.2 inch, with a maximum of 2.32 inches at the Cape May (Cape May County) station. Maximum wind gusts were below 20 mph.

September 23-25, 1985	Hurricane Henri	Statewide	The average rainfall for this event was 0.51 inch, with a maximum of 2.27 inches at the Belvidere (Warren County) station. Maximum wind gusts were below 20 mph.
September 27-28, 1985	Hurricane Gloria	Statewide	The average rainfall for this event was 3.69 inches, with a maximum of six inches at the Charlotteburg Reservoir (Passaic County) station. A maximum wind gust of 45 mph was reported at Ocean City (Cape May County). A maximum storm surge of 1.4 feet was reported at Ventor City Pier. Gloria paralleled the coast of New Jersey, downing trees and leaving 230,000 people without power. Approximately 100,000 coastal residents were evacuated. New Jersey had approximately \$14.7 million in damages from this event.
June 8-9, 1986	Hurricane Andrew	Statewide	The average rainfall for this event was 0.14 inch, with a maximum of 0.6 inch at the Pottersville (Morris County) station. Maximum wind gusts were below 20 mph.
August 18-19, 1986	Hurricane Charley	Statewide	The average rainfall for this event was 0.89 inch, with a maximum of 3.32 inches at the Split Rock Pond station. A maximum wind gust of 54 mph was reported in Atlantic City (Atlantic County). A maximum storm surge of 1.65 feet was reported at Atlantic City (Atlantic County). Two deaths were attributed to this event.
August 7-8, 1988	Hurricane Alberto	Statewide	The average rainfall for this event was 0 inch, with a maximum total of 0.7 inch at the High Point Park (Sussex County) station. Maximum wind gusts were below 20 mph.
August 29-30, 1988	Hurricane Chris	Statewide	The average rainfall for this event was 0.88 inch, with a maximum total of 2.19 inches at the High Point Park (Sussex County) station. Maximum wind gusts were below 20 mph.
September 22-24, 1989	Hurricane Hugo	Statewide	The average rainfall for this event was 0.43 inch, with a maximum total of 2.83 inches at the Belleplain SF (Cape May County) station. Maximum wind gusts were below 20 mph.
October 14-15, 1990	Hurricane Lili	Statewide	The average rainfall for this event was 0.55 inch, with a maximum total of 2.28 inches at the Canoe Brook (Essex County) station. Maximum wind gusts were below 20 mph.
August 18-19, 1991	Hurricane Bob	Statewide	The average rainfall for this event was 1.25 inches, with a maximum total of 3.16 inches at the Millville (Cumberland County) station. Maximum wind gusts were below 20 mph. High surf and rip tides were associated with this event.
September 26-27, 1992	Hurricane Danielle	Statewide	The average rainfall for this event was 0.91 inch, with a maximum total of 2.83 inches at the Belleplain SF (Cape May County) station. Maximum wind gusts were below 20 mph. High surf and rip tides were associated with this event. Two boaters drown from this storm.
September 1-2, 1993	Hurricane Emily	Statewide	The avg rainfall for this event was 0.03 inch, with a maximum total of 0.26 inch at the Atlantic City International Airport (Atlantic County) station. Maximum wind gusts were below 20 mph.
August 17-19, 1994	Hurricane Beryl	Statewide	The average rainfall for this event was 1.09 inches, with a maximum total of 3.82 inches at the Sussex (Sussex County) station. Maximum wind gusts were below 20 mph.
November 17-19, 1994	Hurricane Gordon	Statewide	The average rainfall for this event was 0.2 inch, with a maximum total of 1.07 inches at the Cape May (Cape May County) station. Maximum wind gusts were below 20 mph.
June 7-8, 1995	Hurricane Allison	Statewide	The average rainfall for this event was 0.21 inch, with a maximum total of 2.04 inches at the Millville (Cumberland County) station. Maximum wind gusts were below 20 mph.
August 6-8, 1995	Hurricane Erin	Statewide	The average rainfall for this event was 0.79 inch, with a maximum total of one inch at the Belleplain SF (Cape May County) station. Maximum wind gusts were below 20 mph.
October 5-7, 1995	Hurricane Opal	Statewide	The average rainfall for this event was 2.36 inches, with a maximum total of 4.92 inches at the Sussex (Sussex County) station. Maximum wind gusts were below 20 mph.

June 20-22, 1996	Hurricane Arthur	Statewide	The average rainfall for this event was 0.54 inch, with a maximum total of 2.3 inches at the Mays Landing (Atlantic County) station. Maximum wind gusts were below 20 mph.
July 13-15, 1996	Hurricane Bertha	Statewide	Bertha was an unusually long-lasting and strong supercell. The average rainfall for this event was 2.94 inches, with a maximum total of 6.59 inches at the Estell Manor (Atlantic County) station. A maximum wind gust of 55 mph was reported at Harvey Cedars. A maximum storm surge of 2.27 feet was reported at Atlantic City (Atlantic County). One death was reported in New Jersey because of Bertha.
August 31-September 2, 1996	Hurricane Edouard	Statewide	The average rainfall for this event was zero inches, with a maximum total of 0.07 inch at the Sussex (Sussex County) station. Maximum wind gusts were below 20 mph. High surf and rip tides were associated with this event. There were two deaths in New Jersey due to Edouard.
September 7-9, 1996	Hurricane Fran	Statewide	The average rainfall for this event was 1.1 inches, with a maximum total of 2.72 inches at the Lambertville (Hunterdon County) station. Maximum wind gusts were below 20 mph.
October 9-10, 1996	Hurricane Josephine	Statewide	The average rainfall for this event was 1.69 inches, with a maximum total of three inches at the Canistear Reservoir (Sussex County) station. A maximum wind gust of 70 mph was reported at Atlantic City (Atlantic County).
July 24-26, 1997	Hurricane Danny	Statewide	The average rainfall for this event was 3.32 inches, with a maximum total of 7.76 inches at the Cranford (Union County) station. Maximum wind gusts were below 20 mph.
August 28-29, 1998	Hurricane Earl	Statewide	The average rainfall for this event was zero inches with a maximum total of 0.02 inch at the Moorestown (Burlington County) station. Maximum wind gusts were below 20 mph.
September 5, 1998	Hurricane Bonnie	Statewide	The average rainfall for this event was 0.08 inch, with a maximum total of 0.92 inch at the Estell Manor (Atlantic County) station. Maximum wind gusts were below 20 mph. High surf and rip tides were associated with this event.
September 5-9, 1999	Hurricane Dennis	Statewide	The average rainfall was 1.22 inches for this event. Maximum rainfall totaled 5.59 inches at the Greenwood Lake (Passaic County) station. Maximum wind gusts were less than 20 mph. High surf and rip tides were also reported from this storm.
October 18-19, 1999	Hurricane Irene	Statewide	The average rainfall total was 0.39 inch for this event, with a maximum total of 2.5 inches at the Brant Beach Haven station. Maximum wind gusts were below 20 mph.
June 15-19, 2001	Hurricane Allison	Statewide	The average rainfall total was 2.38 inches for this event, with a maximum total of 4.62 inches at the Canoe Brook station. Another source indicated 4.86 inches of rain fell in Howell. A maximum wind gust of 36 mph was reported in Atlantic City (Atlantic County).
September 10-12, 2002	Hurricane Gustav	Statewide	The maximum rainfall total of 0.08 inch was recorded at the New Milford station. A maximum wind gust of 60 mph was reported in Keansburg.
October 12, 2002	Hurricane Kyle	Statewide	The average rainfall total for this event was 1.72 inches, with a maximum total of 4.71 inches at the Rahway station. Maximum wind gusts were below 20 mph.
September 13, 2003	Tropical Storm Henri	Statewide	Caused up to three inches of rain across the State.
August 3-4, 2004	Hurricane Alex	Statewide	Average rainfall totals were 0.09 inch and the maximum rainfall total of 1.89 inches at the West Deptford station. Maximum wind gusts were below 20 mph.

August 14-16, 2004	Hurricane Charley	Statewide	Average rainfall totals were 0.1.26 inches and the maximum rainfall of 3.49 inches was reported at the Ringwood station. Maximum wind gusts were below 20 mph.
August 30-31, 2004	Hurricane s Gaston and Hermin	Statewide	Average rainfall totals were 0.48 inch and the maximum rainfall of 4.06 inches was reported at the Indian Mills station. Maximum wind gusts were below 20 mph.
September 8, 2004	Hurricane Francis	Northern New Jersey	Extra-tropical storm dropped around three inches of rain in northern New Jersey.
September 28, 2004	Hurricane Jeanine	Statewide	Passed to the south of the State as an extra-tropical storm, causing up to five inches of rainfall across New Jersey.
September 7-8, 2005	Hurricane s Maria and Nate	Statewide	Rip currents from storms killed one and seriously injured another.
October 24-25, 2005	Hurricane Wilma	Statewide	Wilma brought an average rainfall of 1.2 inches, with a maximum rainfall total of 2.66 inches in Atlantic City (Atlantic County). Wind gusts were below 20 mph.
August 22-23, 2009	Hurricane Bill	Statewide	Average rainfall total of 1.77 inches for this event with a maximum rainfall total of 6.49 inches at the Estell Manor (Atlantic County) station. Maximum wind gusts were below 20 mph. High surf and rip tides were associated with this event.
September 3-4, 2010	Hurricane Earl	Statewide	A maximum rainfall total of 0.04 inches was reported at the Cape May station. A maximum wind gust of 65 mph was reported in Cape May. High surf and rip tides were also reported. The storm caused two fatalities in New Jersey, both because of the rough surf from Earl.
August 27-28, 2011	Hurricane Irene	Statewide	Hurricane Irene moved made its second landfall as a tropical storm near Little Egg Inlet along the southeast New Jersey coast at around 5:35 a.m. on August 28, 2011 Irene brought tropical-storm force winds, destructive storm surge, and record-breaking freshwater inland flooding across northeast New Jersey that resulted in three deaths, thousands of mandatory, and voluntary evacuations along the coast and rivers from surge and freshwater flooding, and widespread power outages that lasted for up to two weeks. The storm surge of three to five feet caused moderate-to-severe tidal flooding along the ocean side and moderate tidal flooding in Delaware Bay and tidal sections of the Delaware River. Major flooding occurred on the Raritan, Millstone, Rockaway, and Passaic Rivers. Overall, Irene brought an average rainfall total of 7.03 inches with a maximum rainfall total of 9.85 inches in Cranford (Union County). Another source indicated a maximum rainfall total of 11.27 inches in Freehold. A maximum wind gust of 65 mph was reported in Cape May (Cape May County). A maximum storm surge of 4.63 feet was reported in Sandy Hook. Irene caused approximately \$1 billion in damages in New Jersey and seven deaths in the State.

<p>October 26 - November 8, 2012</p>	<p>Superstorm Sandy</p>	<p>Statewide</p>	<p>Superstorm Sandy was the costliest natural disaster by far in the State of New Jersey. Record-breaking high tides and wave action combined with sustained winds as high as 60 to 70 mph with wind gusts as high as 80 to 90 mph to batter the State. Statewide, Sandy caused an estimated \$29.4 billion in damage, destroyed or significantly damaged 30,000 homes and businesses, affected 42,000 additional structures, and was responsible directly or indirectly for 38 deaths. A new temporary inlet formed in Mantoloking (Ocean County) where some homes were swept away. About 2.4 million households in the State lost power. It would take two weeks for power to be fully restored to homes and businesses that were inhabitable. Also devastated by the storm was New Jersey's shellfish hatcheries including approximately \$1 million of losses to buildings and equipment, and product losses in excess of \$10,000 at one location alone. Overall, average rainfall totals were 2.78 inches with a maximum rainfall of 10.29 inches at the Cape May (Cape May County) station. Another source indicated a maximum rainfall total of 12.71 inches in Stone Harbor (Cape May County). A maximum wind gust of 78 mph was reported in Robbins Reef. A maximum storm surge of 8.57 feet was reported in Sandy Hook. Superstorm Sandy caused approximately \$30 billion in damages in New Jersey and caused 12 deaths in the State.</p>
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Source: NCDC 2013, NJ State HMP 2011; ONJSC 2013

MLLW Mean Lower Low Water

Mph miles per hour

SF State Forest

The probability of Bergen County being struck by a tropical storm or hurricane is difficult to predict. Because much of Bergen County is developed, the vulnerability is extremely high if an event were to occur. Tropical storms and hurricanes do not need to have a direct path over Bergen County to affect the residents. Table 3.24 shows the potential magnitude of impact that may occur if a tropical storm or hurricane were to hit the area.⁵⁹ Table 3.26 is taken from the 2007 New Jersey Hurricane Evacuation Study (HES) and Figure 3.25 (in four panels, also below) contains a County map showing the limits of potential tidal flooding from Categories 1 through 4 hurricanes as calculated by the National Weather Service-National Hurricane Center's SLOSH Model. Each map shows the limits of potential flooding from Category 1-4 hurricanes and the numbers of housing units in the Category 1-4 inundation areas. This information is provided in order to facilitate the drawing or re-drawing of evacuation zones by county and municipal emergency management officials. Please note that this study has not been updated as of the time of this Plan Update.

Hurricanes have also been evaluated by category. A Category 1 event in NJ would predominantly impact the Hackensack Meadowlands District and the Hackensack River communities in general, up to the Oradell Reservoir in Oradell, NJ. However, while the Hudson River area communities in NJ are marginally impacted, even up to a Category 4, both the Passaic River communities and communities around Overpeck Creek, a tributary of the Hackensack River, are affected.

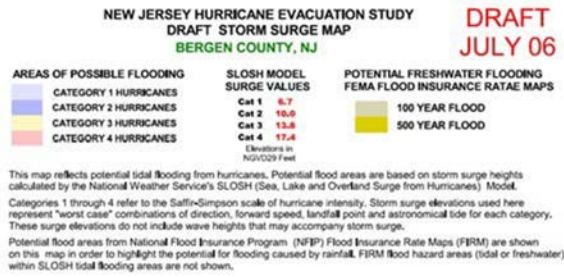
Per the USGS (Fact Sheet 2005-3121, October 2005), there is a high probability of 20-40 hurricanes reaching the NJ area in the next 100 years.⁶⁰ Additionally, per the Colorado State University Department of Atmospheric Science (April 9, 2008 report), there is a 31% chance (annually) of a Category 3, 4 or 5 event impacting the East Coast and a 44% chance (annually) of a Category 1 or 2 event. Global temperature increase does not seem to be modifying these probabilities.⁶¹

Table 3.26: Bergen County Vulnerable Housing Data

		PERMANENTLY OCCUPIED HOUSING UNITS ¹				MOBILE HOMES ²		TOTAL HU
		CAT 1	CAT 2	CAT 3	CAT 4	OCCUPIED	TOTAL	
1	Fairview Boro	4	3	40	72	0	0	5,070
2	Cliffside Park Boro	0	0	0	0	0	0	10,340
3	Edgewater Boro	1,737	100	182	97	8	8	5,702
4	Fort Lee Boro	0	0	0	0	7	7	16,028
5	Englewood Cliffs Boro	0	0	0	0	0	0	1,889
6	Ridgefield Boro	29	19	21	119	6	6	4,124
7	Palisades Park Boro	23	24	82	218	0	0	6,609
8	Leonia Boro	70	58	99	147	0	0	3,345
9	Englewood City	356	252	164	782	42	42	9,607
10	North Arlington Boro	24	82	107	146	0	0	6,519
11	Lyndhurst Twp	89	1,037	481	592	0	0	8,113
12	Rutherford Boro	168	91	144	677	0	0	7,228
13	East Rutherford Boro	28	26	46	632	0	0	3,753
14	Carlstadt Boro	170	6	66	113	147	158	2,687
15	Moonachie Boro	844	28	0	0	229	245	895
16	Little Ferry Boro	3,343	196	66	301	0	0	4,216
17	Wood-Ridge Boro	44	32	2	0	0	0	3,071
18	Wallington Boro	425	599	624	633	0	0	4,907
19	Ridgefield Park Village	565	178	51	296	6	6	5,134
20	Teterboro Boro	2	4	1	0	0	0	9
21	Hasbrouck Heights Boro	0	141	34	46	6	6	4,789
22	South Hackensack Twp-SE	0	0	0	0	0	0	0
23	South Hackensack Twp-N	40	461	187	327	0	0	1,054
24	South Hackensack Twp-W	6	0	1	2	0	0	27
25	Bogota Boro	25	22	16	114	0	0	2,915
26	Garfield City	16	63	114	416	7	7	11,715
27	Lodi Boro	117	5	17	69	230	305	9,977
28	Hackensack City	403	1,112	457	4,299	8	8	18,925
29	Teaneck Twp	234	119	62	482	13	13	13,430
30	Elmwood Park Boro	0	0	0	0	16	16	7,338
31	Saddle Brook Twp	0	0	0	0	0	0	5,161
32	Rochelle Park Twp	0	0	0	0	0	0	2,118
33	Maywood Boro	0	0	0	0	8	8	3,813
34	Alpine Boro	0	0	0	0	0	0	737
35	Rockleigh Boro	0	0	0	0	0	0	60
36	Norwood Boro	0	0	0	0	0	0	1,885
37	Northvale Boro	0	0	0	0	6	6	1,515
38	Demarest Boro	0	0	0	0	0	0	1,634
39	Tenafly Boro	0	0	0	0	17	17	4,887
40	Cresskill Boro	0	0	0	0	8	8	2,695
41	Closter Boro	0	0	0	0	10	10	2,872
42	Harrington Park Boro	0	0	0	0	0	0	1,577
43	Old Tappan Boro	0	0	0	0	0	0	1,902
44	Dumont Boro	0	0	0	5	0	0	6,335
45	Bergenfield Boro	0	0	0	0	0	0	9,292
46	Haworth Boro	0	0	0	0	0	0	1,144
47	River Vale Twp	0	0	0	0	0	0	3,311
48	New Milford Boro	311	66	57	320	10	10	6,443
49	Emerson Boro	0	0	0	0	0	0	2,416
50	Westwood Boro	0	0	0	0	0	0	4,612
51	Oradell Boro	0	0	0	12	0	0	2,812
52	River Edge Boro	91	16	2	41	0	0	4,191
53	Park Ridge Boro	0	0	0	0	0	0	3,268
54	Montvale Boro	0	0	0	0	0	0	2,589
55	Hillsdale Boro	0	0	0	0	6	6	3,504
56	Woodcliff Lake Boro	0	0	0	0	0	0	1,904
57	Washington Twp	0	0	0	0	0	0	3,304
58	Paramus Boro	0	0	0	10	7	7	8,337
59	Saddle River Boro	0	0	0	0	4	4	1,196
60	Upper Saddle River Boro	0	0	0	0	6	6	2,524
61	Ho-Ho-Kus Boro	0	0	0	0	0	0	1,466
62	Ridgewood Village	0	0	0	0	11	11	8,848
63	Fair Lawn Boro	0	0	0	0	0	0	12,131
64	Waldwick Boro	0	0	0	0	5	5	3,496
65	Glen Rock Boro	0	0	0	0	0	0	4,026
66	Allendale Boro	0	0	0	0	0	0	2,143
67	Midland Park Boro	0	0	0	0	0	0	2,645
68	Ramsey Boro	0	0	0	0	9	9	5,407
69	Wyckoff Twp	0	0	0	0	0	0	5,638
70	Mahwah Twp	0	0	0	0	131	131	9,651
71	Franklin Lakes Boro	0	0	0	0	6	6	3,419
72	Oakland Boro	0	0	0	0	0	0	4,323
TOTALS		9,164	4,740	3,123	10,968	969	1,071	340,666

¹ Category 2 through 4 units are in addition to preceding category(ies).

² Mobile homes can be seasonal housing units and vice versa.



**Figure 3.25 (Panel #1): New Jersey Hurricane Evacuation Study
Draft Storm Surge Map - Bergen County**

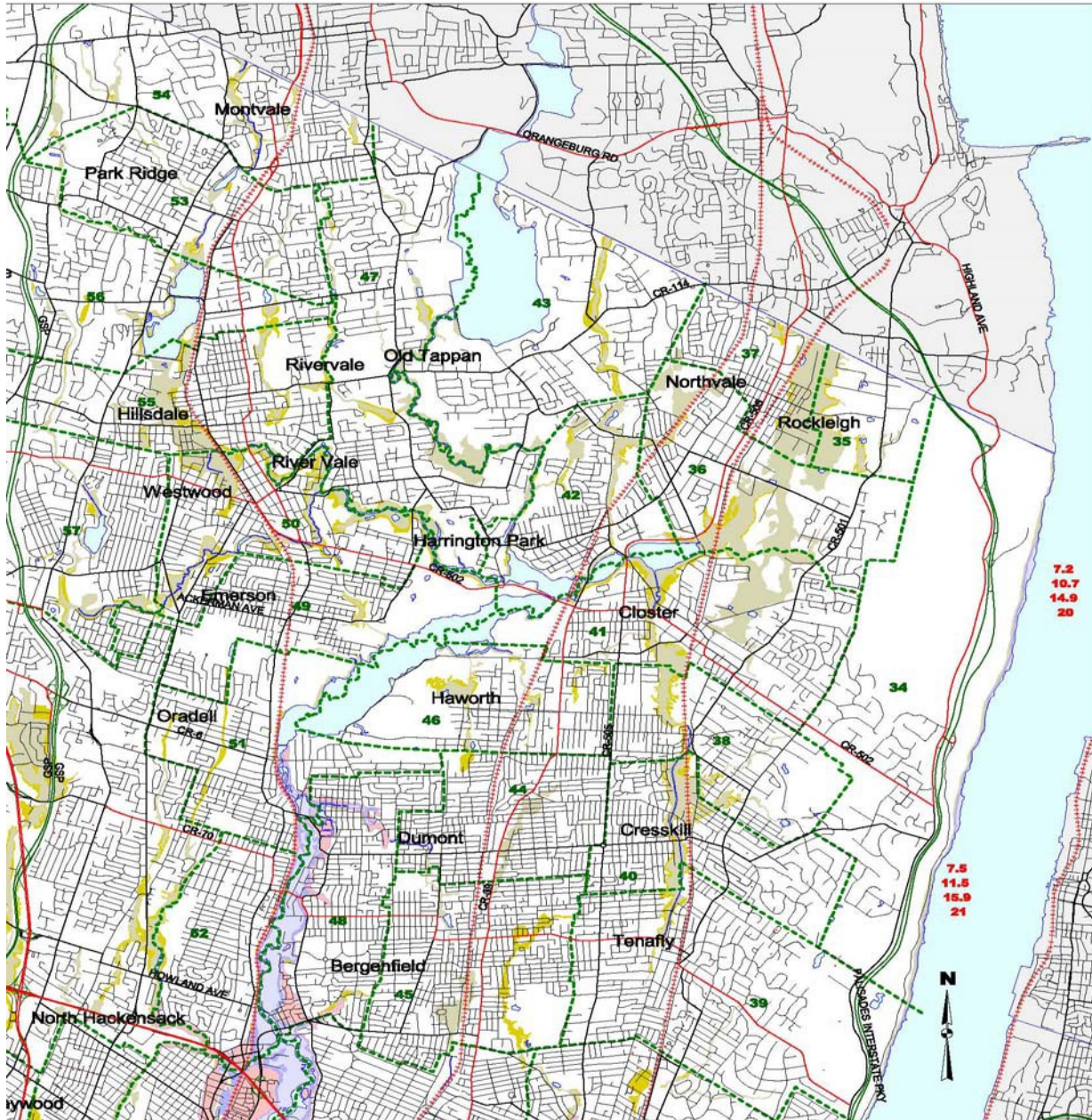


Figure 3.25 (Panel #2): New Jersey Hurricane Evacuation Study
Draft Storm Surge Map - Bergen County

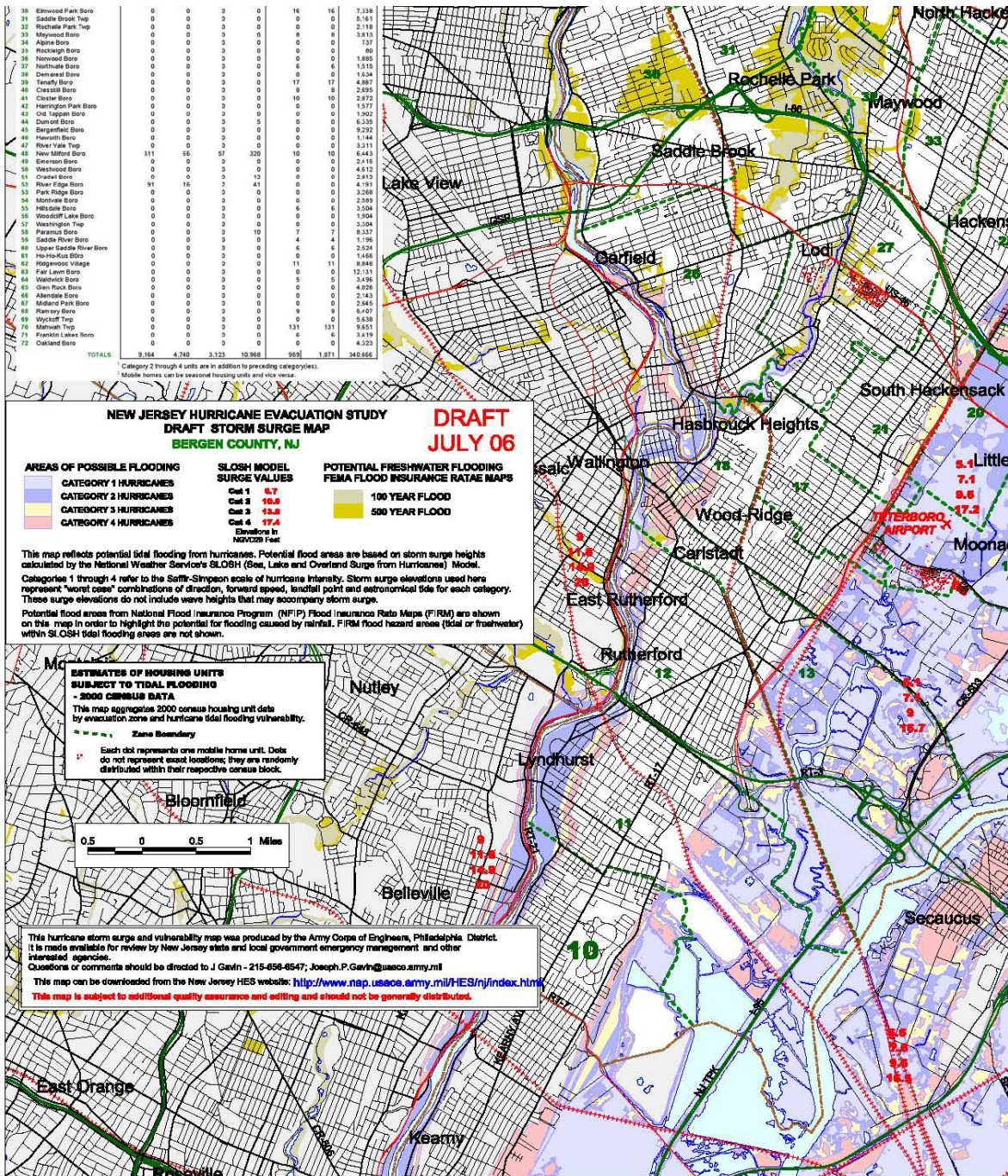
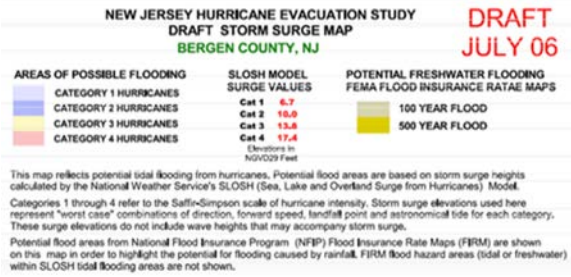


Figure 3.25 (Panel #3): New Jersey Hurricane Evacuation Study Draft Storm Surge Map - Bergen County



**Figure 3.25 (Panel #4): New Jersey Hurricane Evacuation Study
 Draft Storm Surge Map - Bergen County**

3.7 Assessing Vulnerability: Identifying Critical Facilities

This Plan contains extensive information regarding the critical facilities identified by the 70 Bergen County municipalities. A detailed discussion of all critical facilities in each municipality, and to the degree to which each is vulnerable to the natural hazards identified in this plan, is included in this Plan.

Identified critical facilities may include structures such as:

- municipal buildings;
- police and fire stations;
- rescue squads;
- emergency operation centers ;
- shelters;
- schools;
- hospitals;
- transportation systems;
- utilities (power plants, substations, power lines, gas lines);
- oil facilities;
- hazardous material facilities;
- dams;
- communication networks;
- public works;
- detention centers;
- water supplies;
- wastewater facilities;
- roads and bridges;
- airports;
- rail terminals; and
- nursing/care centers.

Critical facility information was provided by individual municipal OEM Coordinators, as well as the Bergen County Office of Emergency Management and the Bergen County Prosecutor's Office. Certain hazards that affect Bergen County are universal, meaning that there is no separation of shared risk; each Bergen County municipality is equally as vulnerable to the occurrence of certain hazards. These universal hazards include high winds, drought, earthquake, and winter storm. Other hazards are geographic in nature, meaning that certain locations are more at risk to certain hazards. These hazards include flooding, storm surge, landslide and wildfire. The critical facilities that are vulnerable to these "geographic" hazards are detailed in the discussion of each hazard found in this section.

A description of all critical facilities and their vulnerability by municipality, as well as maps identifying the critical facilities for each Bergen County municipality, are included in **Appendix B** and **Appendix C**, respectively. **Appendix D** contains a table of all critical facilities that are scored based on their vulnerability to certain hazards affecting Bergen County. **Appendix E** contains summary maps of the county that depict the critical facilities in the municipalities and their vulnerability to the various natural hazards described in this plan.

This Plan does not identify all existing structures within each municipality which may be vulnerable to the identified natural hazards. Additionally, it does not identify future buildings, infrastructure, or critical facilities that may be constructed which may be vulnerable to the identified natural hazards. The collection of such data does not qualify for mitigation funding and would need to be considered by the County as part of a future preparedness strategy.

3.8 Identifying Impacts

The Plan does not include specific data regarding natural hazard impacts to all buildings in each jurisdiction. The collection of this data is described in further detail and included as a Bergen County action item in the mitigation strategy section of the Plan.

- ¹ "Paramus, New Jersey," City-Data.com, 2007. (www.city-data.com)
- ² "Physiographic Provinces of New Jersey," New Jersey Geological and Water Survey (undated).
- ³ "Geologic Map of New Jersey." Map. NJDEP, Div of Science, Research & Technology, Geologic, Survey. 1999.
- ⁴ "Land Use & Land Cover of Bergen County," New Jersey Department of Environmental Protection (NJDEP), 2002.
- ⁵ "Bergen County Major Roadways," New Jersey Meadowlands Commission, 2007.
- ⁶ Population data courtesy of Bergen County Department of Planning, 2014.
- ⁷ TetraTech, Inc., New Jersey State Hazard Mitigation Plan, 2014.
- ⁸ "Areas Prone to Natural Sinkhole Development," New Jersey Geologic Survey, 2005.
- ⁹ "Bergen County Historical Hail Events," NOAA Satellite and Information Service, National Climatic Data Center, US Department of Commerce. <http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms>
- ¹⁰ United States Geological Survey Glossary, <http://landslides.usgs.gov/learning/glossary.php#>
- ¹¹ "Swelling Clays Map of the Conterminous United States" by W. Olive, A. Chleborad, C. Frahme, J. Shlocker, R. Schneider and R. Schuster. It was published in 1989 as Map I-1940 in the United States Geological Survey (USGS) Miscellaneous Investigations Series. http://ngmdb.usgs.gov/Prodesc/proddesc_10014.htm
- ¹² Woods Hole Sea Grant, 2003 (as taken from NJ State Mitigation Plan).
- ¹³ Intergovernmental Panel on Climate Change Synthesis Report, 2007. https://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf
- ¹⁴ Parris, Global Sea Level Rise Scenarios for the United States National Climate Assessment, 2012. http://scenarios.globalchange.gov/sites/default/files/NOAA_SLR_r3_0.pdf
- ¹⁵ TetraTech, Inc., New Jersey State Hazard Mitigation Plan, 2014.
- ¹⁶ Flood Insurance Study, Bergen County, New Jersey. FEMA. September 20, 2005. Flood Insurance Study Number 34003CV001A.
- ¹⁷ Blake, et al, Tropical Cyclone Report, Hurricane Sandy, National Hurricane Center, February 12, 2013.

- ¹⁸ Clark Caton Hintz, Strategic Recovery Report for the Borough of Little Ferry, April 8, 2014.
- ¹⁹ “FEMA 2006 FIRM 100- and 500-Year Flood Bergen County Municipalities, State of New Jersey,” New Jersey Meadowlands Commission, 2015.
- ²⁰ Ibid
- ²¹ FEMA HAZUS-MH Guide, http://www.fema.gov/plan/prevent/hazus/hz_overview.shtm
- ²² “New Jersey Drought Periods.” Northeast Regional Climate Center, Cornell University, 2014. www.nrcc.cornell.edu/drought/NJ_drought_periods.html
- ²⁴ NJDEP Drought Information Resource, <http://njdrought.org>
- ²⁵ “New Jersey Drought Summary.” Northeast Regional Climate Center, Cornell University. www.nrcc.cornell.edu/drought/NJ_pdsi_smry.html
- ²⁶ NOAA National Climatic Data Center, <http://www.ncdc.noaa.gov/oa/climate/research/prelim/drought/palmer.html>
- ²⁷ ONJSC Rutgers University 2013c; New Jersey Geological and Water Survey (NJGWS), 2013.
- ²⁸ December 2014. State Climate Extremes Committee, National Climatic Data Center, National Oceanic and Atmospheric Administration
- ²⁹ TetraTech, Inc., New Jersey State Hazard Mitigation Plan, 2014.
- ³⁰ ONJSC Rutgers University 2013c; New Jersey Geological and Water Survey (NJGWS), 2013.
- ³¹ TetraTech, Inc., New Jersey State Hazard Mitigation Plan, 2014.
- ³² “NWS Wind chill Chart,” NOAA National Weather Service, 2001. (<http://www.weather.gov/om/windchill/index.shtml>)
- ³³ “Snowfall Summary for the Northeast,” Cornell University. http://www.nrcc.cornell.edu/snow_records.html
- ³⁴ TetraTech, Inc., New Jersey State Hazard Mitigation Plan, 2014.
- ³⁵ New Jersey Geological Survey, – Information Circular; Predicting Earthquake Damage in New Jersey; 2003; www.njgeology.org
- ³⁶ “Approximate Relationship between Magnitude and Intensity” New Jersey Office of Emergency Management. http://www.state.nj.us/njoem/opb_earmeasure.html
- ³⁷ “Ken O’Brien, Principal Planner, NJOEM, Measuring An Earthquake’s Intensity – The Modified Mercalli Intensity Scale,” http://www.state.nj.us/njoem/opb_earmeasure.html

- ³⁸ The Modified Mercalli Intensity Scale, USGS Earthquake Hazards Program, <http://earthquake.usgs.gov/learn/topics/mercalli.php>
- ³⁹ Peak Acceleration (%G) with 10% Probability of Exceedence in 50 Years.” USGS Map, 2008. http://earthquake.usgs.gov/research/hazmaps/products_data/2008/maps/ceus/ceus.10pc50.pga.jpg
- ⁴⁰ FEMA HAZUS-MH Guide, http://www.fema.gov/plan/prevent/hazus/hz_overview.shtm
- ⁴¹ *Earthquake Risks and Mitigation in the New York/New Jersey/Connecticut Region, 1999-2003*. The New York City Area Consortium for Earthquake Loss Mitigation. <http://nycem.org/techdocs/FinalReport/03-SPO2p.pdf>
- ⁴² Earthquake Loss Estimation Study for Bergen County, December 2000. http://www.state.nj.us/dep/njgs/enviroed/freedwn/bergen_hazus.pdf
- ⁴³ (Abridged from *Seismicity of the United States, 1568-1989* (Revised), by Carl W. Stover and Jerry L. Coffman, U.S. Geological Survey Professional Paper 1527, United States Government Printing Office, Washington: 1993, <http://earthquake.usgs.gov/regional/states.php?region=New%20Jersey>
- ^{xliv} “Landslides in New Jersey,” NJDEP, New Jersey Geological Survey, 2006. (<http://nj.gov/dep/njgs/geodata/dgs06-3md.htm>)
- ^{xlv} Tetra Tech, Inc., New Jersey State Hazard Mitigation Plan, 2014.
- ⁴⁶ American Meteorological Society Glossary. <http://amsglossary.allenpress.com/glossary/search?id=tornado1>
- ⁴⁷ “Fujita Scale.” <http://www.tornadoproject.com/fscale/fscale.htm>.
- ⁴⁹ FEMA website. http://www.fema.gov/plan/prevent/saferoom/tsfs02_torn_activity.shtm
- ⁵⁰ “Design Wind Speed Map for Community Shelters.” FEMA, Design and Construction Guidance for Community Shelters, July 2000. <http://www.fema.gov/library/viewRecord.do?id=1657>
- ⁵¹ “Tornado Activity vs. Wind Zones.” FEMA, Design and Construction Guidance for Community Shelters, July 2000.
- ⁵² TetraTech, Inc., New Jersey State Hazard Mitigation Plan, 2014.
- ⁵³ TetraTech, Inc., New Jersey State Hazard Mitigation Plan, 2014.
- ⁵⁴ TetraTech, Inc., New Jersey State Hazard Mitigation Plan, 2014.
- ⁵⁵ New Jersey Office of Emergency Management. <http://www.state.nj.us/njoem/plan/hurricanes.html>

⁵⁶“Saffir Simpson Hurricane Scale,” NOAA National Weather Service. http://www.nhc.noaa.gov/HAW2/english/basics/saffir_simpson.shtml

⁵⁷ Source: The Atlantic Oceanographic and Meteorological Laboratory, Frequently Asked Questions- G#12.

⁵⁸ Tetra Tech, Inc., New Jersey State Hazard Mitigation Plan, 2014.

⁵⁹ 2007 New Jersey Hurricane Evacuation Study (HES) Transportation Analysis, United States Army Corps of Engineers. http://www.state.nj.us/njoem/plan/pdf/maps/hurrevacution_study.pdf

⁶⁰ United State Geological Survey Fact Sheet, 2005-3121. <http://pubs.usgs.gov/fs/2005/3121/>

⁶¹ Ibid.

4. Mitigation Strategy

WHAT'S NEW IN CHAPTER 4?

- *Goals and objectives have been slightly modified to more closely coincide with those found in the 2014 NJ State Mitigation Plan. This is discussed in Chapter 1.*
- *Expanded documentation regarding mitigation actions and the process by which the actions were collected and analyzed.*

Bergen County's mitigation strategy will serve as a long-term roadmap for reducing potential losses due to natural hazards that were identified in the risk assessment (Section 3). This section will describe how Bergen County and its municipalities will accomplish the mission of the entire planning process.

Bergen County's general mitigation planning approach included the following components:

1. **Develop mitigation goals:** FEMA defines mitigation goals as general guidelines that explain what should be achieved. Goals are usually broad, long-term policy statements that represent visions for reducing or avoiding losses from the identified natural hazards. For the 2008 Plan, Bergen County developed mitigation goals that were determined to be timely and still relevant for this Plan update.
2. **Identify mitigation Actions:** Mitigation actions are specific actions that help achieve the mitigation goals. Mitigation actions were identified based on the risk assessment, mitigation goals, and input from Bergen County's 70 municipalities. These actions were evaluated against the mitigation goals and other evaluation criteria.
3. **Implementation Strategy:** Actions with the highest priority are recommended for first consideration. This section describes how the mitigation actions will be implemented.

4.1 Mitigation Goals and Objectives

Mitigation goals and objectives were identified by the Plan Committee in 2008. These goals and objectives remain unchanged for the 2014 plan update. Each goal has several corresponding objectives that further specify implementation actions. The objectives are specific actions and are able to be measured.

Goal 1: Protect and promote public health and safety

Objectives

- a. Achieve excellence in hazard mitigation planning
- b. Improve service to vulnerable populations; reduce harm resulting from emergencies
- c. Educate citizens regarding sustainable development, disaster preparedness and hazard mitigation
- d. Implement and maintain state-of-the-art disaster warning systems

Goal 2: Safeguard critical public facilities and infrastructure

Objectives

- a. Analyze and mitigate potential impacts from hazards for all public facilities and infrastructure (new and existing)

- b. Implement mitigation programs that protect all critical governmental facilities and services and promote reliability of systems to minimize impacts from hazards, maintain operations and expedite recovery in emergencies
- c. Create back-up facilities for critical systems such as water, sewer, digital data, electricity, and communications for all critical facilities
- d. Formalize and implement best practices for protecting systems and networks

Goal 3: Protect public and private property

Objectives

- a. Adopt and enforce public policies to minimize impacts of development and enhance safe construction in high-hazard areas
- b. Integrate new hazard and risk information into building codes, land use planning mechanisms and other public regulations
- c. Educate public officials, developers, realtors, insurance agents, contractors, property owners, and the general public regarding hazard vulnerability and potential severity as well as potential mitigation actions
- d. Promote hazard mitigation of all public and privately-owned property
- e. Incorporate hazard mitigation into all community planning and projects
- f. Promote hazard mitigation for all historic structures
- g. Promote post-disaster mitigation as integral with repair and recovery efforts

Goal 4: Promote economic vitality in Bergen County and its 70 constituent municipalities

Objectives

- a. Partner with the private sector - small and large businesses - to promote hazard mitigation as integral to standard business practices
- b. Educate businesses and community members regarding how economic vitality may be impacted by potential hazards and how the impacts on the business sector may impact the local citizens
- c. Partner with the private sector to create programs and processes whereby employees may be an active, powerful resource for disaster preparedness and mitigation both on the job and at home

Goal 5: Preserve the natural environment and promote human health

Objectives

- a. Analyze the secondary effects of potential disasters on human and environmental health, such as mold growth, hazardous material spills, chemical releases by fire/flood/ice, materials used for cleanup and recovery, etc., and develop projects to mitigate potential impacts
- b. Convert all materials and chemicals used by government agencies in development, operations, maintenance, etc., to environmentally benign and conservation friendly materials and chemicals, considering a balance of social, economic, and environmental accounting
- c. Decrease consumption of energy at the municipal and county level (petrochemical, electrical, etc.)
- d. Decrease greenhouse gas emissions at the municipal and county level to 1990 levels by the year 2010
- e. Conduct educational programs regarding all manner of environmental and human health awareness, including but not limited to, global warming, energy efficiency, carbon emissions, recycling and reuse

- f. Engage the public and private sectors in energy efficiency and carbon emission reduction programs such as blanketing water heaters, converting to compact florescent lighting, weather proofing, maintaining proper tire pressure, etc.

4.2 Identifying Mitigation Actions

Mitigation actions are activities designed to reduce or eliminate losses resulting from natural hazards. There are four primary types of mitigation actions that are represented in Bergen County's mitigation strategy, as represented in Table 4.1.

Table 4.1: Mitigation Action Types

Mitigation Action Type	Description	Examples
Local Plans and Regulations	Government, administrative, or regulatory actions or processes that influence the way land and buildings are developed and built.	<ul style="list-style-type: none"> ▪ Land use ordinances ▪ Comprehensive plans ▪ Subdivision regulations ▪ Building codes ▪ NFIP CRS ▪ Stormwater management regulations and plans ▪ Capital improvement programs
Structure and Infrastructure Projects	Actions that involve modification of existing buildings or structures to protect them or remove them from a hazard area. Applies to public or private structures, or critical facilities.	<ul style="list-style-type: none"> ▪ Acquisitions and elevations of structures in flood prone areas ▪ Flood walls and retaining walls ▪ Detention and retention structures ▪ Culverts ▪ Utility undergrounding
Natural Systems Protection	Actions that minimize hazard loss and also preserve or restore the functions of natural systems.	<ul style="list-style-type: none"> ▪ Sediment and erosion control ▪ Stream corridor restoration ▪ Forest management ▪ Wetland restoration and preservation
Education and Awareness Programs	Actions to inform and educate citizens, elected officials and property owners about hazards and potential ways to mitigate them.	<ul style="list-style-type: none"> ▪ Websites ▪ Real estate disclosure ▪ Mailings to residents in hazard-prone areas ▪ Radio and television ads
Energy Allocation for Critical Infrastructure*	Permanent, dual-fuel generators for critical infrastructure	<ul style="list-style-type: none"> ▪ Generators only

*Post Superstorm Sandy, FEMA has allowed the inclusion of generators as mitigation Energy Allocation for Critical Infrastructure. It should also be noted that preparedness and response actions are different from mitigation actions, and do not meet the federal mitigation planning requirements for identifying mitigation actions. Preparedness and response actions are those actions taken to prepare for or respond to a hazard event. Purchasing equipment for municipal departments is one example of a preparedness action that does not qualify as a mitigation action.

The Planning Team worked with each Bergen municipality to brainstorm potential new mitigation actions for inclusion in the Plan. The Risk Assessment included critical facility worksheets that were completed for all critical facilities within each Bergen County jurisdiction. Each community also had to consider what capabilities it currently has to implement any mitigation actions, and where mitigation can be improved, or where it can be incorporated in to the day-to-day business of each municipality.

The Planning Team utilized the “Action Worksheet” provided by FEMA in order to gather detailed information about each proposed mitigation action. The sheets were sent to every municipality as an interactive PDF, which allows for online completion and submission. The learning curve was quite steep for a significant portion of the participating municipalities, but the Planning Team believes it was a worthwhile approach that should be continued for the next five-year Plan update. The “Action Worksheet” allowed for each action to be evaluated on its own by the person filling out the form. Table 4.2 details the information requested for each new mitigation action.

Table 4.2: Action Worksheet

Action Worksheet	
Your plan name	
Your community name	
Community action number	
Assessing the Risk	
Hazard(s) addressed	
Risk finding	
Describing the Action	
Action category	
Action type	
Action description	
Existing, future &/or NA	
Evaluating the Action	
Cost estimate	
Costs High/Med/Low- Use action evaluation criteria	
Benefits High/Med/Low-Use action evaluation criteria	
Technical	
Political	
Legal	
Environmental	
Social	
Administrative capability	
Local champion	
Other community objectives	
Implementing the Action	
Priority	
Local planning mechanism	
Responsible party	

Potential funding sources	
Time line	
Reporting on Progress	
Action progress status	

An explanation of the evaluation criteria was provided to each participating jurisdiction to facilitate the evaluation of the mitigation actions. Bergen County is using a combination of the STAPLEE criteria and several qualitative factors, such as a comparison costs and benefits. A benefit cost review is a required component of the mitigation strategy, and a planning level review has been undertaken of each action's costs versus benefits. Estimates of actual costs are also included where known.

Table 4.3: Action Evaluation Criteria

Cost Effectiveness	
Cost estimate	<i>- How much do you estimate it will cost to implement the action?</i>
Costs- Please choose one per mitigation action	<i>High-Existing funding levels are not adequate to cover the costs of the proposed project, and implementation would require an increase in revenue through an alternative source (e.g., bonds, grants, and fee increases).</i>
	<i>Medium- The project could be implemented with existing funding, but would require a re-apportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.</i>
	<i>Low- The project could be funded under the existing budget. The project is part of or can be part of an existing, ongoing, program.</i>
Benefits- Please choose one per mitigation action	<i>High- Project will have an immediate impact on the reduction of risk exposure to life and property.</i>
	<i>Medium- Project will have a long-term impact on the reduction of risk exposure to life and property or will provide an immediate reduction in the risk exposure to property.</i>
	<i>Low- Long-term benefits of the project are difficult to quantify in the short term.</i>
Other Factors	
Technical	<i>- Is the mitigation action technically feasible? - Eliminate actions that are not.</i>
Political	<i>- Is there overall public support for the mitigation action? - Is there the political will to support it?</i>
Legal	<i>- Does the community have the authority to implement the action?</i>
Environmental	<i>- What are the potential environmental impacts of the action? - Will it comply with environmental regulations?</i>
Social	<i>- Will the proposed action affect one segment of the population? - Will it disrupt established neighborhoods, break up voting districts or cause the relocation of lower income people?</i>
Administrative capability	<i>- Does the community have the personnel and administrative capabilities to implement the action and maintain it or will outside help be necessary?</i>

Local champion	- Is there a strong advocate for the action among local departments and agencies that will support its implementation?
Other community objectives	- Does the action further other community objectives, such as capital improvements, economic development, environmental quality, or open space preservation?

4.3 Prioritization of New Mitigation Actions

Bergen County is utilizing the following prioritization criteria:

High Priority: A project that meets multiple plan goals, benefits exceed costs, has funding secured under existing programs or authorizations, or is grant-eligible, and can be completed in 1-5 years once project is funded.

Medium Priority: A project that meets at least one plan goal, benefits exceed costs, funding has not been secured and would require a special funding authorization under existing programs, grant eligibility is questionable, and can be completed in 1-5 years once project is funded.

Low Priority: A project that will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, and project is not grant-eligible and/or timeframe for completion is long-term (5-10 years).

Due to the large volume of mitigation actions submitted by Bergen County municipalities, the full list can be found in **Appendix H**.

4.4 2013 Proposed Mitigation Actions

Included in this Plan update are all of the 2013 mitigation actions submitted by the Bergen municipalities post Superstorm Sandy via Letters of Intent (LOI). The LOI is the first step in the selection of mitigation projects under HMGP and HMA. Depending upon the type of mitigation action, different funding sources may be available.

Table 4.4: Eligible Mitigation Activities

Eligible Mitigation Activities	HMGP	PDM	FMA	RFC	SRL
1. Mitigation Projects	X	X	X	X	X
Property Acquisition and Structure Demolition or Relocation and Elevation	X	X	X	X	X
Structure Elevation	X	X	X	X	X
Mitigation Reconstruction					X
Dry Floodproofing of Historic Residential Structures	X	X	X	X	X
Dry Floodproofing of Non-Residential Structures	X	X	X	X	
Minor Localized Flood Reduction Projects	X	X	X	X	X
Structural Retrofitting of Existing Buildings	X	X			
Non-Structural Retrofitting of Existing Buildings	X	X			
Safe Room Construction	X	X			
Infrastructure Retrofit	X	X			
Soil Stabilization	X	X			

Wildfire Mitigation	X	X			
Post Disaster Code Enforcement	X				
5% Initiative Projects	X				
2. Hazard Mitigation Planning	X	X	X		
3. Management Costs	X	X	X	X	X

A summary of the 2013 Letters of Intent submitted to Bergen County post Hurricane Sandy is provided in **Appendix F**.

4.5 Energy Allocation Awards

Jurisdictions that were recommended to receive energy allocations from NJOEM based on the 2013 LOI's are found in Table 4.6 below. Energy allocations are awarded for the purchase of permanent, dual-fuel generators for critical infrastructure only.

Table 4.6 Bergen County Energy Allocation Awards

Jurisdiction	Recommended Allocation
Bergen Community College	\$250,000
Bergen (County)	\$250,000
Bergen County Technical And Special Services	\$62,000
Bergen County Utilities Authority	\$250,000
Carlstadt Boro	\$75,000
Closter Borough	\$90,000
Cresskill Boro	\$100,000
Dumont Boro	\$75,000
Edgewater Boro	\$75,000
Emerson Boro	\$75,000
Fair Lawn Boro	\$250,000
Fairview Boro	\$75,000
Ridgefield Boro	\$75,000
River Edge Boro	\$50,000
City of Englewood	\$75,000
Cliffside Park Boro	\$75,000
East Rutherford	\$75,000
Englewood Cliffs Boro	\$75,000
Fair Lawn BOE	\$18,000
Fort Lee	\$75,000
City of Garfield	\$75,000
Hackensack City	\$75,000
Harrington Park Boro	\$75,000
Hasbrouck Heights Boro	\$45,000
Haworth Boro	\$75,000
Hillsdale Boro	\$60,000

Leonia Boro	\$60,000
Little Ferry Boro	\$75,000
Borough of Lodi	\$100,000
Lyndhurst Township	\$68,470
Mahwah Township	\$75,000
Maywood Boro	\$75,000
Midland Park Boro	\$40,000
Midland Park BOE	\$60,000
Montvale Boro	\$100,000
Moonachie Boro	\$75,000
North Arlington Boro	\$75,000
Demarest Public School-NVRHS	\$75,000
Northvale Boro	\$60,000
Norwood Boro	\$75,000
Oakland Boro	\$75,000
Old Tappan Boro	\$75,000
Paramus Boro	\$75,000
Ramsey Boro	\$75,000
Ridgewood Village	\$75,000
Rochelle Park Township	\$34,000
Saddle Brook Township	\$75,000
Saddle River Boro	\$75,000
Tenafly Boro	\$100,000
Upper Saddle River Boro	\$75,000
Upper Saddle River BOE	\$75,000
Ridgefield Park Village	\$75,000
Wallington Boro	\$75,000
Washington Township	\$75,000
Westwood Boro	\$100,000
Woodcliff Lake Boro	\$100,000
Wood-Ridge Boro	\$75,000
Wyckoff Township	\$75,000

4.6 Mitigation Strategy

The mitigation strategy presented in this chapter presents the results of applying the prioritization methodology presented to the set of mitigation actions identified by Bergen County and each participating jurisdiction, and includes the following prioritization parameters:

- Number of goals met by the initiative
- Benefits of the project (high, medium, or low)
- Cost of the project (high, medium, or low)
- Do the benefits equal or exceed the costs?
- Is the project grant-eligible?

- Can the project be funded under existing programs and budgets?
- Priority (high, medium, or low)

This chapter presents the County's and each participating jurisdiction's mitigation action implementation strategy including:

- Mitigation actions for individual and multiple hazards
- Mitigation goals supported by each action.
- Implementation priority
- Potential funding sources for the mitigation action (grant programs, current operating budgets or funding, or the agency or jurisdiction that will supply the funding; additional potential funding resources are identified)
- Estimated budget for the mitigation action
- Time estimated to implement and complete the mitigation action

Current funding is not identified for all of the mitigation actions presented. Due to funding constraints at the federal, state, and local levels, there are limited resources to take on new responsibilities or projects. The implementation of these mitigation actions is dependent on the approval of the local elected governing body and the ability of the community to obtain funding from local or outside sources. Where such actions are high priorities, the community will work together with NJOEM, FEMA and other Federal, State and County agencies to secure funds.

Each Bergen County jurisdiction participating in this plan Update provided the information on updates to and status of the previous mitigation strategy, as well as any new mitigation actions that have not been accounted for in post-Sandy Letters of Intent. These mitigation actions are found in **Appendices H and I**, respectively.

Specific mitigation actions included in the Bergen County Mitigation Strategy included:

- Those mitigation actions being carried forward from the 2008 plan;
- Those specifically identified by the jurisdiction during the Update planning process;
- Those that became evident through the updated hazard profiling and risk/vulnerability assessment effort.

In general, mitigation actions ranked as high priorities will be addressed first. However, medium or even low priority mitigation actions will be considered for concurrent implementation. Therefore, the ranking levels should be considered as a first-cut, preliminary ranking and will evolve based on input from Bergen County, individual Bergen municipalities, the public, NJOEM, and FEMA as the Plan is implemented.

County-Wide Mitigation Strategies

All municipalities were asked to thoroughly review several "general" initiatives, and include, amend or delete them as they found appropriate for their jurisdiction.

All municipalities in Bergen County are in support of acquisitions and elevations of substantially damaged structures as valid mitigation strategies.

All municipalities in Bergen County recognize the need for redundancy in their critical facilities and would support actions to introduce a backup power supply, flood proofing, and structural modifications to elevate their electrical systems.

185 new projects were identified within Bergen County through the planning process for this Update. All of the actions from the 2008 Plan were revisited to ascertain the status of implementation. Of the 210 mitigation actions from the 2008 Plan, 59 were implemented and 151 were not. Reasons for inaction varied, but lack of funding was the reason most often provided.

Appendix H contains a status report on all mitigation actions from the 2008 Plan. Appendix I contains mitigation actions new to this Plan update.

5. Plan Maintenance

WHAT'S NEW IN CHAPTER 5?

- *The Plan maintenance strategy has been revised, as the previous strategy was not attainable for Bergen County.*
- *A section on the capability assessment has been added.*
- *A section on incorporating plan elements into existing planning mechanisms has been added.*
- *A section on integrating mitigation into ongoing and future planning mechanisms has been added.*

Chapter 5 discusses the manner by which the Bergen County Natural Hazard Mitigation Plan Update will continue to be implemented and maintained over time.

2008 Plan Maintenance Status

The Maintenance and Monitoring Schedule developed by the Planning Team for the 2008 Bergen County Plan was not realistic, given the complexity of Bergen's 70 municipalities, as well as staffing issues. The schedule was reviewed and modified for this Plan update, to reflect what is realistic and achievable for Bergen County going forward.

It should be noted that the development of a Hazard Mitigation Leadership Team is at the discretion of each municipality and is dependent upon size of the municipality and the number of applicable plans and ordinances. In some municipalities, particularly the smaller Bergen County jurisdictions, this task may be accomplished by a Coordinator or other individual that assumes this task amongst his or her other job duties.

5.1 Plan Monitoring

As required by FEMA, per 44 CFR Part 201.6 (c)(4)(I), "the plan maintenance process shall include a section describing the method and schedule for monitoring, evaluating and updating within a 5-year cycle." To meet the above requirement most effectively, the BCOEM, in coordination with the designated project contacts, will prepare Annual Work Progress Reports for the Plan. These reports will be added to the appendix of future Plan updates. These reports shall provide the County, the respective community members and any funding agencies with project updates as applicable. Bergen County's Municipal OEM Coordinators shall be responsible for providing BCOEM with the necessary information for the Annual Work Progress Reports.

Progress Reports shall closely mirror *FEMA How-To #4 (FEMA 386-4) Worksheet #1, Progress Report*. These reports will convey the following information:

- Hazard mitigation actions for which the agency is responsible;
- Supporting agencies/ entity/ individual responsible for the project;
- Measurable objectives regarding the various stages of work and associated timelines/ schedules;
- Identified resources that must be acquired for project completion, sources for such resources and plans to obtain said resources;
- Identified permits and/ or approvals necessary for project completion;
- How the project will be conducted by the responsible organization/ entity / individual;
- To whom each duty within the project will be assigned (staff, contractors, volunteers, etc.);

- Current status of the project; and
- Challenges that may hinder project completion.

5.2 Plan Evaluation

BCOEM, the NJMC, and representatives from the 70 municipalities will hold annual Evaluation Meetings to review the Plan. At each annual meeting, which will be advertised and open to the public, all completed mitigation projects will be reported to BCOEM by the respective municipalities. Any progress reports will be due at the Evaluation Meeting. Evaluation Meetings will be held immediately before or after a scheduled Quarterly OEM Coordinators Meeting to encourage participation. Along with reviewing the progress reports, BCOEM will use the Evaluation Meetings to reach out to communities for new project ideas and to encourage stakeholders and any members of the public to step forward and lead new hazard mitigation efforts.

During the course of Plan maintenance and evaluation, the following questions will be discussed:

- Do the goals and objectives of the existing Plan adequately address both current and expected conditions and challenges?
- Has the nature and/ or magnitude of hazards, risks and/ or vulnerability changed?
- Are the current resources sufficient for implementing the Plan?
- Are there any challenges that stand in the way of carrying out the Plan: technical, political, legal, environmental, operational, coordination with agencies/ people who must work together to accomplish the task, etc?
- Have the objectives that were already completed achieved their desired outcomes and are there any related projects that should be modified accordingly?
- Have all entities, such as state government departments, participated as proposed?
- What can be done to improve the way the Plan is executed?
- Have new projects been sought and are new projects being adequately assessed and promoted?

Minutes of each Evaluation Meeting will be attached to future Plan updates. Minutes of the meetings will be taken and will be made available for review.

5.3 Plan Updates

As per 44 CFR Part 201.6 (d)(2) and 201.6 (d)(3), the Plan will be reviewed and revised as needed, and submitted to the State Hazard Mitigation Officer for initial review and coordination within five years of approval of the Plan by FEMA (and during 5-year cycles thereafter).

As discussed above, the BCOEM will monitor and evaluate the Plan every 12 months. Additionally, within 2 years of the date of Plan approval, the BCOEM will organize and host a public outreach workshop with the dual purpose of explaining the plan to the attendees and soliciting new mitigation projects and ideas for improving existing projects. This meeting may also serve as the annual Evaluation Meeting if necessary for scheduling purposes. The following questions will be addressed at the public workshops:

- Have hazards, vulnerability, or risks changed such that the goals, objectives, and/or projects should be modified?
- Are additional information, technology, or funding sources available to the BCOEM to perform more accurate vulnerability/risk assessments?
- Does the Plan adequately address current and future risks?

The public workshop will be advertised via the BCOEM, local newspapers, and local CERT programs. The minutes and results of the Annual Hazard Mitigation Plan Update Workshops will be available at the local OEM offices. Postings will include any provided presentations and hand-outs.

To facilitate the update process, the Bergen County OEM Coordinator will hold a meeting three years before the Plan it set to expire, to develop and commence the implementation of a detailed Plan update program. The BCOEM Coordinator will invite representatives from NJOEM to this meeting to provide guidance in plan update procedures. This program shall, at a minimum, establish who shall be responsible for managing and completing the Plan update effort, what needs to be included in the update, and a detailed timeline with milestones to assure that the update is completed according to regulatory requirements.

5.4 Incorporation of Plan Elements into Existing Planning Mechanisms

As per 44 CFR Part 201.6 (c)(4)(iii), “The plan shall include] a process by which local governments incorporate the requirements of the mitigation plan into other municipal/ county planning mechanisms, such as comprehensive or capital improvement plans, when appropriate.” Participating municipalities have provided a listing of related programs through which mitigation planning is currently and may be implemented in the future, in the Community Capability Worksheets, which have been compiled into a spreadsheet and are provided in **Appendix L**. The level of detail and completeness provided by Bergen municipalities varied greatly.

The Municipal Land Use Law, N.J.S.A. 40:55D, *et seq.* (“MLUL”) provides the statutory authority that sets forth the framework associated with regulating land use in New Jersey. The MLUL permits a municipality to enact a Master Plan with a Land Use Element as defined under the statute. Upon the adoption of the Master Plan with a Land Use Element, a municipality may enact a zoning ordinance.

The comprehensive Master Plan serves as the official policy guide for influencing the location, type and extent of future development in a municipality. The Master Plan is required to contain the following:

1. A statement of objectives, principles, assumptions, policies and standards upon which proposals for the physical, economic and social development of the municipality are based; and
2. A land use plan element which will become the basis for the zoning ordinance.

The Master Plan may also include the following: a housing plan element; circulation plan element; a utility service plan element; a community facilities plan element: a recreation plan element; a conservation plan element; an economic plan element considering all aspects of economic development and sustained economic vitality; a historic preservation plan element; appendices or separate reports containing the technical foundation for the master plan and its constituent elements; and a recycling plan element. All municipalities in Bergen County have a comprehensive Master Plan.

Bergen County is currently updating its Master Plan. The last plan update was over forty years ago. The County Master Plan will take into consideration land use, transportation, environmental and water resources, housing, utilities, community facilities, open space, agriculture, parks and recreation, economic development, historic resources and other factors. Preparation of a County Master Plan falls under the power granted by the New Jersey County and Regional Planning Act.

Zoning ordinances allow for municipalities to regulate the use of land in order to protect the health, safety and welfare of the general public. All municipalities in Bergen County have a zoning ordinance.

Building codes regulate construction standards for new construction and substantially renovated buildings. The State of New Jersey has adopted the International Building Code, New Jersey Edition. The code was adopted in 2007 and re-adopted in 2009. At the state level, building and construction codes are administered by the New Jersey Department of Community Affairs (DCA). All municipalities in Bergen County have an active building code.

The floodplain ordinance is a requirement for participation in the National Flood Insurance Program (NFIP). Through its administration, municipalities can ensure that any new construction or substantial improvements to existing structures located in the floodplain are floodproofed, dryproofed, or built above anticipated flood elevations. Development may also be prohibited in certain areas. All municipalities in Bergen County have a floodplain ordinance.

The 70 Bergen municipalities will continue to incorporate mitigation planning into their daily operations. As deemed appropriate, it is expected that each municipality within Bergen County will monitor the incorporation of the goals, objectives, and recommendations of the Plan into any related plans, ordinances, and studies of the respective municipalities. The individual or group responsible for this will vary across the municipalities. Updates to and/or development of any or all of the documents or studies in **Table 5.1** below shall be reviewed by the above individual or team. The outcome of these reviews and the actions recommended shall be incorporated into the Annual Work Progress Report.

Table 5.1: Documents and Studies to be Reviewed

Master Plan
Growth Management Plan
Capital Improvement Plan/Program
Flood Damage Prevention Ordinance
Floodplain Management Plan
Flood Insurance Studies or Engineering Studies for Streams
Hazard Vulnerability Analysis
Emergency Management Plan
Zoning Ordinance
Building Code
Critical Facilities Maps
Existing Land Use Maps
Elevation Certificates
State Hazard Mitigation Plan
HAZUS Modeling

Bergen County will ensure that all jurisdictions are aware they need to incorporate hazard mitigation plan aspects into their comprehensive and master plan updates. Efforts will be made to incorporate hazard mitigation actions into the Bergen County Master plan as appropriate.

5.5 Integration of Mitigation into Ongoing and Future Planning Mechanisms

Since the 2008 Bergen County Multi-Jurisdictional Natural Hazard Mitigation Plan was developed, Bergen County has made a concerted effort to reduce the vulnerability of the planning area in its planning and daily operations. The County has implemented programs and projects to reduce the impact of these hazards. It is the intent of Bergen County and its municipalities to strengthen the focus on mitigation by continuing existing policies and by further implementing the mitigation policies included in this Plan. Implementation actions will include incorporating the goals of the plan into ongoing planning, zoning, building and engineering activities. Bergen County will encourage all of its municipalities to:

- Fund hazard mitigation projects or actions in operating budgets to the extent possible;
- Evaluate all construction projects to see if they meet the Hazard Mitigation goals and objectives;
- Use data and maps from this plan as supporting documentation in grant applications;
- Ensure local planning board or economic development groups identify hazard areas when assisting new businesses in finding a location;
- Look at mitigation actions when allocating funding for the municipal budgets;
- Incorporate hazard mitigation actions in daily operations and on all projects;
- Include hazard mitigation when updating municipal ordinances;
- Identify hazard areas in updates of comprehensive plans to identify land use issues; and
- Review the hazard mitigation plan prior to land use or zoning changes, and permitting or development decisions.

The information on hazard, risk vulnerability and mitigation contained in this Plan is based on the best information available at this time of this Plan's preparation. For example, as noted in Section 3, HAZUS modeling software was not utilized for this Plan update, but will be used for the next update in 5 years. It is recognized by all participating jurisdictions that this information can be very useful for decision making under other planning programs, including comprehensive plans, capital improvement plans, and emergency operation plans. Bergen County and its municipalities will make every effort to implement relevant sections of or data contained within this plan utilizing existing municipal processes, described below.

Administrative

Administrative processes include departmental or organizational work plans, policies or procedural changes. These could be addressed in the following departments:

- Public Works
- Building/Engineering
- Planning
- Emergency Services
- Health and Social Services
- Transportation
- Business and Economic Development

It is recommended that Bergen County include a reference to this Plan in the risk reduction section of the Bergen County Emergency Operations Plan and in all Bergen County Municipal Emergency Operations Plans. The updated Bergen County Master Plan will also reference this Plan.

Budgetary

In terms of budgetary processes, the county will review capital budgets and if funding is available include a line item for mitigation actions and will maximize mitigation aspects of proposed projects, and will encourage municipalities to do likewise.

Regulatory

Regulatory measures such as the creation of executive orders, ordinances, and other regulatory directives will be considered to support hazard mitigation in the following areas:

- Comprehensive Planning - Institutionalize hazard mitigation for new construction and land use.
- Zoning and Ordinances
- Building Codes - enforcement of codes or higher standard in hazard areas
- Capital Improvements Plan - Ensure that new construction in identified hazard areas is designed to mitigate risk. Revise requirements for this plan to include hazard mitigation in the design of new construction.
- National Flood Insurance Program – Continue participation in this program and increase participation in Community Rating System Program
- Continue to implement storm water management plans.
- Review all future amendments to master plans, zoning ordinances, capital improvement plans, or other mechanisms that control development to ensure consistency with the hazard mitigation plan.

Funding

Bergen County will encourage its municipalities to apply for grants from federal or state government, nonprofit organizations, foundations, and private sources. These sources may include Pre-Disaster Mitigation Program (PDM), Flood Mitigation Assistance Program (FMA), and the Hazard Mitigation Grant Program (HMGP-Stafford Act, Section 404). Grant opportunities may also be available from the Department of Housing and Urban Development’s Community Development Block Grant (CDBG) Program.

Other potential federal funding sources include:

- Stafford Act, Section 406 – Public Assistance Program Mitigation Grants
- Federal Highway Administration
- Catalog of Federal Domestic Assistance
- United States Fire Administration – Assistance to Firefighter Grants
- United States Small Business Administration Pre and Post Disaster Mitigation Loans
- United States Department of Economic Development Administration Grants
- United States Army Corps of Engineers
- United States Department of Interior, Bureau of Land Management

Partnerships

The following opportunities for partnerships will be encouraged, where applicable, to provide a broader support and understanding of hazard mitigation:

Local Government Committees:

- Environmental Commissions
- Planning Boards
- Zoning Board of Appeals
- Shade Tree Commissions
- Media and Communications
- Merchants Association
- Property Owners Association
- County Park Commission

Creative Partnerships for Funding and Incentives

Public-Private Partnerships including utilities and businesses

State Cooperation

In-kind resources

Working with other Federal, State, and Local Agencies

- Army Corps of Engineers (USACE)
- American Red Cross
- Department of Homeland Security (DHS)
- Federal Emergency Management Agency (FEMA)
- National Oceanic and Atmosphere Agency (NOAA)
- National Weather Service (NWS)
- New Jersey Department of Transportation (NJDOT)
- New Jersey Department of Environmental Protection (NJDEP)
- NJ State Police Office of Emergency Management (SEMO)
- United States Department of Agriculture (USDA)
- United States Department of Transportation (USDOT)
- United States Geological Service (USGS)
- Watershed Associations

6. Plan Adoption

WHAT'S NEW IN CHAPTER 6?

- *The sample Resolution Adoption has been updated*

In accordance with FEMA requirements for multi-jurisdictional mitigation planning, it is the intention that Bergen County, the NJMC, and all constituent municipalities of the county, adopt resolutions approving the Bergen County Multi-Jurisdictional All-Hazards Mitigation Plan. Adoption by the local governing bodies demonstrates the commitment of Bergen County and each participating jurisdiction to fulfill the mitigation goals and objectives outlined in the Plan. Adoption legitimizes the Plan and authorizes responsible agencies to execute their responsibilities.

Each participating jurisdiction will proceed with formal adoption proceedings once FEMA provides conditional approval of this Plan, known as Approval Pending Adoption (APA) and each participating jurisdiction understands that a conditional approval of the Plan will be provided for those municipalities that meet the planning requirements with the exception of the adoption requirement as stated above. The resolution to support adoption of the plan by each jurisdiction is included on the following page.

Following adoption or formal action on the Plan, each participating jurisdiction must submit a copy of the resolution or other legal instrument showing formal adoption (acceptance) of the Plan to the Bergen County Office of Emergency Management. BCOEM will forward the executed resolutions to the NJOEM – Mitigation Division, and they will be subsequently forwarded to FEMA. Each participating jurisdiction understands that FEMA will transmit acknowledgement of verification of formal plan adoption and the official approval of the plan to the mitigation plan coordinator.

**A RESOLUTION OF THE Governing Body OF THE Jurisdiction Name
AUTHORIZING THE ADOPTION OF THE
BERGEN COUNTY MULTI-JURISDICTIONAL
ALL-HAZARDS MITIGATION PLAN**

WHEREAS, all of Bergen County has exposure to natural hazards that increase the risk to life, property, environment and the County’s economy; and

WHEREAS; pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

WHEREAS, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre and post disaster hazard mitigation programs; and

WHEREAS; a coalition of Bergen County municipalities with like planning objectives has been formed to mutually develop a mitigation plan and create consistent mitigation strategies within Bergen County; and

WHEREAS, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy;

NOW, THEREFORE, BE IT RESOLVED that the [jurisdiction name]:

- 1) Adopts in its entirety, the Bergen County Multi-Jurisdictional All-Hazards Mitigation Plan (the “Plan”) as the jurisdiction’s Natural Hazard Mitigation Plan, and resolves to execute the actions identified in the Plan that pertain to this jurisdiction.
- 2) Will use the adopted and approved portions of the Plan to guide pre- and post-disaster mitigation of the hazards identified.
- 3) Will coordinate the strategies identified in the Plan with other planning programs and mechanisms under its jurisdictional authority.
- 4) Will continue its support of the Mitigation Planning Committee as described within the Plan.
- 5) Will help to promote and support the mitigation successes of all participants in this Plan.
- 6) Will incorporate mitigation planning as an integral component of government and partner operations.
- 7) Will provide an update of the Plan in conjunction with the County no less than every five years.

PASSED AND ADOPTED on this Xst, Xnd, Xrd, Xth day of month, 2014, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

Mayor, Town of _____

ATTEST: _____
Clerk, Town of _____

Appendix A: Public Outreach Materials

Bergen County Plan Update “Kickoff” Meeting Presentation

February 12, 2013



Bergen County Multi-Jurisdictional Natural Hazard Mitigation Plan 2013 Update: **Mitigation Planning Workshop**

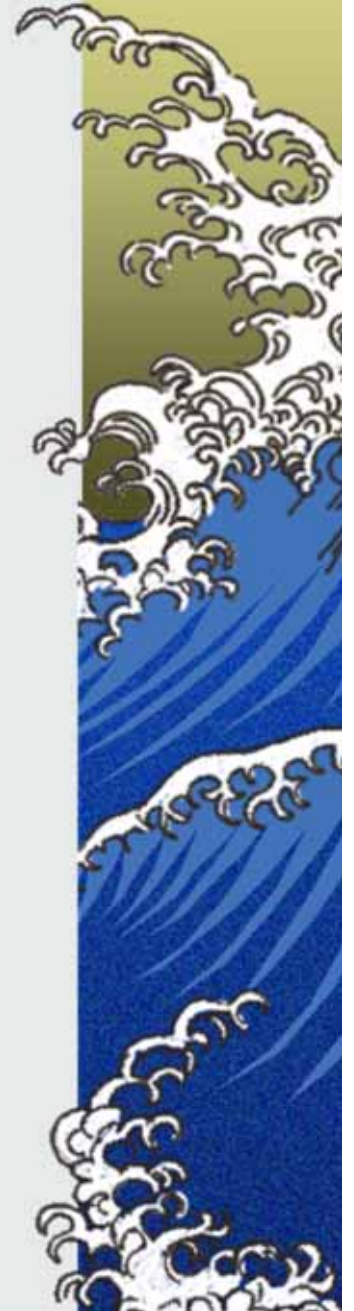
Bergen County Office of Emergency
Management
New Jersey Meadowlands Commission

February 12, 2013



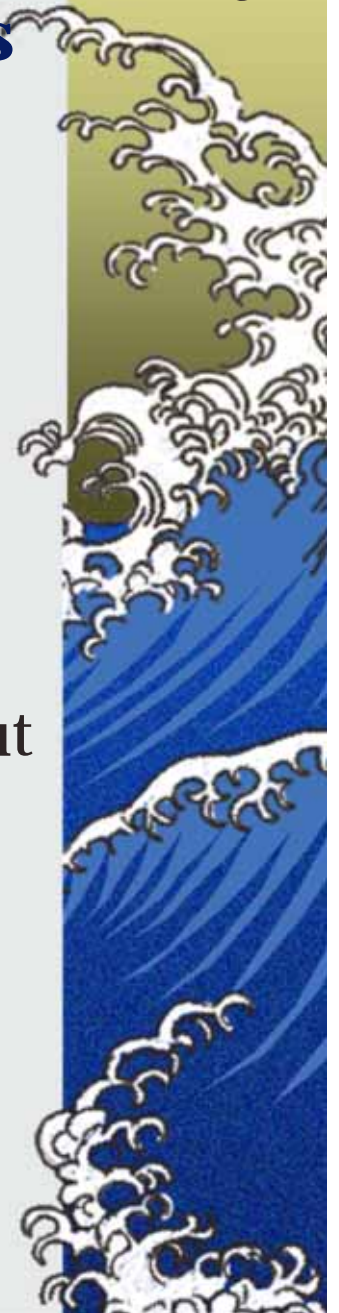
Presentation Agenda

- Introduction to the Plan and Planning Process
- Benefits of Plan
- Description of Data Required
- Questions



Introduction to the Plan and Planning Process

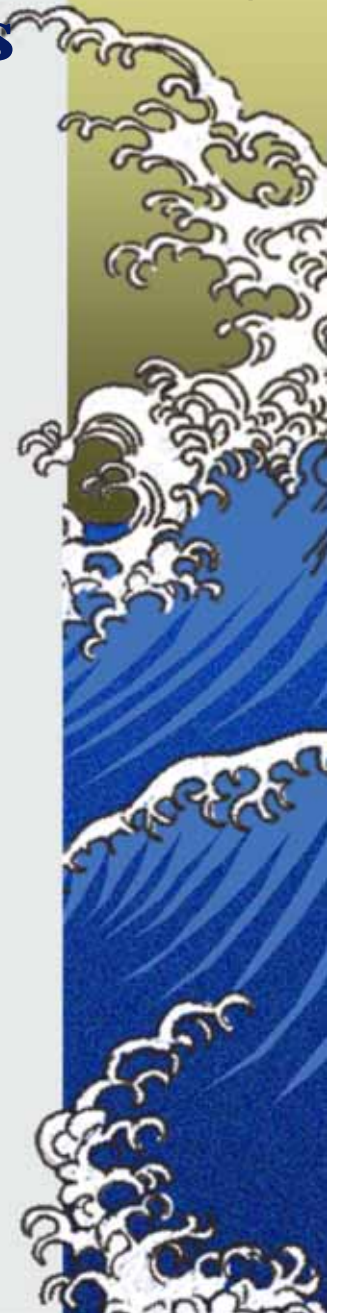
- On October 30th, 2000, the President signed into law the Disaster Mitigation Act of 2000, also known as DMA 2000.
- DMA 2000 requires local governments to develop and submit mitigation plans as a condition of receiving Hazard Mitigation Grant Program (HMGP) project grants.
- A regional planning body can develop the plan but local jurisdictions that do not cooperate in the process will not be eligible for any future grant assistance.



Introduction to the Plan and Planning Process

Congress found that:

- Natural disasters, including earthquakes, tsunamis, tornadoes, hurricanes, flooding, and wildfires, pose great danger to human life and to property throughout the United States;
- Greater emphasis needs to be placed on risk assessment and identification, implementation of mitigation measures, and maintaining critical services;
- Expenditures for post disaster assistance are increasing without commensurate reductions in the likelihood of future losses from natural disasters; and
- High priority should be given to funding the mitigation of hazards at the local level.



Introduction to the Plan and Planning Process

Planning Process Requirements:

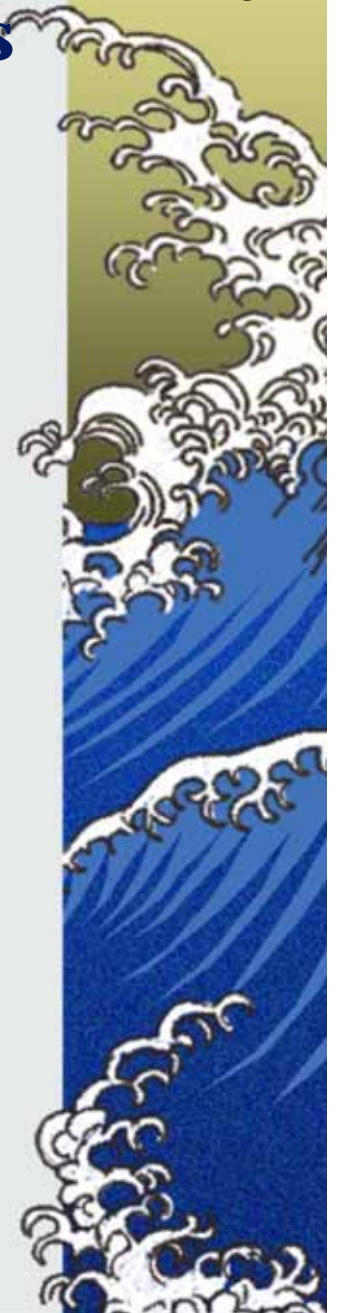
1. Build a planning group and communication system to provide for involvement and input.
2. Review and request existing studies and data.
3. Identify hazards, vulnerabilities and impacts to determine and prioritize mitigation action.
Hazards include coastal storms, dam/levee failures, droughts, fires, floods, hurricanes, winter ice storms, snow, and windstorms.



Introduction to the Plan and Planning Process

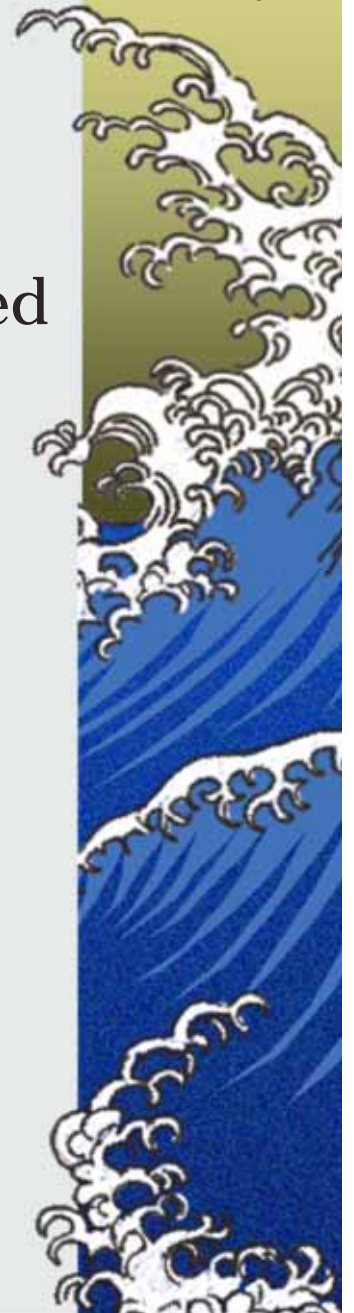
Planning Process Requirements:

4. Develop a mitigation strategy to provide a blueprint for reducing the potential losses identified above
 - Include a prioritization system
 - Include a cost/benefit analysis
5. Develop a method and schedule of monitoring and evaluating the plan
6. Bergen County must adopt
7. New Jersey OEM must review
8. FEMA must approve



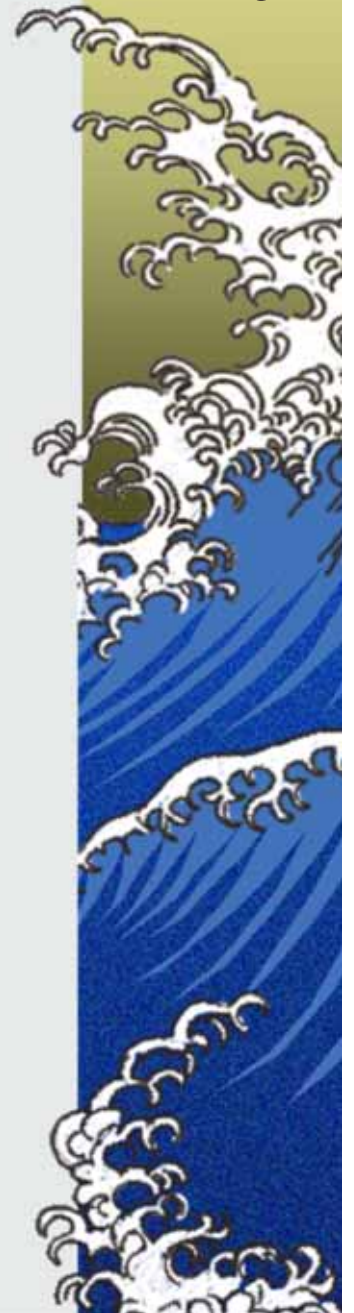
Benefits of the Plan

- Reduced loss of life and property
- Reduced short-term and long-term costs associated with recovery and reconstruction
- Defensible list of priorities ranked based on severity and the benefit of each proposed mitigation concept vs. cost
- Increased cooperation and communication between the 70 communities in the planning area



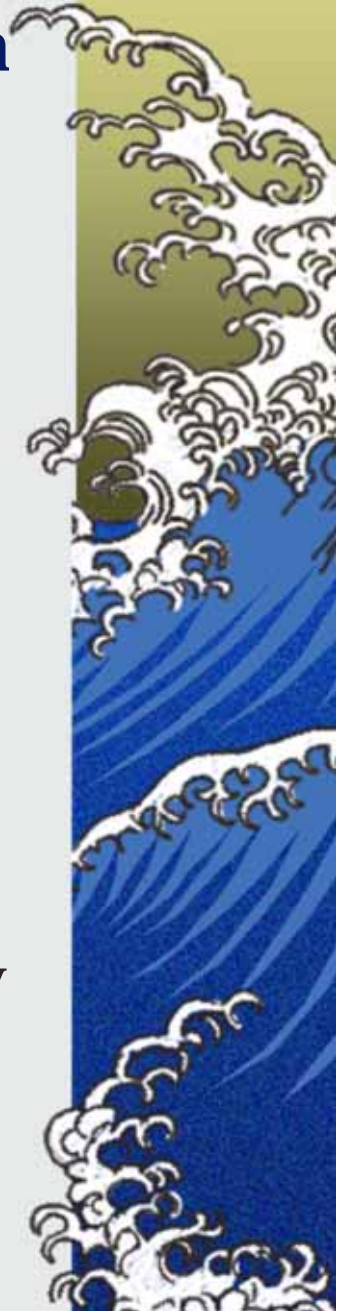
Benefits of the Plan

- Expedited pre-disaster and post-disaster grant funding:
 - Pre-Disaster Mitigation (PDM) and Hazard Mitigation Grant Program (HMGP) project grants only available to those with an adopted Plan
 - No Plan = No Grants



Neighborhood and Facility Assessment Form

- Socioeconomic Factors
- Codes and Ordinances
- Land Uses
- Natural Hazards Affecting Jurisdiction
- Neighborhood / Problem Area Profiles
 - Make as many copies as you need
 - Vulnerability Assessment
 - Critical Facilities
 - Again, make as many copies as necessary
 - Vulnerability Assessment



Definition of Critical Facilities

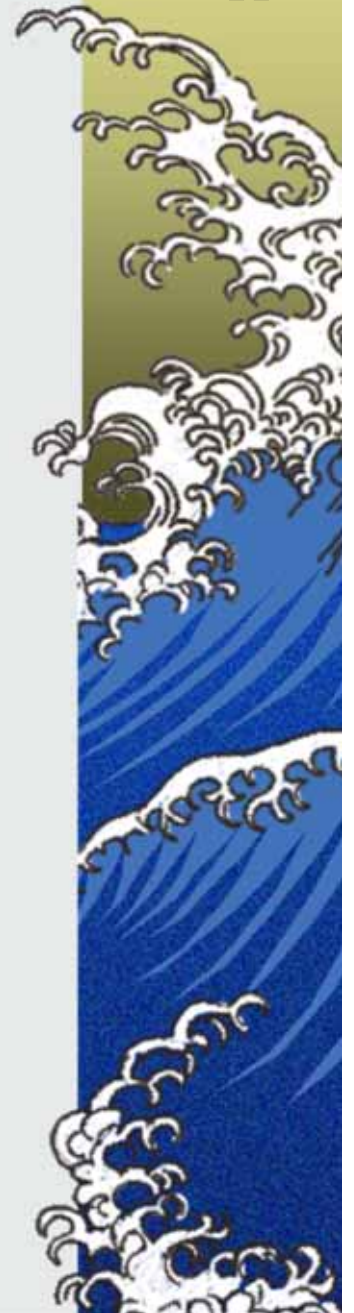
- FEMA 322 states that "A **critical facility** is a structure that, if flooded, would present an immediate threat to life, public health, and safety. Critical facilities include hospitals, facilities that produce toxic materials, and emergency operations centers."
- The related regulation at 44 CFR § 206.226 states that "The facility provides **critical services**, which include power, water, sewer services, wastewater treatment, communications, emergency medical care, fire department services, emergency rescue, and nursing homes."



Recent Event Analysis Form

FILL OUT ONE FOR EACH EVENT SINCE 2008

- Identify the primary natural hazard
- Photos, maps, and other supporting documents
- Define secondary natural hazard
- Rate magnitude
- Estimate costs
- Evaluate mitigation effectiveness
- Define needs highlighted
- Current mitigation initiatives



Recent Event Analysis Form

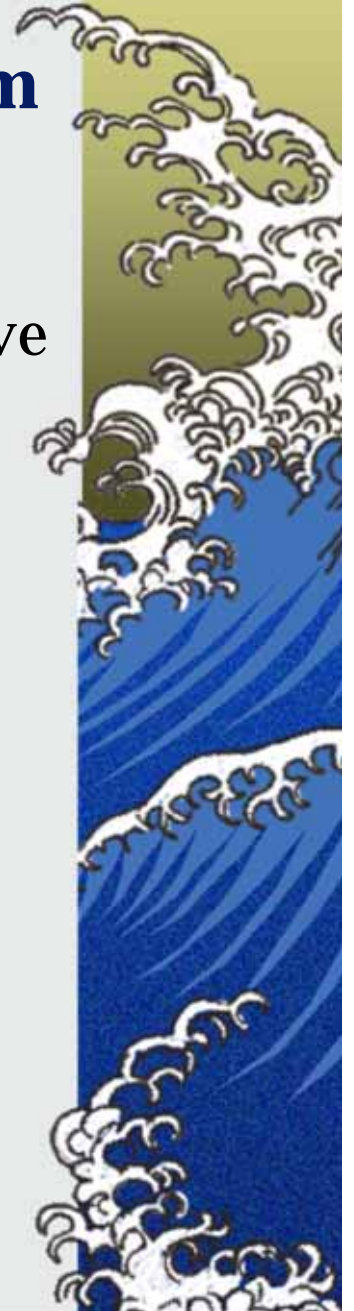
Estimate Costs

- Direct Damage
 - Immediate, first-order damage, the result of a natural disaster with no intervening effect or mechanism between act and outcome, and are usually easily recognizable
- Indirect Damage
 - Indirect damage tends to be delayed and may be difficult to recognize and is often a cumulative or cascading result of many combined disasters.



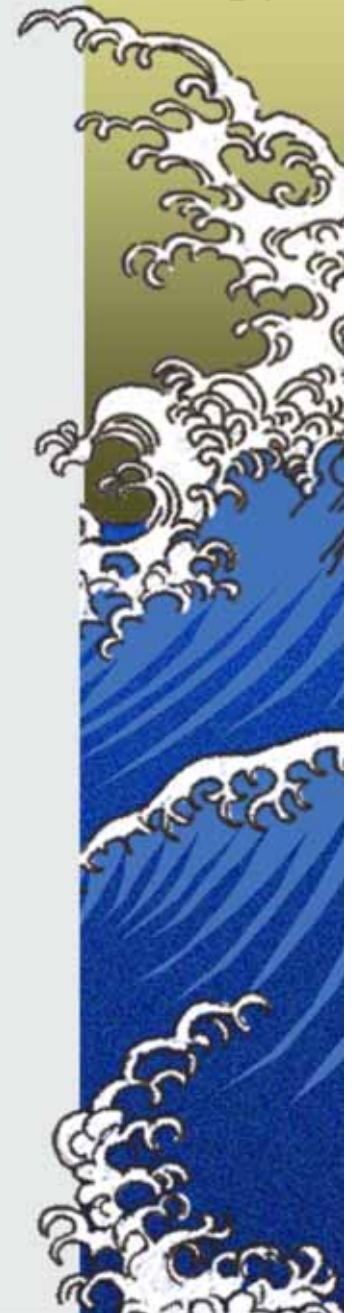
Repetitive Loss Property Documentation Form

- A structure for which two or more losses of more than \$1,000 (building and contents combined) have been paid during the most recent 10-year period.

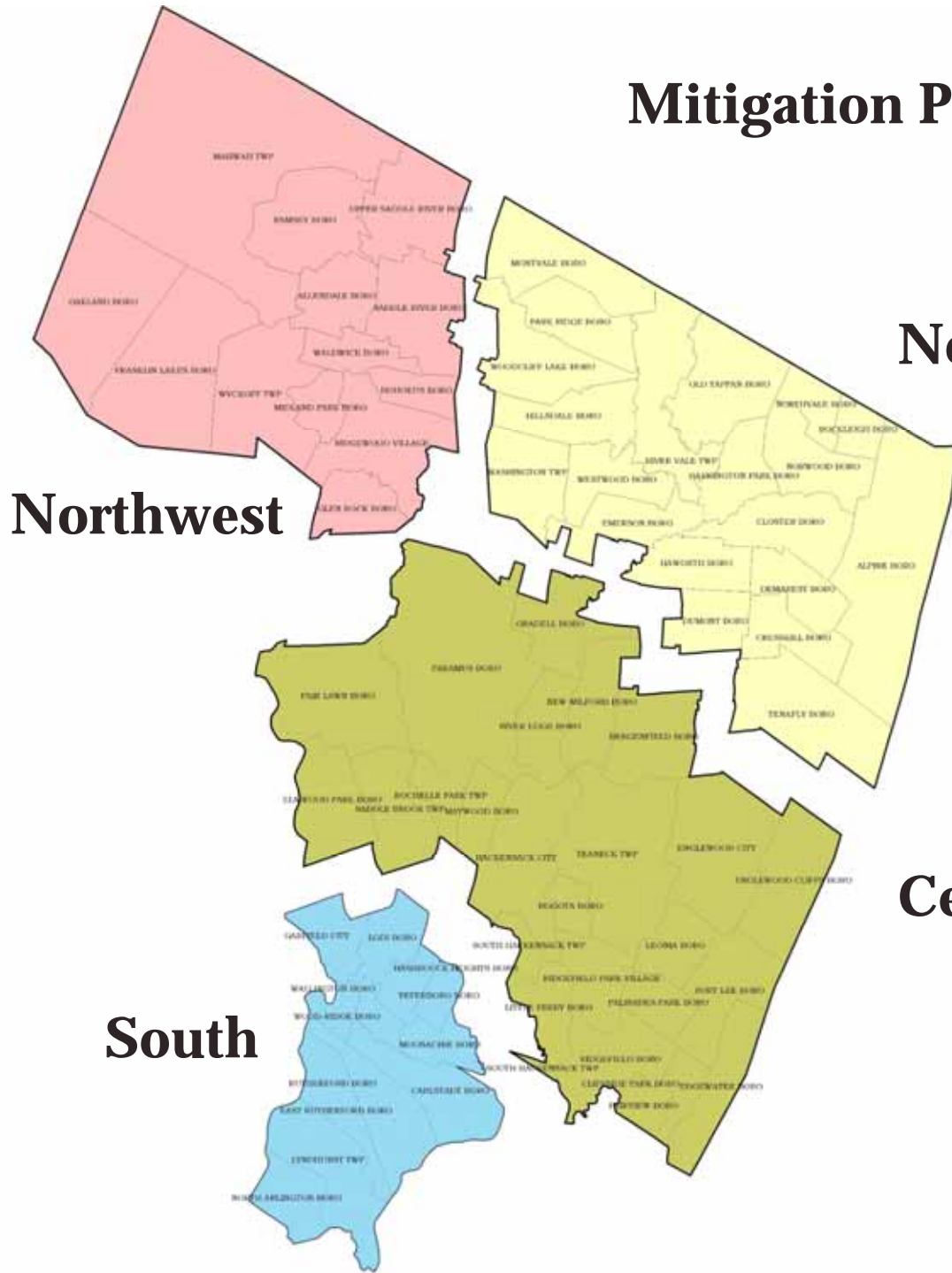


Timetable

- **The NJMC and BCOEM must have all data by April 15, 2013.**
- Deficiency Notices will be sent by April 30, 2013. These notices will request additional information or deem a submission complete.
- If you need assistance, please ask as we are here to assist you.
- The next meeting will be a workshop hosted by BCOEM on **June 19, 2013.**



Mitigation Planning Districts

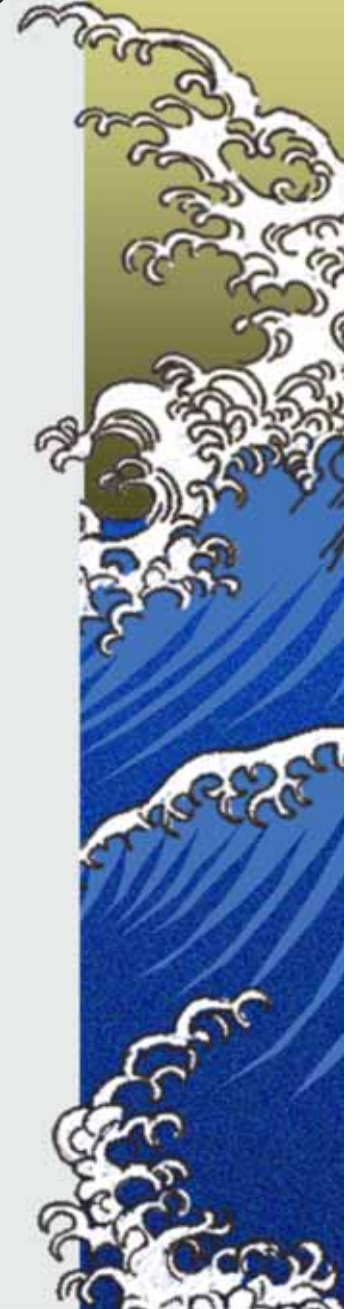


Northwest

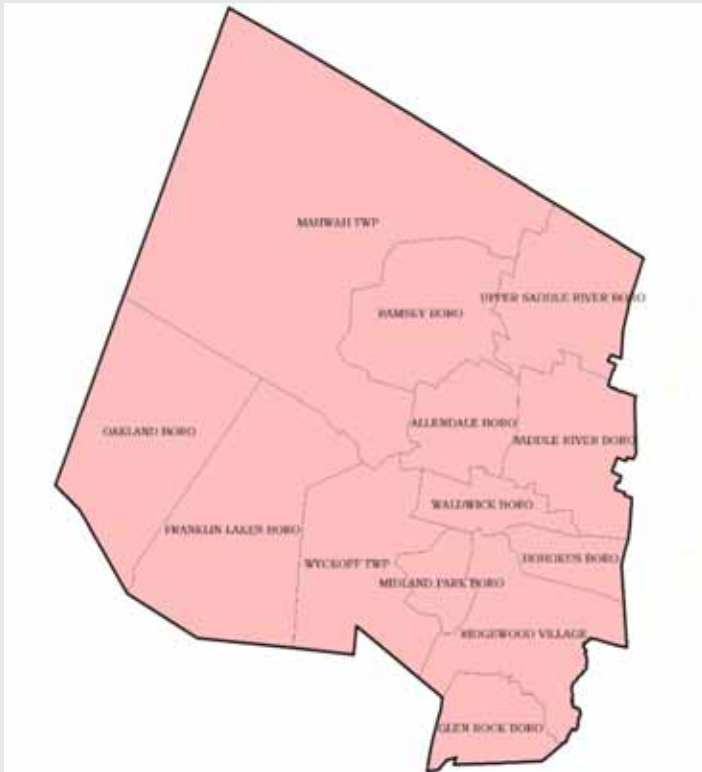
Northeast

Central

South



Mitigation Planning District Assignments



Northwest

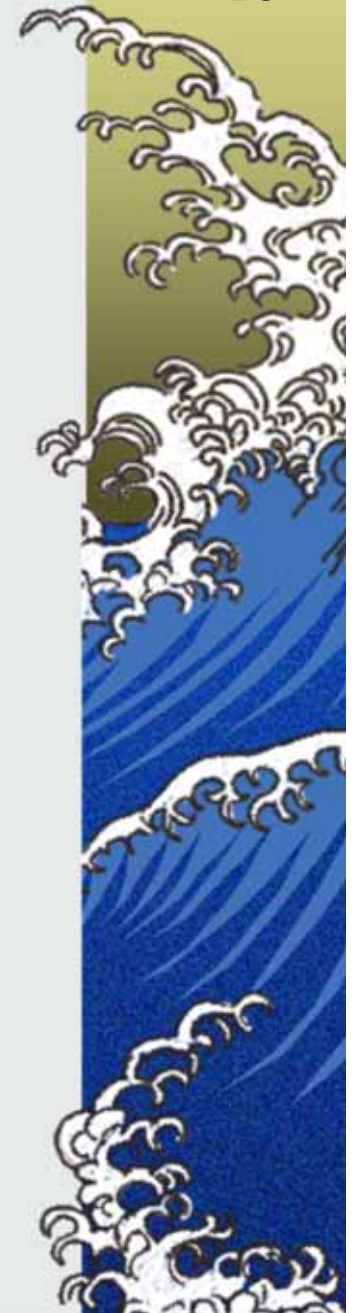
Allendale Boro
Franklin lakes Boro
Glen Rock Boro
Ho-Ho-Kus Boro
Mahwah Twp
Midland Park Boro
Oakland Boro
Ramsey Boro
Ridgewood Village
Saddle River Boro
Upper Saddle River Boro
Waldwick Boro
Wyckoff Twp

Larry Scorzelli

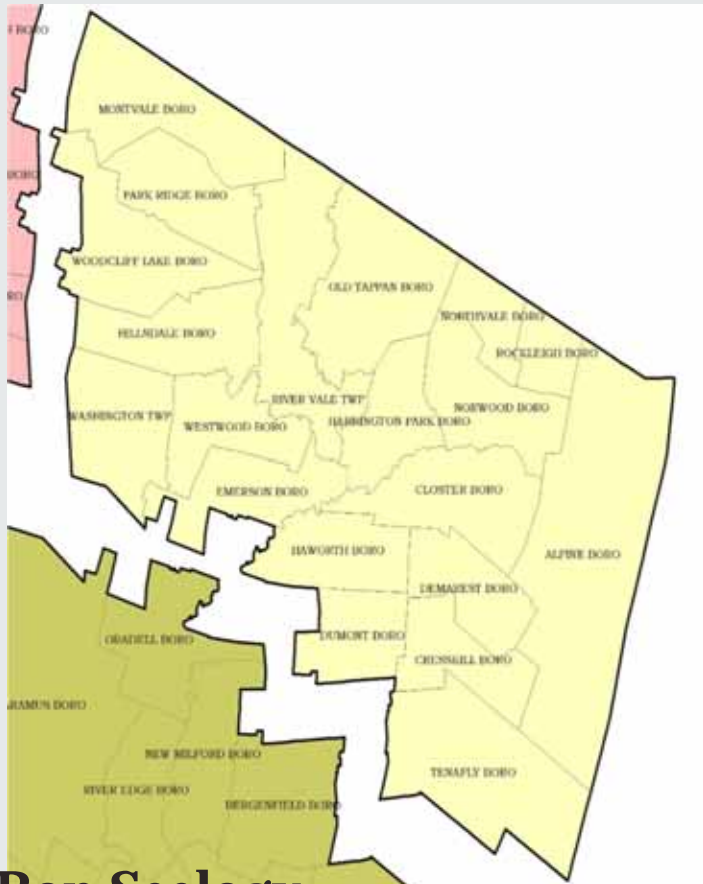
Larry.scorzelli@njmeadowlands.gov or (201) 777-2408

Ralph Venturini

Ralph.venturini@njmeadowlands.gov or (201) 460-4639



Mitigation Planning District Assignments



Northeast

Alpine Boro
 Closter Boro
 Cresskill Boro
 Demarest Boro
 Dumont Boro
 Emerson Boro
 Harrington Park
 Boro
 Haworth Boro
 Hillsdale Boro
 Montvale Boro

Northvale Boro
 Norwood Boro
 Old Tappan Boro
 Park Ridge Boro
 River Vale Boro
 Rockleigh Boro
 Tenafly Boro
 Washington Twp
 Westwood Boro
 Woodcliff Lake
 Boro

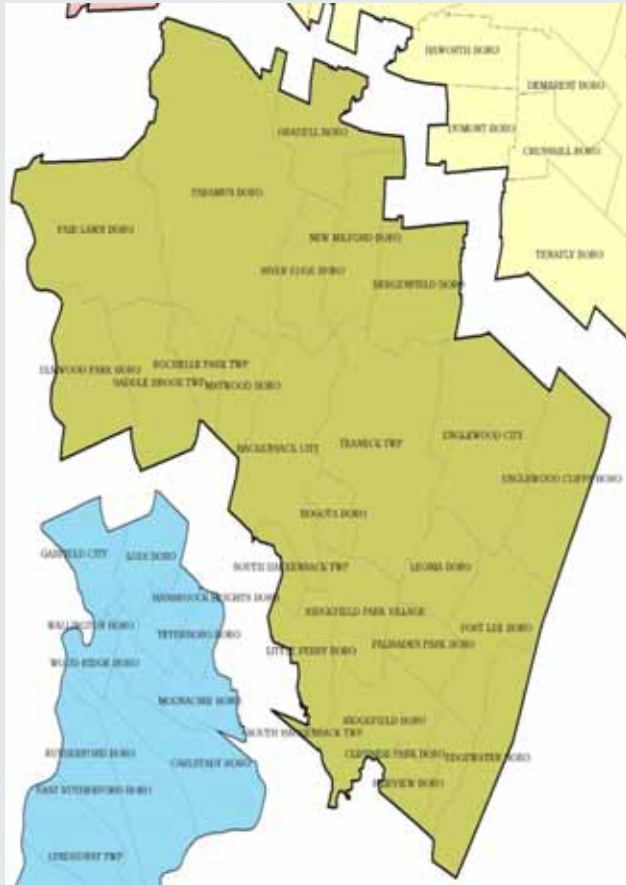
Ron Seelogy

Ron.seelogy@njmeadowlands.gov or (201) 460-4532

Christina Barile

Christina.barile@njmeadowlands.gov or (201) 460-4655

Mitigation Planning District Assignments



Central

Bergenfield Boro
Bogota Boro
Cliffside Park Boro
Edgewater Boro
Elmwood Park Boro
Englewood City
Englewood Cliffs
Boro
Fair Lawn Boro
Fairview Boro
Fort Lee Boro
Hackensack City
Leonia Boro
Maywood Boro

New Milford
New Milford Boro
Oradell Boro
Palisades Park Boro
Paramus Boro
Ridgefield Boro
Ridgefield Park Village
River Edge Boro
Rochelle Park Twp
Saddle Brook Twp
South Hackensack
Twp
Teaneck Twp

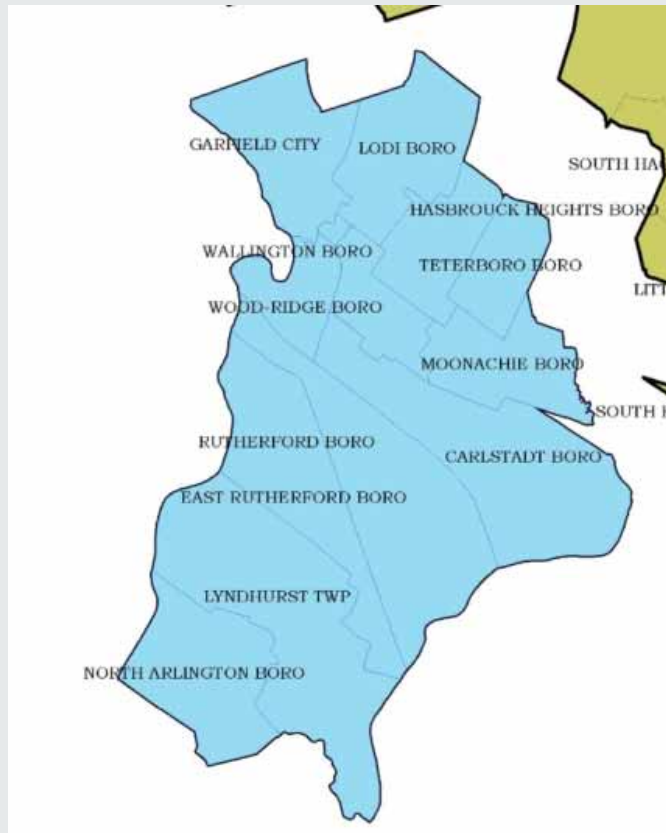
Brandon Alviano

Brandon.alviano@njmeadowlands.gov or (201) 460-4616

Mark Skerbetz

Mark.skerbetz@njmeadowlands.gov or (201) 460-8132

Mitigation Planning District Assignments



South

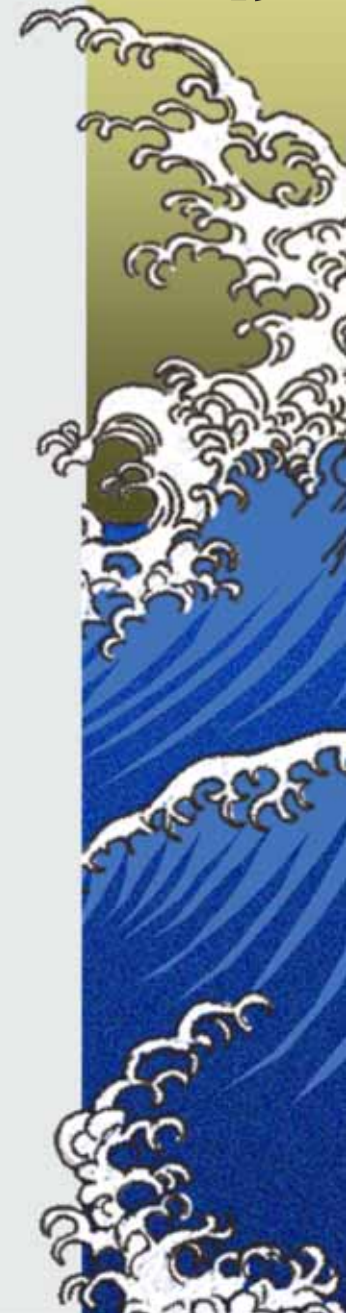
Carlstadt Boro
East Rutherford Boro
Garfield City
Hasbrouck Heights Boro
Little Ferry Boro
Lodi Boro
Lyndhurst Twp
Moonachie Boro
North Arlington Boro
Rutherford Boro
Teterboro Boro
Wallington Boro
Wood-Ridge Boro

Mia Petrou

Mia.petrou@njmeadowlands.gov or (201) 460-4672

Fawzia Shapiro

Fawzia.shapiro@njmeadowlands.gov or (201) 460-4673



Questions

20

Cheryl Rezendes

Cheryl.rezendes@njmeadowlands.gov

(201)460-8036

Margie LaNeve

Margie.laneve@njmeadowlands.gov

(201)460-4661

Gabrielle Gornelli

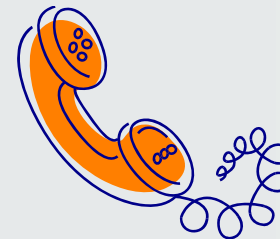
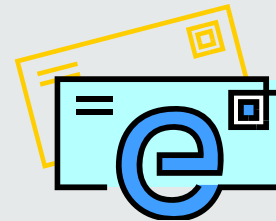
Gabrielle.gornelli@njmeadowlands.gov

(201)777-2422

Ralph Venturini

Ralph.venturini@njmeadowlands.gov

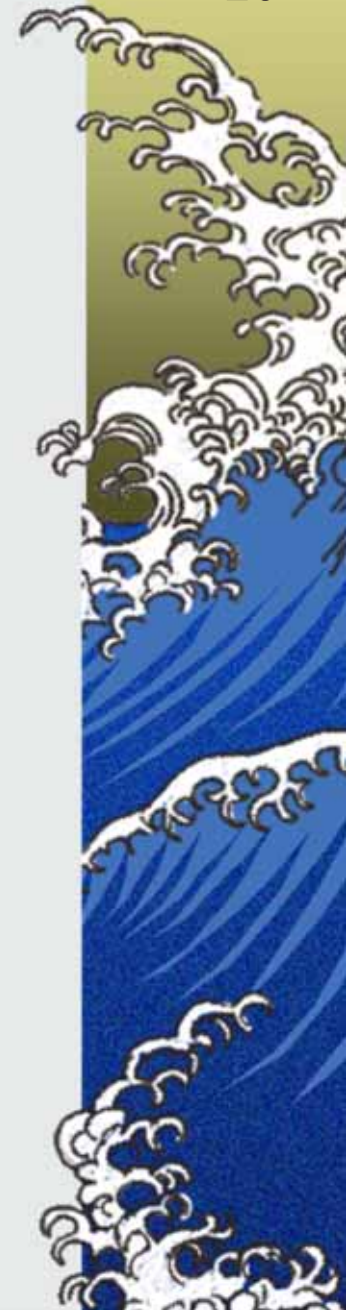
(201)460-4639



**Copies of the 2008 Natural Hazard Mitigation Plan can be found
on the BCOEM website at**

www.bcoem.org

Click on “All Hazard Mitigation Plan”



Flyers for Bergen County Plan Update Mitigation Strategy Workshops

Held on June 26 and 27, 2013



FEMA

Mitigation Strategy Workshop for the 2013 Bergen County Multi-Jurisdictional Natural Hazard Mitigation Plan Update



A Multi-Jurisdictional Hazard Mitigation Plan is only as good as its mitigation strategy. Join FEMA, the Bergen County Office of Emergency Management (BCOEM) and the New Jersey Meadowlands Commission (NJMC) at this interactive workshop to learn more about hazard mitigation strategies for your communities and Bergen County.

When:

Wednesday, June 26, 2013 1-3 PM

Where:

*Bergen County Law and Public Safety
Institute
"Hall of Heroes"
281 Campgaw Road
Mahwah, New Jersey 07430*

Who should come:

Elected officials, planners, public works officials, building code officials, emergency management coordinators and NFIP floodplain administrators from your municipality.

What to bring:

Ideas to help make your community more resilient in the future.

This is a chance to begin to:

- Develop actions to reduce risk and make all of Bergen County's communities more disaster-resilient
- Develop cost-effective actions that save money in the long run
- Build a strategy for the successful implementation of Bergen County's mitigation action plan
- Coordinate with other local officials, planners and stakeholders on potential hazard mitigation ideas and projects
- Use worksheets, examples and other tools to enable all of Bergen County's communities to build mitigation strategies that make connections between natural hazard risk, action and implementation
- Communicate directly with FEMA planners to understand how to develop an effective and worthwhile Hazard Mitigation Plan

Please RSVP to Kelly King at the New Jersey Meadowlands Commission at 201-460-4627 or kelly.king@njmeadowlands.gov



FEMA

Mitigation Strategy Workshop for the 2013 Bergen County Multi-Jurisdictional Natural Hazard Mitigation Plan Update



A Multi-Jurisdictional Hazard Mitigation Plan is only as good as its mitigation strategy. Join FEMA, the Bergen County Office of Emergency Management (BCOEM) and the New Jersey Meadowlands Commission (NJMC) at this interactive workshop to learn more about hazard mitigation strategies for your communities and Bergen County.

When:

Thursday, June 27, 2013 1-3 PM

Where:

Bergen County Law and Public Safety Institute
"Hall of Heroes"
281 Campgaw Road
Mahwah, New Jersey 07430

Who should come:

Elected officials, planners, public works officials, building code officials, emergency management coordinators and NFIP floodplain administrators from your municipality.

What to bring:

Ideas to help make your community more resilient in the future.

This is a chance to begin to:

- Develop actions to reduce risk and make all of Bergen County's communities more disaster-resilient
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Please RSVP to Kelly King at the New Jersey Meadowlands Commission at 201-460-4627 or kelly.king@njmeadowlands.gov

Flyer for Bergen County Plan Update Mitigation Strategy Meetings

Held on February 12, 13 and 28, 2014

Bergen County Multi-Jurisdictional Natural Hazard Mitigation Plan Update: Mitigation Strategy Meeting



PLEASE JOIN US

Join the Bergen County Office of Emergency Management (BCOEM) and the NJ Office of Emergency Management (NJOEM) to get a status update on the progress of the Plan and learn more about hazard mitigation strategies for your communities and Bergen County.

It is crucial that all Bergen County towns participate by attending one of the sessions.

This will ensure that hazard mitigation funding is not jeopardized for your community, while also fulfilling the public outreach requirements for the plan update.

WHO SHOULD COME

Residents, elected officials, planners, public works officials, building code officials, emergency management coordinators and NFIP floodplain administrators from your municipality.

PLEASE ATTEND ONE OF THE FOLLOWING MEETINGS:

WEDNESDAY, FEBRUARY 12, 2014 at 1:00 P.M.

Bergen County Law and Public Safety Institute

"Hall of Heroes"

281 Campgaw Road

Mahwah, New Jersey 07430

THURSDAY, FEBRUARY 13, 2014 at 10:00 A.M.

New Jersey Meadowlands Commission Auditorium

Two DeKorte Park Plaza

Lyndhurst, NJ 07071

THURSDAY, FEBRUARY 13, 2014 at 7:00 P.M.

Bergen County Police Department

1st Floor Auditorium

327 East Ridgewood Avenue

Paramus, NJ 07652

Please RSVP to

Cheryl Rezendes: 201-460-8036 or
cheryl.rezendes@njmeadowlands.gov

Presentation for Bergen County Plan Update Mitigation Strategy Meetings

Held on February 12, 13 and 28, 2014

Bergen County Multi-Jurisdictional Natural Hazard Mitigation Plan

**Mitigation Strategy Meeting
February 12-13, 2014**

Why Are We Here?

Mitigation Planning Process assists with -

▪ **Public Support**

- Involves stakeholders
- Builds political commitment and partnerships

▪ **Risk Reduction**

- Saves lives and reduces property damage
- \$4 saved for every \$1 spent on mitigation

▪ **Project Implementation**

- Provides a road map for implementing projects and actions

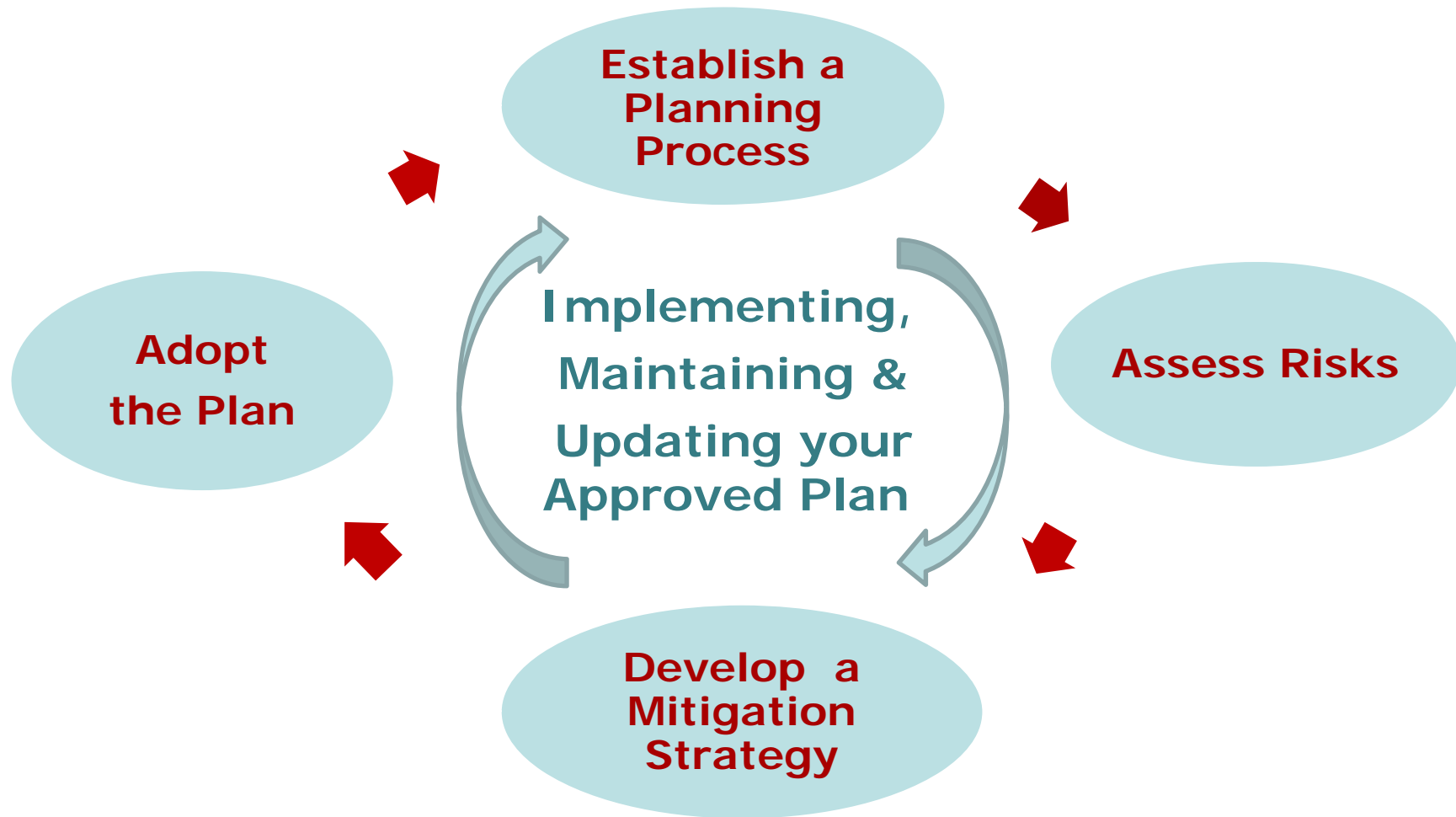
▪ **Grant Eligibility**

- Hazard Mitigation Assistance (HMA) grant funding requires an approved plan

Hazard Mitigation



Mitigation Planning Cycle



MITIGATION STRATEGY

- **Focus on mitigation**
- **Address risk findings**
- **Analyze a range of actions**
- **Align with community capabilities**
- **Evaluate & prioritize actions**
- **Prepare implementation plan**

FOCUS ON MITIGATION

Mitigation is any sustained action taken to reduce long-term risk to life and property from a hazard event



Mitigation
elevated home by the river



Mitigation
property acquisition



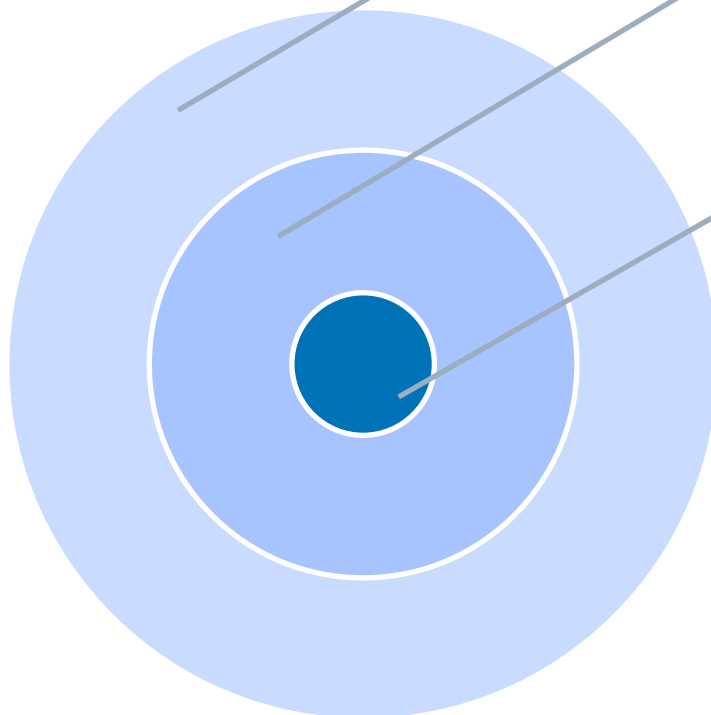
Preparedness & Response
purchase of a police
command vehicle

Which Actions are Mitigation?

- **Examine the actions in your latest plan**
 - **Note on plan if they are mitigation**
 - *Not preparedness or response*
 - *Not maintenance activities*

ADDRESS RISK FINDINGS

*Actions should address
Risk Findings*



Asset Inventory:

14 critical facilities
in the Town

Risk Finding:

3 critical facilities in
floodplain vulnerable
to flooding

Action: Relocate
police station and
day-care facility

Action Worksheet

- A worksheet for each action that brings together material all in one place
- Indicates connections between risk, action & implementation
- Provides an adaptable framework that allows input of meaningful text
- See *Action Worksheet example*

Action Worksheet: Acquisition Example	
Your plan name	County A Hazard Mitigation Plan
Your community name	Village B
Community action number	Village B#1
Assessing the Risk	
Hazard(s) addressed	Flood
Risk finding	12 Repetitive Loss Properties located in a neighborhood with combined losses of \$4.3 million over past 30 years.
Describing the Action	
Action category	Structure/infrastructure projects and planning mechanisms
Action type	Acquisition
Action description	Acquire 12 of the Repetitive Loss Properties in neighborhood A
Existing, future &/or N/A	Existing structures and future development
Evaluating the Action	
Risk reduction (losses avoided)	Removes flooding problem. May not pass benefit-cost analysis (BCA)
Technical	ok
Political	Potential effect on tax base. Support from residents for this voluntary program.
Legal	ok
Environmental	Open space created may be candidate for wetlands restoration
Social	ok
Administrative capability	ok
Local champion	no
Other community objectives	Supports open-space preservation
Implementing the Action	
Priority	High
Local planning mechanism	Modify comprehensive plan and zoning to identify land as open space during next scheduled updates.
Responsible party	Village B (Planning Department, Public Works)
Cost estimate	\$4.2 million
Potential funding sources	HMGP, RFC, SRL and FMA. For 25% local match, in-kind services, county and village open-space fund, Community Development Block Grant (CDBG) and NFIP Increased Cost of Compliance (ICC).
Time line	3 years
Reporting on Progress	
Action progress status	Ongoing. Obtained HMGP grant and acquired 5 of 12 flood-prone properties to date. See Progress Report for more information.

Risk Findings: Summarize as Problem Statements



Risk Findings

12 Repetitive Loss Properties located in one neighborhood with one of the highest combined claim amounts (\$4,300,000) over past 30 years.

Emergency Operations Center experienced roof and window damage during Hurricane Irene

Public understanding of mitigation, mitigation programs and their benefits is limited.

Identify Actions that Address Risk

Risk Findings	Mitigation Actions
12 Repetitive Loss Properties located in neighborhood with one of the highest combined claim amounts (\$4,300,000) over past 30 years.	Acquire (or elevate) Repetitive Loss Properties
Emergency Operations Center experienced roof and window damage during Hurricane Irene	Retrofit Critical Facilities with storm shutters and wind-resistant roofing materials
Public understanding of mitigation, mitigation programs, and their benefits is limited	Develop a public outreach program

ANALYZE A COMPREHENSIVE RANGE OF ACTIONS



STRUCTURAL PROJECTS

Acquisition
Elevation
Retrofits
Drainage

PLANNING MECHANISMS

Zoning Codes
Ordinances
Open Space
Plan
NFIP

EDUCATION & OUTREACH

Public
Awareness
Outreach
Educational
Programs

NATURAL RESOURCE PROTECTION

Stream and
Wetland
Restoration
Erosion Control

For Multi-jurisdictional Plans

While each jurisdiction develops its own, unique actions, some actions may be shared or similar across jurisdictions

Participating Jurisdiction	Mitigation Action
County X	Public awareness video for local channel about “how to prepare for a high wind event”
Village Y and Town Z	Bank stabilization project along stream to remedy erosion that causes flooding in both towns
Village A	Adopt freeboard

MITIGATION STRATEGY

- ✓ **Focus on mitigation**
- ✓ **Address risk findings**
- ✓ **Analyze a range of actions**
 - **Align with community capabilities**
 - **Evaluate & prioritize actions**
 - **Prepare implementation plan**

ALIGN WITH COMMUNITY CAPABILITIES

A Community's Capabilities for Implementing Mitigation include:

- **Plans**

- Master plan, land use plan

- **Policies and Ordinances**

- Building codes, zoning

- **Programs**

- NFIP and CRS

- **Studies and Reports**

- Flood Insurance Studies, HAZUS

- **Staff and Departments**

- Planner, building code official
- Engineer, public works official
- Local floodplain administrator, GIS specialist, public information official

***Make sure your mitigation actions
are aligned with your community goals and capabilities***

EVALUATE & PRIORITIZE ACTIONS

- **Select actions that are most suitable to your community**

- Consider constraints on time, \$ and capabilities

- **Prioritization criteria**

- STAPLEE approach, will include a Cost-Benefit Review

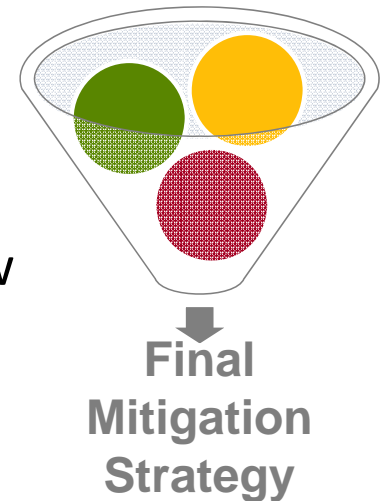
- What are the losses avoided? Risk reduced?
i.e., what is the risk reduction?

- *Will it protect lives and prevent injuries?*

- *Will it reduce damage to structures and infrastructure?*

- **What are the costs of the action?**

- **Will the losses avoided outweigh the action costs?**



Other Considerations

- **Technical Feasibility**
- **Political Support**
- **Legal**
- **Environmental**
- **Social**
- **Administrative Capability**
- **Local Champion**
- **Other Community Objectives**



PREPARE YOUR IMPLEMENTATION PLAN

- Describe the action (be specific)
- Prioritize the action
- Designate party responsible for implementation
- Identify costs and potential funding sources
- Estimate timeframe for completion
- Determine planning mechanism
- Integrate into existing planning mechanism



Clearly Link Risk, Actions & Implementation

Risk Findings	Mitigation Actions	Implementation
<p>12 Repetitive Loss Properties located in neighborhood with one of the highest combined claim amounts (\$4,300,000) over past 30 years.</p>	<p>Acquire Repetitive Loss Properties</p>	<ul style="list-style-type: none"> - Apply for HMGP to acquire properties and use in-kind services and local open-space fund as 25% match. - Modify comprehensive plan and zoning to identify land as open space.
<p>Emergency Operations Center experienced roof and window damage during Hurricane Irene</p>	<p>Retrofit EOC with storm shutters & roofing</p>	<ul style="list-style-type: none"> -Apply for an HMGP grant for the retrofit or submit to Capital Improvement Plan budget. - Institute a policy for public/critical facilities to review/mitigate these buildings for wind damage.
<p>Public understanding of mitigation and its benefits is limited.</p>	<p>Develop public outreach program</p>	<p>Post hazard mitigation information on Town website. Disseminate flyers and use social media to educate citizens about mitigation.</p>

Examples: Progress in Mitigation Actions

Mitigation Actions	Implementation	Progress Update
Acquire Repetitive Loss Properties	<ul style="list-style-type: none"> - Apply to HMGP to acquire properties; use staff time and Town conservation funds as match. 	<ul style="list-style-type: none"> -Completed partially - acquired 5 of 12 flood-prone properties, using HMGP.
Retrofit EOC with storm shutters & roofing	<ul style="list-style-type: none"> - Submit to Capital Improvement Plan budget. - Consider a policy requiring critical facilities to have higher level of wind protection. 	<ul style="list-style-type: none"> -Retrofit added to Capital Improvement budget. -New policy under consideration.
Develop public outreach program	<ul style="list-style-type: none"> -Post hazard mitigation information on Town website. -Use social media to educate citizens about mitigation. 	<ul style="list-style-type: none"> -Town website has separate webpage for mitigation and new Facebook mitigation page.

WHAT MAKES A GOOD MITIGATION STRATEGY?

- **Reflects your community's risk, capabilities and goals**
- **Benefits outweigh the costs**
- **Allows your community to seize post-disaster opportunities and implement projects**
- **Results in risk reduction and a more disaster-resistant community**

When Are the Completed Forms Due?

**ALL FORMS ARE DUE BY
MARCH 20, 2014**

Questions?

Bergen County Mitigation Plan Contacts

Cheryl Rezendes – 201-460-8036

cheryl.rezendes@njmeadowlands.gov

Debbie Lawlor – 201-777-2410

debbie.lawlor@njmeadowlands.gov

Ron Salzano – 201-785-5747

salzano@bcoem.org

Public Notices for Mitigation Strategy Meetings

Held on February 12, 13 and 28, 2014

3636270
NEW JERSEY MEADOWLANDS COMMISSIO
1 DE KORTE PARK PLZ
ATTN:ZENAIDA PEREZ/FINANCE
LYNDHURST NJ 07071-3707

The Record

STATE OF NEW JERSEY
COUNTY OF PASSAIC SS:

[Signature]

Of full age, being duly sworn according to law, on his/her oath says that he/she is employed at North Jersey Media Group, Inc., publisher of The Record. Annexed hereto is a true copy of the notice that was published on the following date(s):

2.7.2014

in The Record, a newspaper of general circulation and published in Hackensack, in the county of Bergen and circulated in Bergen, Passaic, Hudson, Morris and Essex Counties. Said newspaper is published seven days a week.

Subscribed and sworn before me this 11 day of February 2014 at Woodland Park, NJ

[Signature]
A Notary Public of New Jersey

**PUBLIC NOTICE
BERGEN COUNTY
MULTI-JURISDICTIONAL NATURAL
HAZARD MITIGATION PLAN
PUBLIC MEETINGS**

The Bergen County Office of Emergency Management and State of New Jersey Office of Emergency Management, in coordination with the New Jersey Meadowlands Commission, will be holding public meetings regarding the Mitigation Strategy for the Bergen County Multi-Jurisdictional Natural Hazard Mitigation Plan update. The 2013 Plan update documents the continued efforts of Bergen County and all of its municipalities to identify potential natural hazards and associated risks and to develop an integrated mitigation strategy. All are welcome and encouraged to attend. The planning team will be discussing the status of the Plan update, as well as providing information on acceptable mitigation strategies for inclusion in the Plan and the evaluation of any proposed strategies. Any individual or group that wishes to provide input on mitigation strategies within their municipality may do so at the meetings.

Public meetings will be held on the following dates:

WEDNESDAY, FEBRUARY 12, 2014 at 1:00 P.M.
Bergen County Law and Public Safety Institute
"Hall of Heroes"
281 Campgaw Road
Mahwah, New Jersey 07430

THURSDAY, FEBRUARY 13, 2014 at 10:00 A.M.
New Jersey Meadowlands Commission Auditorium
Two DeKorte Park Plaza
Lyndhurst, NJ 07071

THURSDAY, FEBRUARY 13, 2014 at 7:00 P.M.
Bergen County Police Department,
1st Floor Auditorium
327 East Ridgewood Avenue
Paramus, NJ 07652

Please RSVP to Cheryl Rezendes at cheryl.rezendes@njmeadowlands.gov or 201-460-8036 by Tuesday, February 11, 2014.

If there are any questions, or special requirements are needed under the Americans with Disabilities Act (ADA) please call (201)460-1700, during regular business hours.

Lt. Matthew J. Tiedemann
Bergen County Police Office of Emergency Management
February 7, 2014-fee:\$63.32 (67) 3636270

North Jersey Media
31-434-79313
\$35.00 affidavit charge

SONJA E THORSLAND
ID # 2359423
NOTARY PUBLIC
STATE OF NEW JERSEY
My Commission Expires May 03, 2015

3044733
NEW JERSEY MEADOWLANDS COMMISSION
1 DE KORTE PARK PLZ
ATTN: ZENAIDA PEREZ/FINANCE
LYNDHURST NJ 07071-3707

2644730

The Record

STATE OF NEW JERSEY
COUNTY OF PASSAIC SS:

S. Abu Thorsme

**PUBLIC NOTICE
RESCHEDULED BERGEN COUNTY MULTI-
JURISDICTIONAL NATURAL HAZARD
MITIGATION PLAN PUBLIC MEETING**

The Bergen County Office of Emergency Management and State of New Jersey Office of Emergency Management, in coordination with the New Jersey Meadowlands Commission, will be holding a rescheduled public meeting regarding the Mitigation Strategy for the Bergen County Multi-Jurisdictional Natural Hazard Mitigation Plan update. The 2013 Plan update documents the continued efforts of Bergen County and all of its municipalities to identify potential natural hazards and associated risks and to develop an integrated mitigation strategy. All are welcome and encouraged to attend. The planning team will be discussing the status of the Plan update, as well as providing information on acceptable mitigation strategies for inclusion in the Plan and the evaluation of any proposed strategies. Any individual or group that wishes to provide input on mitigation strategies within their municipality may do so at the meeting.

FRIDAY, FEBRUARY 28, 2014 at
10:00 A.M.
New Jersey Meadowlands Commission
Auditorium
Two DeKorte Park Plaza
Lyndhurst, NJ 07071

Please RSVP to Cheryl Rezendes at
cheryl.rezendes@njmeadowlands.gov or
201-460-8036 by Wednesday, February 26,
2014.

If there are any questions, or special requirements are needed under the Americans with Disabilities Act (ADA) please call (201)460-1700, during regular business hours.

Lt. Matthew J. Tiedemann
Bergen County Police Office of
Emergency Management
February 26, 2014-Fee:\$45.36(48) 3644799

Of full age, being duly sworn according to law, on his/her oath says that he/she is employed at North Jersey Media Group Inc., publisher of The Record. Annexed hereto is a true copy of the notice that was published on the following date(s):

2.26.2014

in The Record, a newspaper of general circulation and published in Hackensack, in the county of Bergen and circulated in Bergen, Passaic, Hudson, Morris and Essex Counties. Said newspaper is published seven days a week.

Subscribed and sworn before me this 26 day of February 2014 at Woodland Park, NJ

Sonja E Thorsland
A Notary Public of New Jersey

21-464-13312

*North Jersey Media Group
\$ 25.00 affidavit charge*

SONJA E THORSLAND
ID # 2359423
NOTARY PUBLIC
STATE OF NEW JERSEY
My Commission Expires May 03, 2017

**List of Outside Meetings Held with Bergen Municipalities
by the Planning Team**

Outreach Meetings Conducted by the Planning Team

	Municipality	Individual	Position	Municipality	Individual	Position
March 5, 2014	Ramsey	Ralph Venturini	OEM Coordinator, Construction Official	Woodcliff Lake	Herb Kuehlke	OEM Coordinator
March 18, 2014	Bergenfield	Tom Rose Justin Gibson	OEM Coordinator Consulting Engineer- RVE	Englewood Cliffs	Michael McMorrow	Deputy Police Chief, OEM Coordinator
March 21, 2014	Ridgefield Park	Doug Hansen	OEM Coordinator			
April 8, 2014	Cresskill	Chris Ulshoefer Kevin Terhune	Fire Dept Chief, OEM Coordinator DPW Superintendant	Saddle Brook	John Tuohy	Fire Dept Chief, OEM Coordinator
April 9, 2014	South Hackensack	Michael Ward Elliott Sachs	OEM Coordinator Consulting Engineer- Boswell			
April 10, 2014	Rochelle Park	Robert Davidson	Township Administrator			
April 16, 2014	Oakland	Richard Kunze Roy Bauberger	Borough Administrator OEM Coordinator			
April 17, 2014	Rutherford	Paul Dansbach	Fire Marshal, OEM Coordinator			
April 30, 2014	Edgewater	William Skidmore	Police Chief, OEM Coordinator			
May 7, 2014	Demarest	James Powderley	Police Chief, OEM Coordinator			
June 10, 2014	Wood-Ridge	Paul Dahl	OEM Coordinator			

**Letters to Bergen County Municipal and Surrounding County OEM Coordinators Announcing the Start
of the Comment Period for the Draft Bergen County Multijurisdictional All-Hazards Mitigation Plan**

Update



COUNTY OF BERGEN
DEPARTMENT OF PUBLIC SAFETY
DIVISION OF EMERGENCY MANAGEMENT
285 Campgaw Road • Mahwah, NJ 07430-2598 • (201) 785-5757

James J. Tedesco III
County Executive

Lt. Matthew J. Tiedemann, CEM
County Coordinator

January 12, 2015

Dear Municipal Emergency Management Coordinator,

Bergen County is currently updating the Bergen County Multi-Jurisdictional Hazard Mitigation Plan to meet the requirements of the Disaster Mitigation Act of 2000 (DMA 2000). The purpose of this plan is to identify vulnerabilities to a variety of natural and human caused disasters, and to develop plans to help minimize losses if disasters should occur. The intent of the plan is to provide a comprehensive document that takes into account the wide diversity of communities, businesses, and services that are an integral part of Bergen County and the region as a whole. In addition to its value as a hazard mitigation plan, the development of this document is also required under the DMA 2000 to ensure eligibility for Federal and State Mitigation funding.

As a Municipality within Bergen County, the effects of these disasters have been historically regional. By participating in the review of this plan, you will be engaging in the coordination of disaster mitigation planning, which is one of the intents of the Mitigation Planning Regulations (44 CFR 201).

Presently, our draft plan is now in a public review period until February 11, 2015 prior to submission to FEMA for approval. By means of this letter, the Bergen County Office of Emergency Management is seeking your participation in this important planning effort. Specifically, we encourage interested community representatives to become familiar with this process by reviewing and providing input on the draft and final plan documents by visiting www.bcoem.org, "**All Hazard Mitigation Plan**".

Any questions or comments regarding the plan can be made directly to the New Jersey Meadowlands Commission by e-mail to Cheryl.rezendes@njmeadowlands.gov. We appreciate your anticipated cooperation regarding this matter.

Sincerely,

Lieutenant Matthew J. Tiedemann, CEM
County Emergency Management Coordinator



COUNTY OF BERGEN
DEPARTMENT OF PUBLIC SAFETY
DIVISION OF EMERGENCY MANAGEMENT
285 Campgaw Road • Mahwah, NJ 07430-2598 • (201) 785-5757

James J. Tedesco III
County Executive

Lt. Matthew J. Tiedemann, CEM
County Coordinator

January 12, 2015

Commissioner Joseph Esposito
New York City Office of Emergency Management
165 Cadman Plaza East
Brooklyn, New York 11201

Re: Bergen County Multi-Jurisdictional Hazard Mitigation Plan

Commissioner Esposito,

Bergen County is currently updating the Bergen County Multi-Jurisdictional Hazard Mitigation Plan to meet the requirements of the Disaster Mitigation Act of 2000 (DMA 2000). The purpose of this plan is to identify vulnerabilities to a variety of natural and human caused disasters, and to develop plans to help minimize losses if disasters should occur. The intent of the plan is to provide a comprehensive document that takes into account the wide diversity of communities, businesses, and services that are an integral part of Bergen County and the region as a whole. In addition to its value as a hazard mitigation plan, the development of this document is also required under the DMA 2000 to ensure eligibility for Federal and State Mitigation funding.

Due to your proximity to Bergen County, the effects of many of these disasters would be similar in your city and your involvement in this process could reap mutual benefits. By participating in the review of this plan, you will be engaging in the regional coordination of disaster mitigation planning, which is one of the intents of the Mitigation Planning Regulations (44 CFR 201).

Presently, our draft plan is now in a public review period until February 11, 2015 prior to submission to FEMA for approval. By means of this letter, Bergen County is seeking your participation in this important planning effort. Specifically, we encourage interested neighboring community representatives to become familiar with this process by reviewing and providing input on the draft and final plan documents by visiting www.bcoem.org, "All Hazard Mitigation Plan".

Any questions or comments regarding the plan can be made directly to the New Jersey Meadowlands Commission by e-mail to Cheryl.rezendes@njmeadowlands.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Lt. Matthew J. Tiedemann".

Lieutenant Matthew J. Tiedemann, CEM
County Emergency Management Coordinator

Appendix B: Critical Facility Description and Vulnerability Ranking

Assessing Vulnerability to Hazards by Jurisdiction

This appendix provides a detailed discussion of all critical facilities in each municipality and to the degree to which each is vulnerable to the natural hazards identified in this plan.

Critical facilities that are new for this Plan update are denoted with an asterisk (*) following the name of the facility.

Table B.1, Facility Vulnerability Assessment: Ranking Factors contains the rankings used for each hazard, detailed by municipality. **Appendix D** contains a table entitled, Vulnerability Assessment of Critical Facilities, which details the ranking of each critical facility by hazard and by municipality. County-wide maps detailing critical facilities and their vulnerability to hazards are also located in **Appendices C and E**.

Table B.1: Facility Vulnerability Assessment: Ranking Factors

Vulnerability to Flooding	
0	Structure is known to not be located in a flood plain or flood prone area
1	Structure is in a floodplain or flood prone area but has no prior history of flood damage
2	Structure is in a floodplain or flood prone area and has experienced some limited flood damage in the past
3	Structure is in a floodplain or flood prone area and has experienced significant flood damage or the property is an NFIP repetitive loss property
Vulnerability to Storm Surge	
0	Structure is known to not be located in a storm surge or tsunami inundation area
1	Structure is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone
2	Located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage
3	Located in a Category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or has experienced prior surge/tsunami damage
Vulnerability to Drought	
0	The facility is served by a water supply that is known to be adequate under drought conditions
1	The facility is served by a water supply that is likely to fail under severe drought conditions
2	The facility is served by a water supply that is likely to fail under moderate drought conditions
3	Facility's water supply is predicted to fail under moderate drought conditions or significant water supply problems have been experienced
Subject to Winter Storm Disruption	
0	The facility would not suffer any damage or operational disruption from a winter storm
1	The facility could suffer some damage or minor operational disruption from a winter storm
2	The facility has suffered damages or significant operational disruption from past winter storms
3	Facility has suffered damages or significant disruption from past storms which has had serious community economic or health consequences
Subject to Earthquake	
0	The facility is not located in an area considered to have any significant risk of earthquake
1	In an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes

2	In an area considered as moderate earthquake risk and has not been constructed/ retrofitted to comply with the current earthquake codes.
3	In an area considered as high earthquake risk and has not been constructed/ retrofitted to comply with the current earthquake codes
Subject to Landslide/Mudslide	
0	Facility is located on a site not considered vulnerable to landslide, erosion or avalanche
1	Facility is on sloping or waterside site with moderate vulnerable to landslide or erosion, and/or is near but not in an avalanche runout zone
2	On a sloping/waterside site with soils prone to landslide or erosion, and/or is in potential avalanche runout zone; with no history of damage
3	On a sloping or waterside site highly vulnerable to landslide or erosion, is in a predicted avalanche runout zone, or has history of such damage
Vulnerability to High Winds	
0	Facility is not vulnerable due to construction type, roof configuration & wall opening size or protection; no nearby trees
1	Wall opening size/lack of protection may cause window/door failure &/or with few nearby trees; essential external equipment is vulnerable
2	Vulnerable due to wall opening size/lack of protection, roof configuration, &/or several nearby trees; essential external equipment is vulnerable
3	Very likely to be damaged or destroyed in a high wind, because it is a mobile or fragile structure, or wall openings can be expected to fail
Vulnerability to Major Fire	
0	Meets the current fire code, has adequate separation from other structures and good access, and is not close to heavily vegetated areas
1	Meets the current code, is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk
2	Does not meet current fire code, is in/adjacent to large vegetated areas, and has inadequate access and/or separation from other structures
3	Does not meet the current code, is in/adjacent to vegetated areas, with access limitations/structure separation make fire suppression difficult
Vulnerable to Subsidence	
0	The facility is not located over geologic formations with any potential for subsidence and the site is in an area free of expansive soils.
1	Over formations with limited potential subsidence or expansive soils may be present, and there is no previous damage from these hazards
2	Over formations of known potential for subsidence or site is likely to have expansive soils, but there is no history of this type of damage
3	Over formations of known potential for subsidence or the site has expansive soils and there is a history in the area of this type of damage
Vulnerability to Hail Storms	
0	The construction of the facility has no surfaces or equipment that are likely to be damaged by large hail
1	The facility has equipment or surfaces that could be damaged by large hail, but operation of the facility would not be disrupted
2	The facility has equipment or surfaces that would be damaged by large hail, and operation of the facility may be disrupted
3	Facility's equipment/surfaces would be damaged by large hail, and operations would be disrupted, or, it has significant past hail damage

Bergen County

Bergen County has identified 28 critical facilities, including 20 that are new to this Plan update, as follows:

1. Bergen County Police Headquarters (moved from Hackensack to Paramus)
2. Bergen County DPW Operations and Mosquito Control Division (moved from Hackensack to Paramus)
3. Bergen County Jail & Bureau of Criminal Investigation (formerly Bergen County Jail Annex) (Hackensack)
4. Bergen County Administration Building (formerly One Bergen County Plaza) (Hackensack)
5. Bergen County Administration Garage (Hackensack)
6. Bergen County Justice Center (Hackensack)
7. Bergen County Medical Examiner's Office (Paramus)
8. Bergen County Animal Center (Teterboro)
9. Bergen Community College Ciarco Learning Center (Hackensack)*
10. Bergen County Academies (Hackensack)*
11. Bergen County Senior Center and Addiction Recovery Program (Hackensack)*
12. Bergen County Conklin Youth Center (Hackensack)*
13. Bergen County Probation Division (Hackensack)*
14. Bergen County Housing, Health and Human Services Center (Hackensack)*
15. Bergen County Police- Patrol Unit (Hackensack)*
16. Bergen County Central Municipal Court (Hackensack)*
17. Bergen County Maintenance Garage and Fueling Storage (Hackensack)*
18. Bergen County Community Transportation/Lodi Armory (Lodi)*
19. Bergen Community College at the Meadowlands (Lyndhurst)*
20. Bergen County Public Safety Operations Center (moved from Paramus to Mahwah)*
21. Bergen County Environmental Health and Special Services School (Paramus)*
22. Bergen Community College (Paramus)*
23. Bergen County Technical High School (Paramus)*
24. Bergen Regional Medical Center (Paramus)*
25. Bergen County Special Services Schools (Paramus)*
26. Bergen County Health Care Center (Rockleigh)*
27. Bergen County Youth Complex (JDC) (Teterboro)*
28. Bergen County Technical High School (Teterboro)*

The vulnerability assessment of these critical facilities can be found under the municipality in which they are located.

Allendale Borough

The Borough of Allendale has eight critical facilities, five of which were added for this Plan update.

The Allendale DPW is slightly vulnerable to high winds, meaning that the wall opening size or lack of protection may cause window or door failure; external equipment is also vulnerable. The DPW structure is located in a floodplain or flood prone area and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the DPW or economic losses would be moderate.

The Allendale Water Department is slightly vulnerable to high winds, the wall opening size or lack of protection may cause window or door failure; external equipment is also vulnerable. The Water Department is located in a flood plain or flood prone area and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the Water Department or economic losses would be moderate.

The Brookside School is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. The School is in a flood plain or flood prone area and has experienced significant flood damage in the past. This property may also be a NFIP repetitive loss property. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of the School. Economic losses due to such a storm would be substantial.

The Allendale Volunteer Ambulance Corps* is slightly vulnerable to high winds, the wall opening size or lack of protection may cause window or door failure; external equipment is also vulnerable. The structure is located in a floodplain or flood prone area but has no prior history of flood damage. The facility could suffer some damage or minor operational disruption from a winter storm.

The Allendale Police Department* is slightly vulnerable to high winds, the wall opening size or lack of protection may cause window or door failure; external equipment is also vulnerable. The structure is located in a floodplain or flood prone area but has no prior history of flood damage. The facility could suffer some damage or minor operational disruption from a winter storm.

The Allendale Fire Department* is slightly vulnerable to high winds, the wall opening size or lack of protection may cause window or door failure; external equipment is also vulnerable. The structure is located in a floodplain or flood prone area but has no prior history of flood damage. The facility could suffer some damage or minor operational disruption from a winter storm.

The Hillsdale School* is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. The structure is located in a floodplain or flood prone area but has no prior history of flood damage. The facility could suffer some damage or minor operational disruption from a winter storm.

The Northern Highlands Regional High School* is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. The structure is located in a floodplain or flood prone area but has no prior history of flood

damage. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of the School. Economic losses due to such a storm would be substantial.

Alpine Borough

The Borough of Alpine has identified 15 critical facilities.

The Alpine Department of Public Works and Fire Department are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable.

The Alpine Public School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the School. Economic losses due to such a storm would be moderate.

The American Tower Corporation and Alpine Tower Corporation are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable.

Closter Dock Road (Bergen County Route 502) from start to end is vulnerable to winter storms, as they may pose a health/safety risk to up to 25% of the population in the vicinity of this roadway. Economic losses due to such a storm would be moderate.

Hillside Avenue (Route 6) from start to end is vulnerable to winter storms, as they may pose a health/safety risk to up to 25% of the population in the vicinity of this roadway. Economic losses due to such a storm would be moderate.

The Alpine Municipal Hall/Police Department/EOC is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable.

The Public Water Storage Tanks (5 and 9 million gallons) are not vulnerable to any natural hazards.

The T-Mobile Cellular Tower is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable.

US Route 9W- Mile Posts 5.4 and 11.1 are vulnerable to winter storms, as they may pose a health/safety risk to up to 25% of the population in the vicinity of US Route 9W, or economic losses would be moderate.

Bergenfield Borough

The Borough of Bergenfield has identified nine critical facilities, two of which were added for this Plan update.

The Alert Fire Company and Bergen Field High School are each slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. These facilities are vulnerable to winter storms, as they may pose a health/safety risk to up to 25% of the population in the vicinity of the structures. Economic losses due to such a storm would be moderate.

The Bergenfield Municipal Building is located in a floodplain or flood prone area and has experienced some limited flood damage in the past.

The Bergenfield Ambulance Corps is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable.

The No. 2 Fire Company, Prospect Fire Company No. 1 and Roy W. Brown Middle School are each slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. These facilities are vulnerable to winter storms, as they may pose a health/safety risk to up to 25% of the population in the vicinity of the structures. Economic losses due to such a storm would be moderate.

The Bergenfield Borough Hall/Police Department* is slightly vulnerable to winter storms. Such storms may pose a health/safety risk to up to 25% of the population in the vicinity of the Borough Hall/Police Department. Economic losses due to such a storm would be moderate.

Bergenfield Department of Public Works (DPW)* is slightly vulnerable to winter storms. Such storms may pose a health/safety risk to up to 25% of the population in the vicinity of the DPW. Economic losses due to such a storm would be moderate.

Bogota Borough

The Borough of Bogota has identified one critical facility, the Amerada Hess Storage Facility. This facility is located in a flood plan or flood prone area and has experienced some limited flood damage in the past. It is also located in a storm surge zone for a Category 3 hurricane, or it is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the storage facility. Economic losses due to such a storm would be moderate.

Carlstadt Borough

The Borough of Carlstadt has identified 13 critical facilities, including 6 new facilities added to the Plan update. In addition, the Altra facility, the Lincoln School, Sandcastle Day Care and the Washington School were closed and have been removed from the Plan update.

The Carlstadt Civic Center and Ambulance HQ has been updated to reflect its vulnerability to winter storms. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Carlstadt Pump Station #3- Industrial Road (formerly Pump Station #1) has been updated to reflect its vulnerability to flooding, storm surge, and winter storms. It is located in a floodplain or flood prone area but has no prior history of flood damage. The facility is located in a storm surge area for a Category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Carlstadt Pump Station #2- Barell Ave. has been updated to reflect its vulnerability to flooding, storm surge, landslide and winter storms. It is located in a floodplain or flood prone area and has experienced some limited flood damage in the past. The facility is located in a Category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or has experienced prior surge/tsunami damage. The facility is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or it is near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Carlstadt Town Hall Complex is not vulnerable to any natural hazards.

Carlstadt Public School (formerly known as Lindbergh School) has been updated to reflect that it is not vulnerable to any natural hazards.

Stop & Shop #831 is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This store is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of the store, or economic losses would be substantial.

Sun Chemical is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. The facility is in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Carlstadt Pump Station #1- Jony Drive* is located in a floodplain or flood prone area but has no prior history of flood damage. The facility is located in a Category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or has experienced prior surge/tsunami damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate. This facility does not meet the current fire code, is in/ adjacent to large vegetated areas, and has inadequate access and/or separation from other structures.

Carlstadt Presbyterian Church* is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be

moderate. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk.

The Carlstadt Public Library* is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Carlstadt Turnverein Inc.* is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

PSE&G Substation* is located in a flood plan or flood prone area and has experienced some limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Carlstadt Public Works* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility is located in a flood plan or flood prone area and has experienced some limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Williams Transcontinental Pipeline* is located in a floodplain or flood prone area but has no prior history of flood damage.

Cliffside Park Borough

The Borough of Cliffside Park has identified 11 critical facilities.

The Cliffside Parks Public Works facility has been removed, and the Cliffside Park DPW Annex has been added in this Plan update. The Cliffside Park Borough Hall is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Cliffside Park DPW Annex* is vulnerable to winter storms, in that such storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Cliffside Park High School is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of the high school. Economic losses due to such a storm would be substantial.

The Cliffside Park Housing Authority is served by a water supply that is likely to fail under moderate drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Cliffside Park Library is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Epiphany Church is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. The church is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of the high school. Economic losses due to such a storm would be substantial.

PS#3, PS#4, PS#5 and PS#6 are served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these schools. Economic losses due to such a storm would be moderate.

The Verizon Sub-station is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the sub-station, or economic losses would be moderate.

Closter Borough

The Borough of Closter has identified 10 critical facilities.

The Closter Borough Hall is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility is located in a flood plan or flood prone area and has experienced some limited flood damage in the past.

The Closter DPW Headquarters is located in a floodplain or flood prone area but has no prior history of flood damage.

The Closter EMS Headquarters is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Closter Fire Headquarters is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Hillside School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

Rockland Electric Substation is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Spectrum for Living has been updated to reflect increased vulnerability to high winds. The facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. The facility is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Spectrum for Living- VanSciver is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Tenakill School is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

The Verizon Central Office is not vulnerable to any natural hazards.

Cresskill Borough

The Borough of Cresskill has identified five critical facilities.

The Cresskill Ambulance Station is located in a floodplain or flood prone area but has no prior history of flood damage.

Cresskill High School is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

The Electric Substation, Cresskill Fire Station and Cresskill Public Works Building are located in a floodplain or flood prone area but have no prior history of flood damage.

Demarest Borough

The Borough of Demarest has identified 24 critical facilities.

The Academy of Holy Angels Shelter and School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. The school is served by a water supply that is likely to fail under severe drought conditions. The school meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

Anderson Avenue from start to end meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Anderson Avenue is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the roadway. Economic losses due to such a storm would be moderate.

The Demarest Borough Hall is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable.

County Road from start to end meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. County Road is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the roadway. Economic losses due to such a storm would be moderate.

County Road School and Demarest Cooperative Nursery are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. These schools are served by a water supply that is likely to fail under severe drought conditions. These schools meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these schools. Economic losses due to such a storm would be moderate.

The Demarest Ambulance Corps is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. The facility is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The Demarest DPW is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. The facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The DPW is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The Demarest Fire Department is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. The facility is served by a water supply that is likely to fail under severe drought conditions. The facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Demarest Middle School and Shelter is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. The school is served by a water supply that is likely to fail under severe drought conditions. The school meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

The Demarest Police Department is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the police department, or economic losses would be moderate.

Hardenburgh Avenue from start to end meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Hardenburgh Avenue is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the roadway. Economic losses due to such a storm would be moderate.

The Hardenburgh Avenue Bridge meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The bridge is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the bridge, or economic losses would be moderate.

The Hardenburgh Avenue Dam is in a floodplain or flood prone area and has experienced significant flood damage, or the structure is a NFIP repetitive loss property. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the dam, or economic losses would be moderate.

Knickerbocker Road from start to end is located in a floodplain or flood prone area but has no prior history of flood damage.

Luther Lee Emerson School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. The school is served by a water supply that is likely to fail under severe drought conditions. The school meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

Northern Valley Catholic Academy is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. The school is served by a water supply that is likely to fail under severe drought conditions. The school meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk

to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

Northern Valley Regional High School and Shelter is vulnerable to high winds due to wall opening size or lack of protection, roof configuration, and/or several nearby trees; high essential external equipment is vulnerable. The school is served by a water supply that is likely to fail under severe drought conditions. The school meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

Piermont Road from start to end meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Piermont Road is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the roadway. Economic losses due to such a storm would be moderate.

Dumont Borough

The Borough of Dumont has identified 23 critical facilities, three of which were added for this Plan update.

The Pump Station at Wareham Road has been closed and removed from the Plan. The Dumont Borough Hall is located in a floodplain or flood prone area and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the Borough Hall or economic losses would be moderate.

The Verizon Central Office has been updated to reflect increased vulnerability to winter storms. This facility is located in a floodplain or flood prone area and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of the School. Economic losses due to such a storm would be substantial.

The Dumont DPW Building has been updated to reflect increased vulnerability to winter storms. This facility is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the Borough Hall or economic losses would be moderate.

Dumont Fire Cos. #1 and #3 are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the fire stations or economic losses would be moderate.

Dumont Fire Company #2 has been updated to reflect an increase in vulnerability to flooding. This facility is located in a floodplain or flood prone area but has no prior history of flood damage. This facility is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the fire station or economic losses would be moderate.

Dumont High School is vulnerable to winter storms, which may pose a health/safety risk to 25-50% of the population in the vicinity of the high school. Economic losses due to such a storm would be substantial.

The Dumont Independent Hose Co. is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the fire station or economic losses would be moderate.

The Dumont Police Department is located in a floodplain or flood prone area and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility or economic losses would be moderate.

Volunteer Ambulance Corp has been updated to reflect increased vulnerability to flooding. This facility is located in a floodplain or flood prone area and has experienced significant flood damage or the property is an NFIP repetitive loss property. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility or economic losses would be moderate.

Grant, Honiss, and Lincoln Schools are vulnerable to winter storms, which may pose a health/safety risk to 25-50% of the population in the vicinity of these schools. Economic losses due to such a storm would be substantial.

PSE&G Dumont Substation- Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the substation or economic losses would be moderate.

The Pump Stations at 1st Street and 2nd Street are not vulnerable to any natural hazards.

The Pump Station at Concord Street is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility, or economic losses would be moderate.

The Pump Station at White Beeches Drive has been updated to reflect increased vulnerability to flooding. It is located in a floodplain or flood prone area and has experienced limited flood damage in the past. The facility is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these pump stations, or economic losses would be moderate.

The Pump Station at Lafayette Street has been updated to reflect increased vulnerability to high winds. It is slightly vulnerable to high winds, the wall opening size or lack of protection may cause window or door failure; external equipment is also vulnerable. The facility is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these pump stations, or economic losses would be moderate.

The Selzer School is vulnerable to winter storms, which may pose a health/safety risk to 25-50% of the population in the vicinity of the school. Economic losses due to such a storm would be substantial.

St. Mary's Senior Residence Inc.* is not vulnerable to any natural hazards.

David F. Roach Apartments* are not vulnerable to any natural hazards.

94/95 Schraalenburgh Way Senior Housing* is located in a floodplain or flood prone area and has experienced some limited flood damage in the past.

East Rutherford Borough

The Borough of East Rutherford has identified 22 critical facilities.

The Alfred Faust Intermediate School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The school is located in a floodplain or flood prone area but has no prior history of flood damage. The school is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. It is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

Boiling Springs Gardens is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The facility is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The Continental Airlines Arena is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the arena, or economic losses would be moderate.

The East Rutherford Building Department is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The building department is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The East Rutherford Department of Public Works is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. The DPW is located in a floodplain or flood prone area and has experienced limited flood damage in the past. The DPW is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. The DPW is located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the DPW, or economic losses would be moderate.

The East Rutherford Fire Department at Grove Street is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. The fire station is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the station, or economic losses would be moderate.

The East Rutherford Fire Department- Station #13 is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The station is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the station, or economic losses would be moderate.

The East Rutherford Fire Department- Carlton Hill Firehouse is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The firehouse is located in a floodplain or flood prone area and has experienced limited flood damage in the past. The firehouse is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. It is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the firehouse. Economic losses due to such a storm would be moderate.

The East Rutherford Municipal Building is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The municipal building is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the building. Economic losses due to such a storm would be moderate.

The East Rutherford Police Headquarters is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The police headquarters is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The East Rutherford Sewage Authority Lift Station is located in a floodplain or flood prone area but has no prior history of flood damage. The facility is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. The lift

station is located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage.

The East Rutherford Sewage Authority Pump Station is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. The station is located in a floodplain or flood prone area but has no prior history of flood damage. The pump station is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. It is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the pump station, or economic losses would be moderate.

The Federal Reserve Bank is located in a floodplain or flood prone area but has no prior history of flood damage. The facility is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. The bank is located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the bank, or economic losses would be moderate.

Giants Stadium is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the stadium, or economic losses would be moderate.

Henry Beacon Regional High School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. The high school is located in a floodplain or flood prone area but has no prior history of flood damage. The school is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. It is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the high school. Economic losses due to such a storm would be moderate.

McKenzie School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The school is located in a floodplain or flood prone area but has no prior history of flood damage. The school is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

The Meadowlands Race Track is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the track, or economic losses would be moderate.

The NJSEA Fire Station is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The fire station is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the fire station, or economic losses would be moderate.

The PSE&G Substation is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. The substation is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The PSE&G Switching Station is located in a floodplain or flood prone area but has no prior history of flood damage. The facility is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

St. Joseph's Church School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The school is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

The Williams Gas Pipeline Valve Station is located in a floodplain or flood prone area but has no prior history of flood damage. The facility is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. The station is located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the station, or economic losses would be moderate.

Edgewater Borough

The Borough of Edgewater has identified 33 critical facilities, six of which have been added for this Plan update.

The American Legion Hall is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the hall, or economic losses would be moderate.

The Colony Community Center is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The community center is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. The facility is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or it is near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the center. Economic losses due to such a storm would be moderate.

The Edgewater DPW and DPW Annex are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. They meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The DPW and DPW Annex are in a floodplain or flood prone area and have experienced some limited flood damage in the past. The facilities are also located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Edgewater Community Center meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The center is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the center. Economic losses due to such a storm would be moderate.

The Edgewater Library meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The department is located in a floodplain or flood prone area but has no prior history of flood damage. The facility is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the library. Economic losses due to such a storm would be moderate.

The Edgewater Municipal Building meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The building is located in a floodplain or flood prone area but has no prior history of flood damage. The municipal building is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the municipal building. Economic losses due to such a storm would be moderate.

The Edgewater Fire Department is located in a floodplain or flood prone area but has no prior history of flood damage.

The Edgewater Post Office is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment

is vulnerable. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Edgewater Senior Center is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The center is located in a floodplain or flood prone area but has no prior history of flood damage. The center is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Edgewater Volunteer First Aid Squad meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The squad is in a floodplain or flood prone area and has experienced some limited flood damage in the past. The facility is also located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the squad. Economic losses due to such a storm would be moderate.

The Edgewater Volunteer Fire Department Co. #1 is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the firehouse. Economic losses due to such a storm would be moderate.

The EVG School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The school is located in a floodplain or flood prone area but has no prior history of flood damage. The school is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

First Presbyterian Church is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the church. Economic losses due to such a storm would be moderate.

George Washington School is in a floodplain or flood prone area and has experienced some limited flood damage in the past. The school is also located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose

a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

The Grand Cove Marina is located in a floodplain or flood prone area but has no prior history of flood damage. The marina is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the marina. Economic losses due to such a storm would be moderate.

Hess Oil is located in a floodplain or flood prone area but has no prior history of flood damage. The facility is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Holy Rosary Church meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The church is located in a floodplain or flood prone area but has no prior history of flood damage. The church is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the church. Economic losses due to such a storm would be moderate.

The Edgewater Water Pollution Control Facility (formerly Main Sewer Plant) has been updated to reflect decreased vulnerability to high winds and fire, and increased vulnerability to flooding, earthquake and storm surge. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The plant is located in a floodplain or flood prone area and has experienced some limited flood damage in the past. The plant is also located in an area considered as high earthquake risk and has not been constructed/ retrofitted to comply with the current earthquake building codes. The plant is in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the sewer plant. Economic losses due to such a storm would be moderate.

Mitsuwa is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The facility is located in a floodplain or flood prone area but has no prior history of flood damage. The facility is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The Montessori School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The school is also located in an area considered as

low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

Palisade Learning Center is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility is served by a water supply that is likely to fail under severe drought conditions. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This facility is in a floodplain or flood prone area and has experienced some limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Prime Time Learning Center is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The school is located in a floodplain or flood prone area but has no prior history of flood damage. The school is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

Sewer Plant #3 is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This facility is in a floodplain or flood prone area and has experienced some limited flood damage in the past. This facility is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Sunrise Assisted Living is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This facility is in a floodplain or flood prone area and has experienced some limited flood damage in the past. This facility is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Transco Gas Pipeline meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The pipeline is located in an area considered as moderate earthquake risk, and has not been constructed/ retrofitted to comply with current earthquake codes.

Waterford Towers is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The facility is in a floodplain or flood prone area and has experienced some limited flood damage in the past. The facility is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Edgewater Borough Hall and Police Department*, the Comfort Inn Motel*, and the Edgewater Multi-Plex* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. These facilities meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The facilities are in a floodplain or flood prone area and have experienced some limited flood damage in the past. The facilities are also located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facilities. Economic losses due to such a storm would be moderate.

Lord's Grace Church* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The church is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the church. Economic losses due to such a storm would be moderate.

Edgewater Pathmark/Pharmacy* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The facility is located in a floodplain or flood prone area but has no prior history of flood damage. The facility is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Duane Reade Pharmacy* is located in a floodplain or flood prone area but has no prior history of flood damage. The facility is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Elmwood Park Borough

The Borough of Elmwood Park has identified 22 critical facilities, one of which was removed for this Plan update. The Sewer Pumping Station at Slater Ave. has been closed.

The Elmwood Park 16th Avenue School is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

The Elmwood Park DPW Building/Yard is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The Elmwood Park Fire Co. #1, #2, #3 and #4 are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the firehouses. Economic losses due to such a storm would be moderate.

The Elmwood Park Gantner Avenue and Gilbert Avenue Schools are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the schools. Economic losses due to such a storm would be moderate.

The Elmwood Park Memorial High School is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the high school. Economic losses due to such a storm would be moderate.

The Elmwood Park Police Department/Borough Hall is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The Elmwood Park Recreation Center is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the recreation center. Economic losses due to such a storm would be moderate.

The Elmwood Park Volunteer Ambulance Corp. is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The Elmwood Park Water Distribution Center meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This facility is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The New Jersey Believers Church and Presbyterian Church are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these churches, or economic losses would be moderate.

Prime Energy Co-Generation is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The Parkview Avenue and Martha Avenue Sewer Pumping Stations are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Slater Avenue and Market Street Pumping Stations are not vulnerable to any natural hazards.

The River Drive Pumping Station is located in a floodplain or flood prone area but has no prior history of flood damage.

St. Leo Church and School is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the church and school. Economic losses due to such a storm would be moderate.

Emerson Borough

The Borough of Emerson has identified 11 critical facilities.

The Public Service Gas Metering Station has been updated to reflect an increase in vulnerability to high winds, earthquake and winter storm. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility is in an area considered as low earthquake risk or has been constructed/retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Emerson Borough Hall/Police Station/EOC and Emerson Fire House are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Armenian Home has been updated to reflect an increase in vulnerability to earthquakes. It is vulnerable to high winds due to wall opening size/ lack of protection which may cause window/door failure; essential external equipment is vulnerable. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is in an area considered as low earthquake risk or has been constructed/retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Villano Elementary School has been updated to reflect increased vulnerability to winter storms. It is vulnerable to high winds due to wall opening size/ lack of protection which may cause window/door failure; essential external equipment is vulnerable. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is vulnerable to winter storms, which may pose a health/safety risk to 25-50% of the population in the vicinity of the school. Economic losses due to such a storm would be substantial.

Assumption Academy School and the Emerson Department of Public Works are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. These facilities meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Emeritus at Emerson (formerly The Gardens at Emerson) has been updated to reflect increased vulnerability to earthquakes. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. These facilities meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is in an area considered as low earthquake risk or has been constructed/retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Emerson Junior & Senior High School and Memorial School have been updated to reflect an increase in vulnerability to winter storms. These facilities are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of the schools. Economic losses due to such a storm would be substantial.

Emerson Health Care has been updated to reflect increased vulnerability to earthquakes. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility is in an area considered as moderate earthquake risk and has not been constructed/retrofitted to comply with the current earthquake code. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Englewood City

The City of Englewood has identified 60 critical facilities, including 34 that have been added to the Plan update.

The Ability School, the Lillian Booth Actor's Home (formerly the Actor Funds Nursing Home), the Bergen Family Center and the City of Englewood Public Library have been updated to reflect increased vulnerability to high winds and winter storms. These facilities are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Cleveland Elementary School, the Donal Quarles Elementary School, and the Dwight Morrow High School/Englewood Academies have been updated to reflect an increased vulnerability to winter storms. These facilities are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable.

Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Elizabeth Morrow School, Englewood Hospital and Medical Center and the Englewood City Hall have been updated to reflect increased vulnerability to high winds and winter storms. These facilities are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Genesis Health Care-Englemoor Center (formerly Englemoor Nursing Home) has been updated to reflect an increase in vulnerability to winter storms. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Englewood Field Club is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable.

The Englewood Fire Department and Police Department have been updated to reflect an increase in vulnerability to winter storms. These facilities are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Metropolitan Medical Associates is not vulnerable to any natural hazards.

Infant and Toddler Daycare (formerly The Infant Senior Sharing Project), the Montessori Early Learning Center, and the Moriah School have been updated to reflect increased vulnerability to high winds and winter storms. These facilities are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Russell Major Liberty School has been updated to reflect increased vulnerability to winter storms. The school is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Saddle Acres Day Care is not vulnerable to any natural hazards.

Vincent K. Tibbs Childcare Development Center, the Westside Infant Day Care, and the Yeshiva Ohn Halamud of Englewood (formerly the Yeshiva School of Englewood) have been updated to reflect increased vulnerability to high winds and winter storms. These facilities are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to

up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Winton White Stadium has been updated to reflect a decrease in vulnerability to high winds. The Stadium is not vulnerable to any natural hazards.

Dwight Englewood School*, Dwight Englewood School Communications Tower*, Janis E. Dismis Middle School* and Dr. John Grieco Elementary School* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Pump Stations at Cedar Lane*, Mackay Park*, Morris Park*, and West Sheffield Ave* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Rite Aid Pharmacy*, Pastor Pharmacy*, Liberty Pharmacy* and Buckley's Drug Store and Company* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Englewood Communications Center*, Department of Public Works*, Emergency Operations Center*, Health Department* and Municipal Court* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Englewood Hospital Communications Tower*, Englewood Police HQ Communications Tower*, Englewood Hospital Emergency Medical Services HQ* and Englewood Volunteer Ambulance Corps HQ* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

E.A.G.L.E. Initiative Alternative*, Englewood on the Palisades Charter School*, Garrity Field Helicopter Landing Site*, Mackay Field Helicopter Landing Site*, and John T. Wright Ice Arena* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Kid Nation Daycare & Learning*, PSE&G Sub Station*, U.S. Post Office at Engle Street* and U.S. Post Office at Smith Street* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Lincoln Elementary School* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable.

Route 4* and Route I-95* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. These roadways are located in a flood plain or flood prone area but have no prior history of flood damage.

Shop Rite Pharmacy* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility is in a flood plain or flood prone area and has experienced some limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Englewood Cliffs Borough

The Borough of Englewood Cliffs has identified 21 critical facilities.

The Borough Hall Court and Police Facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Citibank is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk.

CNBC is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Communication Tower is very likely to be damaged or destroyed in a high wind, because it is a mobile or fragile structure, or wall openings can be expected to fail. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Englewood Cliffs Department of Public Works and Englewood Cliffs Fire Department are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. These facilities meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Japanese Children's Society is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The North Cliffs School is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The PSE&G Substation is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Chestnut Street, Hollywood Avenue Jane Drive, Lyncrest Road, and Roberts Road Pump Stations are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. These facilities meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The pump stations are in a known floodplain or flood prone area, but have no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

St. Michael's Villa is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility is in an area considered as low earthquake risk, or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

St. Peter's College is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The college is in an area considered as low earthquake risk, or has been constructed/ retrofitted to comply with the current earthquake building codes. The college is on a sloping or waterside site with moderate vulnerability to landslide or erosion, and/or is near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up

to 25% of the population in the vicinity of the college. Economic losses due to such a storm would be moderate.

Unilever Best Foods is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This facility is in a known floodplain or flood prone area, but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Unilever Best Foods NA is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The United Water Tower is vulnerable to high winds due to wall opening size/lack of protection, roof configuration and/or several nearby trees; essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Upper School is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

The Englewood Cliffs Volunteer Ambulance Corps is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window or door failure, and essential external equipment is vulnerable. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Fair Lawn Borough

The Borough of Fair Lawn has identified 70 critical facilities.

The Board of Education Maintenance Facility, The Fair Lawn Ambulance Corps, the Fair Lawn Police/PBA Building, the Fair Lawn Cadmus House, the Fair Lawn Community Center and the Fair Lawn Community School are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Broadway Train Station is not vulnerable to any natural hazards.

The Fair Lawn DPW Complex and Fair Lawn Parks Building are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. These structures are in a known floodplain or flood prone area, but have no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Fair Lawn Fire Companies #1, 2 and 4, the Fair Lawn High School, the Fair Lawn Municipal Building/Police Department and the Fair Lawn Rescue Squad are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Fair Lawn Fire Co. #3 is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Fair Lawn Memorial Pool is in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property.

The Fair Lawn Public Library and Senior Center are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. These facilities are located in a storm surge area for a category 4 or 5 hurricane, or are located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Fair Lawn Brennan Court Sewer Facility, the Fair Lawn Water facility #28, and the Williams Transco Gas Pipeline are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Fair Lawn Sewer Facilities at Chittenden Road and Mandon Place, the Fair Lawn Walsh pool, and the Gordon Place Water Tower are not vulnerable to any natural hazards.

The Fair Lawn Sewer Facilities at Canger Place, River Road and Saddle River Road are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. These facilities are in a floodplain or flood prone area but have no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Fair Lawn Water Department and the Water Facilities #10, 14, 5 and 8 are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Fisher Scientific, the Forest School, the Lyncrest School, and the Maple Glen Nursing Home are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Fair Lawn Water Facilities #2, 7 and the facility at Dunderhook Road are served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Fair Lawn Water Facilities #15, 17 and the facility at Wagaraw Road are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. These facilities are in a floodplain or flood prone area but have no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Fair Lawn Water Facilities #12, 25, 9, and the facility at 11th Street are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The PSE&G Substations at Legion, Nevins Road and Warren Point and the Radburn Train Station at Pollitt Drive are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Fair Lawn Water Facility #11 is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is served by a water supply that is likely to fail under severe drought conditions.

The Fair Lawn Water Facility #16 is served by a water supply that is likely to fail under severe drought conditions. This facility is in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Fair Lawn Water Facility #19 is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is in a floodplain or flood prone area but has no prior history of flood damage. It is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Medco Health Systems, the Milnes School, The Radburn School and Nabisco Kraft Foods are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

St. Anne's Church, St. Anne's School, Valley Hospital Renal Care Center, the Warren Pint School, and Westmoreland School are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Memorial Junior High School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This school is served by a water supply that is likely to fail under severe drought conditions. The school is in a flood plain or flood prone area and has experienced significant flood damage in the past. This property may also be a NFIP repetitive loss property. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of the school. Economic losses due to such a storm would be substantial.

The Parks and Recreation Garage is located in a flood plain or flood prone area and has experienced significant flood damage in the past. This property may also be a NFIP repetitive loss property. The garage is in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Thomas Jefferson Middle School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The school is served by a water supply that is likely to fail under severe drought conditions. The school is in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a

health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

Well House is located in a floodplain or flood prone area and has experienced some limited flood damage in the past. This facility is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes.

Fairview Borough

The Borough of Fairview has identified seven critical facilities, including six that are new to this Plan update.

The Department of Public Works is served by a water supply that is likely to fail under severe drought conditions. The facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. It is located in a floodplain or flood prone area and has experienced some limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The United Water Holding Tank* and the PSE&G Transformer Station* are not vulnerable to any natural hazards.

The Walker St. Firehouse* is slightly vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk.

The Public Works Facility* is slightly vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

The Sedore Ave. Firehouse* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the firehouse. Economic losses due to such a storm would be moderate.

The Fairview Police Department/Municipal Complex* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the complex. Economic losses due to such a storm would be moderate. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk.

Fort Lee Borough

The Borough of Fort Lee has identified 48 critical facilities, including one new facility added for this Plan update.

The 12th Street Pump Station, The DPW, Fort Lee High School, the Jewish Community Center, and the OEM Office are in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes.

505 North Avenue, the Church of the Good Shepard and the Fort Lee Borough Hall are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes.

The Advent Lutheran Church, the Board of Education, the Judge Moor House, and the Madonna Chapel are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The George Washington Bridge, the Holy Trinity Church and School, and the Madonna Church and School, and the New Synagogue of Fort Lee are in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Firehouse #3 and the Fort Lee Range are not vulnerable to any natural hazards.

Firehouse #1, the Ambulance Corp., and Public School #2 - Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Port Authority, the Post Office, the Public Library, the Horizon Road Pump Station, the Stillwell Avenue Pump Station, the Senior Citizens Center, the Verizon Substation and the Youth Center are in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes.

The Lewis Cole Middle School and the Palisades Terrace Pump Station are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. The facility is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or it is near but not in an avalanche runout zone. Winter storms may pose a

health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Bluff Road Pump Station is in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. The facility is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or it is near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Firehouse #2 is in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms pose a health/safety risk to more than 50% of the population in the vicinity of this facility. Economic losses due to such a storm would extend beyond the impact area/timeframe.

Firehouse #4 is in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The Fort Lee Historical Park is in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. The facility is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or it is near but not in an avalanche runout zone.

The Fort Lee Parking Authority is in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. It is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone.

The Police Department, Public School #1, and the Malcolm Towers Senior Housing are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Parks and Recreation Office is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes.

The PSE&G Substation is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The substation meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. These facilities are in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake

building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Public School #2 is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Public School #3 is in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

The Valley Street Pump Station is in a flood plain or flood prone area but has no prior history of flood damage. It is located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes.

The Main Street Pump Station is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. It is located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. The facility is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or it is near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The Recreation Center is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The center is located in a flood plain or flood prone area but has no prior history of flood damage. It is located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The Fort Lee Community Center* is not vulnerable to any natural hazards.

Franklin Lakes Borough

The Borough of Franklin Lakes has identified 16 critical facilities, including two new facilities added for this Plan update.

The High Mountain Road School is not vulnerable to any natural hazards.

The Emergency Operations Center (formerly Fire Headquarters) has been updated to reflect increased vulnerability to high winds and winter storms. This facility is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. Winter storms pose a health/safety risk to more than 50% of the population in the vicinity of this facility. Economic losses due to such a storm would extend beyond the impact area/timeframe.

The Franklin Lakes Road Firehouse (formerly the Southside Firehouse) has been updated to reflect an increase in vulnerability to high winds and winter storms. This facility is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. Winter storms pose a health/safety risk to more than 50% of the population in the vicinity of this facility. Economic losses due to such a storm would extend beyond the impact area/timeframe.

Becton Dickson and Co. meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The Colonial Road School, Woodside Avenue Grammar School and Franklin Avenue Middle School are each served by a water supply that is likely to fail under severe drought conditions. These schools are each located in an area considered as moderate earthquake risk, and have not been constructed/retrofitted to comply with current earthquake codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of each of the schools. Economic losses due to such a storm would be moderate.

The Franklin Lakes DPW is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. It is served by a water supply that is likely to fail under severe drought conditions. This facility is located in an area considered as moderate earthquake risk, and has not been constructed/retrofitted to comply with current earthquake codes.

The Franklin Lake Police Department has been updated to reflect an increase in vulnerability to high winds and winter storms. This facility is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. The police department is served by a water supply that is likely to fail under severe drought conditions. This facility is located in an area considered as moderate earthquake risk, and have not been constructed/retrofitted to comply with current earthquake codes. Winter storms pose a health/safety risk to more than 50% of the population in the vicinity of this facility. Economic losses due to such a storm would extend beyond the impact area/timeframe.

The Franklin Lakes Borough Hall has been updated to reflect an increase in vulnerability to high winds and winter storms. This facility is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. The Borough Hall is located in a floodplain or flood prone area and has experienced limited flood damage in the past. Winter storms pose a health/safety risk to more than 50% of the population in the vicinity of this facility. Economic losses due to such a storm would extend beyond the impact area/timeframe.

The Franklin Lakes Public Library is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms pose a health/safety risk to 25-50% of the population in the vicinity of the library, or possible economic losses would be substantial.

The Franklin Lakes Volunteer Ambulance Building meets the current code and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. The facility is located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Medco Health Solutions is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility served by a water supply that is likely to fail under severe drought conditions. The facility is located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Ramapo Regional High School is located in an area considered as moderate earthquake risk, and have not been constructed/ retrofitted to comply with current earthquake codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the high school. Economic losses due to such a storm would be moderate.

The Haledon Dam* is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. Winter storms pose a health/safety risk to more than 50% of the population in the vicinity of this facility. Economic losses due to such a storm would extend beyond the impact area/timeframe.

Franklin Ave. Firehouse* is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. Winter storms pose a health/safety risk to more than 50% of the population in the vicinity of this facility. Economic losses due to such a storm would extend beyond the impact area/timeframe.

Garfield City

The City of Garfield has identified 40 critical facilities, including 7 newly added facilities, and 4 facilities that have moved from Garfield or closed. The following critical facilities are not vulnerable to any natural hazards:

1. Belmont Gardens
2. Garfield Boys & Girls Club
3. Garfield DPW
4. Garfield Health Department
5. Garfield Public Safety Building
6. Garfield Recreation Center
7. Garfield Senior Center
8. Garfield Water Works Botany Street Pump Station
9. Garfield Water Works Water Storage Tanks
10. Garfield Water Works Well 1A
11. Daniel P. Conte Court Complex
12. Garfield City Hall

13. Garfield Communications Building
14. Garfield Fire Companies #1, 2, 3 and 5
15. Garfield Police Department
16. Garfield Senior Housing
17. Golden Age Tower
18. Muscarelle Day Care Center
19. The YMCA/Bright Beginnings Day Care Center

The Federation of Multicultural Programs of NJ, Garfield Volunteer Ambulance Corp, Northeast Christian Academy and PSCH Group Home have closed or relocated from Garfield.

The Garfield (formerly NIPD-NJ) Group Home has been updated to reflect an increase in vulnerability to high winds, fire and winter storms. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This building meets the current code and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Garfield Fire Company #4 is located in a floodplain or flood prone area, but has no prior history of flood damage.

Garfield High School, Garfield Middle School, and the Pre-School Annex are each vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of each of the schools. Economic losses due to such a storm would be moderate.

The following public schools in Garfield are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of each of the schools. Economic losses due to such a storm would be moderate:

1. Public School #4
2. Public School #4 Annex
3. Public School #5
4. Public School #6
5. Public School #7
6. Public School #8
7. Public School #10

The PSE&G Electric Substation is vulnerable to high winds due to wall opening size/lack of protection, roof configuration and/or several nearby trees, and essential external equipment is vulnerable. This facility is located in a floodplain or flood prone area and has experienced limited flood damage in the past. The substation is located in a category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or has experienced prior surge/tsunami damage.

The Reed Academy is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of the school. Economic losses due to such a storm would be moderate.

The Bergen Arts/Sciences Charter School* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This building meets the current code and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Kidz University* is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or it is near but not in an avalanche runout zone. This building meets the current code and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The Three Saints Church Annex Pre-School* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This building meets the current code and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Holy Trinity School Annex Pre-School* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The Happy Times Day Care Center* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This building meets the current code and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Susana's Day care Center* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This building meets the current code and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

New Concepts for Living* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This building meets the current code and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. The facility is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or it is near but not in an

avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

Glen Rock Borough

The Borough of Glen Rock has identified two critical facilities.

The Municipal Complex is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the facility. Economic losses due to such a storm would be moderate.

The Ridgewood Pollution Plant is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The plant is located in a floodplain or flood prone area, and has experienced limited flood damage in the past. The facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the plant. Economic losses due to such a storm would be moderate.

Hackensack City

The City of Hackensack has identified five critical facilities. Additionally, Bergen County has identified 14 critical facilities located in the City of Hackensack, including 10 which are new to this Update. These will be discussed first, followed by the critical facilities identified by the City of Hackensack. The Bergen County DPW Operations facility has been relocated to Paramus (Bergen County DPW Operations and Mosquito Control Division). The Bergen County Police Headquarters has also been relocated from Hackensack to Paramus

The Bergen County Administration Garage is located in a floodplain or flood prone area, and has and has experienced limited flood damage in the past. Winter storms pose a health/safety risk to 25-50% of the population in the vicinity of this facility, or possible economic losses would be substantial.

Bergen County Academies* and Bergen County Administration Building (formerly known as One BC Plaza) are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are located in a floodplain or flood prone area, and have experienced limited flood damage in the past. They are located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Bergen County Justice Center and Bergen County Central Municipal Court* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are located in a flood plain or flood prone area but have no prior history of flood damage. They are located

in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Bergen County Maintenance Garage and Fuel Storage* and the Bergen County Agency Building (New)* are located in a flood plain or flood prone area but have no prior history of flood damage. They are located in an area considered as low earthquake risk or have been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Bergen County Probation Division* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a flood plain or flood prone area but has no prior history of flood damage. It is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate. The facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk.

The Bergen County Jail & Bureau of Criminal Investigation Unit (BCI) (formerly known as Bergen County Jail Annex) and the Bergen County Housing, Health & Human Services Center* are located in a floodplain or flood prone area, and have experienced limited flood damage in the past. They are located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Bergen County Senior Center and Addiction Recovery Program* is located in a flood plain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Bergen County Conklin Youth Center* is located in a flood plain or flood prone area but has no prior history of flood damage. It is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes.

The Bergen Community College Ciarco Learning Center* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. It is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Bergen County Police-Patrol Unit* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility located in a floodplain or flood prone area, and has and

has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Ever Ready Oil is located in a flood plain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

PSE&G is located in a floodplain or flood prone area, and has and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Hackensack Department of Public Works and PSE&G Substation are each located in a flood plain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of each of these facilities. Economic losses due to such a storm would be moderate.

Regent Care is located in a flood plain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Harrington Park Borough

The Borough of Harrington Park has identified eight critical facilities.

The Community Church and Shelter, and Our Lady of Victories Church and Shelter are not vulnerable to any natural hazards.

The Harrington Park DPW Building is served by a water supply that is likely to fail under severe drought conditions. The facility is located in a floodplain or flood prone area that has experienced some limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Harrington Park Fire & Ambulance Building and Police Station are each vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Harrington Park Municipal Building is located in a floodplain or flood prone area that has experienced some limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Harrington Park Public School and Shelter, and St. Andrew's Church are each vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of each of these facilities. Economic losses due to such a storm would be moderate.

Hasbrouck Heights Borough

The Borough of Hasbrouck Heights has identified 12 critical facilities.

The following critical facilities are not vulnerable to any natural hazards:

1. Corpus Christi School
2. Euclid School
3. Hasbrouck Heights Junior/Senior High School
4. Hasbrouck Heights Municipal Building (and shelter)
5. Hasbrouck Heights Public Safety Building
6. Kathy Dunn Cultural Center
7. Lincoln School
8. Methodist Nursery School
9. New World Montessori School

The Franklin Sewage Pumping Station has been updated to reflect a decrease in vulnerability to high winds, drought, and flooding. This facility is located in a flood plain or flood prone area but has no prior history of flood damage.

The Hasbrouck Heights DPW Yard has been updated to reflect an increase in vulnerability to storm surge and a decrease in vulnerability to winter storms. It is located in a floodplain or flood prone area that has experienced some limited flood damage in the past. This facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The PSE&G Power Substation is in a floodplain or flood prone area but has no prior history of flood damage.

Haworth Borough

The Borough of Haworth has identified seven critical facilities.

The Haworth Ambulance Corps is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. It meets current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. The facility is located in a floodplain or flood prone area, and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Haworth DPW Buildings #1 and 2 each meet current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. These facilities are located in a floodplain or flood prone area, and have experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of each of these facilities. Economic losses due to such a storm would be moderate.

The Haworth Fire Station is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. It is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Haworth Municipal Complex is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The facility is served by a water supply that is likely to fail under conditions of severe drought. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. The structure is in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. It is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Haworth School is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The United Water Treatment Facility and Reservoir meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. The structure is in a floodplain or flood prone area but has no prior history of flood damage. It is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to greater than 50% of the population in the vicinity of this facility. Economic losses due to such a storm would extend beyond impact area/timeframe.

Hillsdale Borough

The Borough of Hillsdale has identified three critical facilities.

The Hillsdale DPW is served by a water supply that is likely to fail under conditions of severe drought. The structure is in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The PSE&G Electric Substation The structure is in a floodplain or flood prone area but has no prior history of flood damage. It is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Woodcliff Lake Dam meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility's water supply is predicted to fail under moderate drought conditions, or significant water supply problems have been experienced.

The dam is in a floodplain or flood prone area and has experienced limited flood damage in the past. It is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. The facility is on a sloping/waterside site with soils prone to landslide or erosion, and/or is in a potential avalanche runout zone; with no history of damage.

Ho-Ho-Kus Borough

The Borough of Ho-Ho-Kus has identified 32 critical facilities, including 2 new facilities for this Plan update.

The Bogert Road Sewer Station, the Bogert Road Well #2, the Verizon Switching Station and the Hollywood Avenue Well #1 are each located in a floodplain or flood prone area and have experienced limited flood damage in the past. Winter storms pose a health/safety risk to 25-50% of the population in the vicinity of these facilities, or possible economic losses would be substantial.

The Brookview Sewer Station, DPW Facility, and Ho-Ho-Kus Wells #4 and #5 are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of each of these facilities. Economic losses due to such a storm would be moderate.

The Cellular Tower and Train Station and Fire Alarm Audio System are each slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Ho-Ho-Kus Ambulance Corps and the Ho-Ho-Kus Borough Hall and Shelter are each vulnerable to high wind due to wall opening size/lack of protection, roof configuration and/or several nearby trees, and essential external equipment is vulnerable. The facilities are located in a floodplain or flood prone area but have no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Flood Monitoring Station and the Mill Road Bridge are located in a floodplain or flood prone area and have experienced significant flood damage, or the property is a NFIP repetitive loss property.

The Northwest Bergen Pump Station and the Railroad Viaduct are in a flood plain or flood prone area, and have experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Radio Communications Facility and Hollywood Avenue Well #6 are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The ECLC School is vulnerable to high wind due to wall opening size/lack of protection, roof configuration and/or several nearby trees, and essential external equipment is vulnerable. Winter

storms pose a health/safety risk to 25-50% of the population in the vicinity of this facility, or possible economic losses would be substantial.

The Ho-Ho-Kus Public School and Shelter is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms pose a health/safety risk to 25-50% of the population in the vicinity of this facility, or possible economic losses would be substantial.

The Ho-Ho-Kus Fire Department and Ho-Ho-Kus Police Department are each vulnerable to high wind due to wall opening size/lack of protection, roof configuration and/or several nearby trees, and essential external equipment is vulnerable. The facilities are located in a floodplain or flood prone area but have no prior history of flood damage. Winter storms pose a health/safety risk to 25-50% of the population in the vicinity of these facilities, or possible economic losses would be substantial.

The Community Church and Shelter is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The church is located in a floodplain or flood prone area but have no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Brewster Dams are located in a floodplain or flood prone area but have no prior history of flood damage.

The Phone Trunk Station is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Hermitage is vulnerable to high winds due to wall opening size/lack of protection, roof configuration and/or several nearby trees, and essential external equipment is vulnerable. This facility does not meet the current fire code, is in/ adjacent to large vegetated areas, and has inadequate access and/or separation from other structures. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Ho-Ho-Kus Inn is vulnerable to high winds due to wall opening size/lack of protection, roof configuration and/or several nearby trees, and essential external equipment is vulnerable. The structure is in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Maple Avenue Bridge is in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

St. Bartholomew's Episcopal Church is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment

is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Water Storage System is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The East Gate Sewer Station* is slightly vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Emergency Landing Facility* is located in a floodplain or flood prone area but has no prior history of flood damage.

Leonia Borough

The Borough of Leonia has identified eight critical facilities.

The following critical facilities are not vulnerable to any natural hazards:

1. Borough Hall
2. Leonia Recreation/Shelter
3. Leonia Senior Housing
4. Public Safety Complex

The Anna C. Scott School, the Leonia Middle School, and the St. John's School are each vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Leonia High School is located in a flood plain or flood prone area, but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Little Ferry Borough

The Borough of Little Ferry has identified 18 critical facilities, one of which is new for this Plan update. One critical facility, Yankee Propane, has closed.

The Bergen County Utilities Authority has been updated to reflect an increase in vulnerability to flooding. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. The facility is also on a sloping or waterside site with moderate vulnerability to landslide or erosion, and/or is near but not in an avalanche runout zone.

The Early Learners Child Center has been updated to reflect a decrease in vulnerability to earthquakes, and an increase in vulnerability to storm surge. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. The

structure is in a floodplain or flood prone area but has no prior history of flood damage. The facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Eckel Road Pump Station has been updated to reflect an increase in vulnerability to storm surge. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The facility is located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Little Ferry DPW has been updated to reflect an increase in vulnerability to storm surge. This facility is vulnerable to high wind due to wall opening size/lack of protection, roof configuration and/or several nearby trees, and essential external equipment is vulnerable. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The facility is located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Little Ferry Hose Co. Fire Department has been updated to reflect a decrease in vulnerability to fire, and an increase in vulnerability to flooding and storm surge. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The facility is located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Little Ferry Library is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The library is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. The facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Little Ferry Municipal Building has been updated to reflect a decrease in vulnerability to flooding. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. . This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The facility is located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Little Ferry Nursery School has been updated to reflect an increase in vulnerability to storm surge and a decrease in vulnerability to winter storm. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. The structure is in a floodplain or flood prone area but has no prior history of flood damage. The facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Little Ferry Public Safety Building has been updated to reflect an increase in vulnerability to flooding and storm surge. This building is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. The facility is located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Losen Slote Drain Station has been updated to reflect an increase in vulnerability to fire, storm surge and winter storm, and a decrease in vulnerability to flooding. This facility does not meet current fire code, is in/ adjacent to large vegetated areas, and has inadequate access and/or separation from other structures. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone.

The Maiden Lane Drain Station, the Union Avenue Pump Station, the Williams Street Drainage Station and the Main & Franklin Pump Station are each located in a flood plain or flood prone area and has experienced limited flood damage in the past. The facility is located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of each of these facilities. Economic losses due to such a storm would be moderate.

The Main Street Pump Station is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The facility is located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage. The pump station is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or is near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of each of these facilities. Economic losses due to such a storm would be moderate.

The Memorial School and Washington School have both been updated to reflect an increase in vulnerability to flooding and storm surge, and a decrease in vulnerability to winter storm. These facilities are each slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities meet the current code, and are not close to heavily vegetated areas, but access and/or

separation from nearby structures increases fire risk. Each structure is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The facilities are located in a storm surge zone for a Category 3 hurricane or are located just inside a designated tsunami risk zone, but have no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Public Service Electric has been updated to reflect an increase in vulnerability to flooding. It is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Scientific Design is vulnerable to high wind due to wall opening size/lack of protection, roof configuration and/or several nearby trees, and essential external equipment is vulnerable. The facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The facility is located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Willow Lake Pump Station has been updated to reflect an increase in vulnerability to flooding and storm surge. It is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The facilities are located in a storm surge zone for a Category 3 hurricane or are located just inside a designated tsunami risk zone, but have no prior damage. The pump station is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or is near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Depyster Creek Pump Station has been updated to reflect an increase in vulnerability to fire and flooding. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This pump station is located in a flood plain or flood prone area and has experienced limited flood damage in the past. This facility is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. The facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. The pump station is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or is near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Little Ferry Hook & Ladder Fire Department has been updated to reflect an increase in vulnerability to flooding and winter storm. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. It is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss

property. This facility is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. The facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

St. Margaret's of Cortona* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The facility is located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Lodi Borough

The Borough of Lodi has identified six critical facilities. Additionally, Bergen County has identified one critical facility (new to this Plan update) located in the Borough of Lodi. This will be discussed first, followed by the critical facilities identified by the Borough of Lodi.

Bergen County Community Transportation/Lodi Armory* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in an area considered as low earthquake risk or has been constructed/retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The DPW Yard is vulnerable to high wind due to wall opening size/lack of protection, roof configuration and/or several nearby trees, and essential external equipment is vulnerable. The facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. The facility is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Lodi Borough Hall is located in a flood plain or flood prone area and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Lodi FD Engine 614 is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Lodi Fire Headquarters is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The facility is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. Winter storms may pose a

health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The LVAC-Lodi EMS Headquarters is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The structure is in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Washington School is very likely to be damaged or destroyed in a high wind, because it is a mobile or fragile structure, or wall openings can be expected to fail. The facility is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. Winter storms pose a health/safety risk to 25-50% of the population in the vicinity of these facilities, or possible economic losses would be substantial.

Lyndhurst Township

The Township of Lyndhurst has identified 19 critical facilities, including one new facility for this Plan update. Additionally, Bergen County has identified one critical facility (new to this Plan update) located in the Township of Lyndhurst. This will be discussed first, followed by the critical facilities identified by the Township of Lyndhurst.

Bergen Community College at the Meadowlands* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The college is located in an area considered as low earthquake risk or has been constructed/retrofitted to comply with current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The following critical facilities are not vulnerable to any natural hazards:

1. Carucci Apartments for Seniors
2. First Care Medical Center
3. Lyndhurst Fire Department
4. Lyndhurst High School
5. Lyndhurst Police Emergency Squad
6. Omega Plastics
7. Polyurethane Specialties of Delaware
8. Sacred Heart School
9. Sacred Heart Social Center
10. South Bergen Jointure Commission
11. Lyndhurst Parks Dept. and DPW
12. Lyndhurst Police Department
13. Lyndhurst Senior Center
14. Lyndhurst Town Hall

The Lyndhurst Pump Stations #1, 2, 3 and 4 are each located in a floodplain or flood prone area, but have no prior history of flood damage. These facilities are each located in a Category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or have experienced prior surge/tsunami damage.

The Lyndhurst Emergency Operations Center* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged.

Mahwah Township

The Township of Mahwah has identified 45 critical facilities. One critical facility has been removed with the closing of Ramsey Fuel Oil. Additionally, Bergen County has identified one critical facility located in the Township of Mahwah. This will be discussed first, followed by the critical facilities identified by the Township of Mahwah.

The Bergen County Public Safety Operations Center (OEM)* is located in an area considered as low earthquake risk or has been constructed/retrofitted to comply with the current earthquake building codes.

Stryker Orthopedics is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Betsy Ross School has been updated to reflect an increase in vulnerability to high winds and earthquake. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is served by a water supply that is likely to fail under severe drought conditions. This facility is in an area considered as moderate earthquake risk and has not been constructed/retrofitted to comply with the current earthquake codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Deerhaven Road is located in an area considered as low earthquake risk or has been constructed/retrofitted to comply with the current earthquake building codes.

The Mahwah DPW is meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The DPW is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Ford Water Wells #4 is located in a floodplain or flood prone area, but have no prior history of flood damage. This facility is located in an area considered as low earthquake risk or has been constructed/retrofitted to comply with the current earthquake building codes. The facility is located in a

storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone.

The George Washington School has been updated to reflect increased vulnerability to earthquake. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is served by a water supply that is likely to fail under severe drought conditions. This facility is in an area considered as moderate earthquake risk and has not been constructed/retrofitted to comply with the current earthquake codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

International Crossroads is served by a water supply that is likely to fail under severe drought conditions. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Joyce Kilmer School has been updated to reflect an increased vulnerability to high winds, earthquake and winter storm. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The school is served by a water supply that is likely to fail under severe drought conditions. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is in an area considered as moderate earthquake risk and has not been constructed/retrofitted to comply with the current earthquake codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Lenape Meadow School has been updated to reflect an increased vulnerability to high winds. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Mahwah Ambulance Co #1, #4, and the Mahwah Fire Company #2, 4 and 5 slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are each in an area considered as moderate earthquake risk and have not been constructed/ retrofitted to comply with the current earthquake codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Mahwah Fire Co #3 slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is in an area considered as moderate earthquake risk and has not been constructed/ retrofitted to comply with the current earthquake codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Mahwah Fire Co #1 meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is in an area considered as moderate earthquake risk and has not been constructed/ retrofitted to comply with the current earthquake codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Mahwah High School has been updated to reflect an increased vulnerability to high winds, fire, earthquake, and decreased vulnerability to winter storm. It is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This school is served by a water supply that is likely to fail under severe drought conditions. This facility does not meet current fire code, is in/ adjacent to large vegetated areas, and has inadequate access and/or separation from other structures. This facility is in an area considered as moderate earthquake risk and has not been constructed/retrofitted to comply with the current earthquake codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Mahwah Police Department is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Mahwah Public Works Garage is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. It is located in a floodplain or flood prone area, but has no prior history of flood damage. This facility is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Route 202 at Brook Street and Franklin Street are located in an area considered as low earthquake risk or have been constructed /retrofitted to comply with the current earthquake building codes.

Ramapo College is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Mahwah Town Hall is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes.

The UPS Data Center is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes.

Youngs Road, Glen Gray Road and Halifax Road are located in an area considered as low earthquake risk or have been constructed /retrofitted to comply with the current earthquake building codes.

The United States Liquidity Center* and Public Safety Operations Center (OEM)* are located in an area considered as low earthquake risk or have been constructed /retrofitted to comply with the current earthquake building codes.

The East Crescent Ave. Booster Station*, Nilsen Ave. Storage Tank and Booster Station*, East Slope Booster Station*, Ford Well Field*, 1 MGT and Repeater Radio for SCADA* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These water system facilities are located in an area considered as low earthquake risk or have been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Well #16*, Well #17*, Well #19*, 3 MGT/Tudor Rose Booster Station* and Campgaw Tank* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These water system facilities are located in an area considered as low earthquake risk or have been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Timber Creek*, Hearthstone Lift Station*, Litchult Lift Station*, Weastervelt Lift Station*, Fyke Brook Lift Station* and Ridge Gardens Lift Station* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These sewer system facilities are located in an area considered as low earthquake risk or have been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Maywood Borough

The Borough of Maywood has identified one critical facility.

The Senior Center is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a flood plain or flood prone area and has experienced limited flood

damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Midland Park Borough

The Borough of Midland Park has identified 12 critical facilities, including one new facility for this Plan update.

The Midland Park Borough Hall/Police Headquarters, Midland Park High School, Mill Gardens Assisted Living, and Midland Park Ambulance Corps are each slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Midland Park DPW Garage is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. It is located in a floodplain or flood prone area, but has no prior history of flood damage. The facility is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or it is near but not in an avalanche runout zone.

The DEP Dam is served by a water supply that is likely to fail under severe drought conditions. It is located in a floodplain or flood prone area, but has no prior history of flood damage. The facility is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or it is near but not in an avalanche runout zone.

The Godwin School and Highland School are each slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These schools meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Kentshire Apartments are each slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. They are located in a floodplain or flood prone area, but have no prior history of flood damage. The facility is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or it is near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Verizon/T-Mobile Cell Towers are each located in a flood plain or flood prone area and have experienced limited flood damage in the past.

The Midland Park Fire Department* is located in a floodplain or flood prone area, but has no prior history of flood damage. The facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up

to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Montvale Borough

The Borough of Montvale has identified one critical facility.

The Orange/Rockland Electric Substation is located in a floodplain or flood prone area, but has no prior history of flood damage. This facility is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Moonachie Borough

The Borough of Moonachie has identified 11 critical facilities.

The Civic Center has been updated to reflect an increase in vulnerability to flooding and storm surge. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. The facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Lincoln Place Pump Stations and Crest Foam have been updated to reflect an increase in vulnerability to flooding and storm surge. These facilities are located in a floodplain or flood prone area and have experienced significant flood damage, or each property is a NFIP repetitive loss property. These facilities are each located in a Category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or have experienced prior surge/tsunami damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Concord Street Pump Station has been updated to reflect an increase in vulnerability to flooding and storm surge, and a decrease in vulnerability to winter storms. This facility is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. This facility is located in a Category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or has experienced prior surge/tsunami damage.

The Moonachie DPW has been updated to reflect an increase in vulnerability to flooding and storm surge. It is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. The DPW is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Moonachie Road Pump Station has been updated to reflect an increase in vulnerability to flooding and storm surge, and a decrease in vulnerability to winter storms. This facility is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. The facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone.

The Moonachie Avenue Pump Station has been updated to reflect an increase in vulnerability to flooding and storm surge. It is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. The facility is located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage.

The Moonachie Fire Department been updated to reflect an increase in vulnerability to high winds and storm surge. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. The facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Municipal Building has been updated to reflect an increase in vulnerability to flooding and storm surge. This facility is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. The facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Moonachie First Aid Squad has been updated to reflect an increase in vulnerability to flooding and storm surge. This facility is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. The facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Robert L. Craig School has been updated to reflect an increase in vulnerability to flooding and storm surge, and a decrease in vulnerability to winter storms. This facility is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. This facility is located in a Category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or has experienced prior surge/tsunami damage.

New Milford Borough

The Borough of New Milford has identified 22 critical facilities.

Ascension School-Transfiguration Academy, the B.F. Gibbs Public School, and the Berkley Street School are vulnerable to winter storms, which may pose a health/safety risk to 25-50% of the population in the vicinity of these facilities, or possible economic losses would be substantial.

The New Bridge Road Bridge is not vulnerable to any natural hazards.

The Institute for Educational Achievement and the New Milford Middle School are vulnerable to winter storms, which may pose a health/safety risk to 25-50% of the population in the vicinity of these facilities, or possible economic losses would be substantial.

New Bridge Road is located in a flood plain or flood prone area but has no prior history of flood damage. The roadway is located in a storm surge zone for a Category 3 hurricane, or it is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The New Milford DPW is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The DPW facility is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

St. Joseph's School (upper grades), the Solomon Schechter Day School of Bergen County, and the Hovnanian Armenian School of NJ are vulnerable to winter storms, which may pose a health/safety risk to 25-50% of the population in the vicinity of these facilities, or possible economic losses would be substantial.

The New Milford High School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The high school is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. The high school is located in a storm surge zone for a Category 3 hurricane, or it is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of this facility, or possible economic losses would be substantial.

The PSE&G Substation and Electric Switching Station is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The station is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of this facility, or possible economic losses would be substantial.

The New Milford Municipal Building is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The New Milford Volunteer Ambulance Corps is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk.

The New Milford Volunteer Fire Department Company #1 and #2 are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged.

River Road is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. It is located in a floodplain or flood prone area, but has no prior history of flood damage. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of this facility, or possible economic losses would be substantial.

The Sunbridge Care and Rehabilitation Center is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The United Water Resource Landscaping Yard is meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The yard is located in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes.

North Arlington Borough

The Borough of North Arlington has identified 20 critical facilities, 8 of which are new for this Plan update.

The Daniel Morris Firehouse #1 meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. The facility is on a sloping/waterside site with soils prone to landslide or erosion, and/or is in a potential avalanche runout zone; with no history of damage. It is also located in a storm surge zone for a Category 3 hurricane, or it is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Jefferson School, North Arlington High School, and North Arlington Middle School are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These schools meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk.

The North Arlington Borough Hall/Police Station is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. This facility is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The North Arlington DPW and North Arlington/Lyndhurst Joint Waster Water are located in a flood plain or flood prone area and have experienced limited flood damage in the past. These facilities are each located in a storm surge zone for a Category 3 hurricane, or it is located just inside a designated tsunami risk zone, but has no prior damage. These facilities are on sloping/waterside sites with moderate vulnerability to landslide or erosion, and/or are near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The North Arlington Health and Senior Center is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. This facility is served by a water supply that is likely to fail under moderate drought conditions. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The PSE&G Power Sub-Station (North Arlington) is served by a water supply that is likely to fail under severe drought conditions. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is located in a storm surge zone for a Category 3 hurricane, or it is located just inside a designated tsunami risk zone, but has no prior damage. The facility is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or it is near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

St. Paul's Church is served by a water supply that is likely to fail under severe drought conditions. The church is vulnerable to winter storms, which may pose a health/safety risk to 25-50% of the population in the vicinity of these facilities, or possible economic losses would be substantial.

The Washington School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The school is served by a water supply that is likely to fail under moderate drought conditions. This facility meets the current code, and is not close to heavily vegetated areas, but access

and/or separation from nearby structures increases fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Williams Transco Natural Gas Pipeline is located in a floodplain or flood prone area, but has no prior history of flood damage.

North Arlington Fire Department #3* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged.

Queen of Peace Grammar School* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk.

Corsi House* is vulnerable to high wind due to wall opening size/lack of protection, roof configuration and/or several nearby trees, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk.

Queen of Peace Church* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of this facility, or possible economic losses would be substantial. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk.

Schuyler Ave. Fire House* is vulnerable to winter storms, which may pose a health/safety risk to 25-50% of the population in the vicinity of this facility, or possible economic losses would be substantial.

North Arlington Little League Field* is vulnerable to high wind due to wall opening size/lack of protection, roof configuration and/or several nearby trees, and essential external equipment is vulnerable. It is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of this facility, or possible economic losses would be substantial.

North Arlington EMS Building* is vulnerable to high wind due to wall opening size/lack of protection, roof configuration and/or several nearby trees, and essential external equipment is vulnerable. This facility is located in a flood plain or flood prone area and has experienced limited flood damage in the past. This facility is on sloping/waterside sites with moderate vulnerability to landslide or erosion,

and/or is near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of this facility, or possible economic losses would be substantial.

Queen of Peace High School* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is served by a water supply that is likely to fail under severe drought conditions. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Northvale Borough

The Borough of Northvale has identified 10 critical facilities.

The following critical facilities are not vulnerable to any natural hazards:

1. Northvale Borough Hall
2. Northvale Fire Department
3. Northvale Police Department
4. Northvale Volunteer Ambulance Corps
5. Spectrum for Living
6. Tennessee Gas Pipeline

The BCUA Sanitary Sewer Pump Station and Northvale Sanitary Pump Station meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. These facilities are located in a floodplain or flood prone area, but have no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Thomas Jefferson School is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Norwood Borough

The Borough of Norwood has identified eight critical facilities.

Buckingham at Norwood-Care and Rehab Center, the Norwood Ambulance Building and the Norwood Borough Hall are located in a floodplain or flood prone area, but have no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Norwood Fire House is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. Winter storms may pose a

health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Norwood DPW, Police Station, Police Station-EOC and Norwood Public School are located in a floodplain or flood prone area, but have no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Oakland Borough

The Borough of Oakland has identified six critical facilities.

None of the following critical facilities are vulnerable to natural hazards:

1. Oakland DPW Facility
2. Oakland Fire Department Station #1
3. Oakland Fire Department Station #2
4. Oakland First Aid Squad
5. Oakland Municipal Building
6. Oakland Police Headquarters

Old Tappan Borough

The Borough of Old Tappan has identified 35 critical facilities.

The Bank of America, Kearny Federal Savings Bank, KinderCare Learning Center, and T. Baldwin Demarest School are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. These facilities are in an area considered as low earthquake risk or have been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Old Tappan Sewer Pump Stations #2, 3, 4, 5 and 6 are in an area considered as low earthquake risk or have been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Bi-State Plaza Shopping Center is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The center is served by a water supply that is likely to fail under severe drought conditions. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of the center. Economic losses due to such a storm would be substantial.

The Old Tappan Sewer Pump Station #1 is in a flood plain or flood prone area and has experienced limited flood damage in the past. This facility is in an area considered as low earthquake risk or have been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Charles Dewolf Middle School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The school is served by a water supply that is likely to fail under severe drought conditions. The school is in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Korean Presbyterian Church of the Palisades, the Old Tappan Senior Housing, the Old Tappan DPW, the Old Tappan First Aid Corps and the Old Tappan Fire Headquarters are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. These facilities meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. These facilities are in an area considered as low earthquake risk or have been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Lake Tappan is served by a water supply that is likely to fail under severe drought conditions. This facility is located in a floodplain or flood prone area, and has experienced limited flood damage in the past. This facility is in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. The facility is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or it is near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Lake Tappan Dam is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The facility is served by a water supply that is likely to fail under severe drought conditions. This facility is in a floodplain or flood prone area but has no prior flood damage. The facility is in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. The facility is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or it is near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Northern Valley Regional High School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The school is served by a water supply that is likely to fail under severe drought

conditions. The school is in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of the School. Economic losses due to such a storm would be substantial.

The Tennessee Gas Pipeline and the Williams Transco Gas Pipeline are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are located in a floodplain or flood prone area, but have no prior history of flood damage. These facilities are in an area considered as low earthquake risk or have been constructed /retrofitted to comply with the current earthquake building codes. These facilities are on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or are near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Old Tappan Borough Hall is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is served by a water supply that is likely to fail under severe drought conditions. This facility is in a floodplain or flood prone area but has no prior flood damage. This facility is in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Old Tappan Exxon is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The school is served by a water supply that is likely to fail under severe drought conditions. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is in a floodplain or flood prone area but has no prior flood damage. These facilities are in an area considered as low earthquake risk or have been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Old Tappan Public Library, Prince of Peach Church, St. Pius X Church, Tom's Automotive Specialists, and Trinity Reformed Church are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. These facilities meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. These facilities are in an area considered as low earthquake risk or have been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Old Tappan Police Headquarters is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. The Police HQ is served by a water supply that is likely to fail under severe drought

conditions. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of this facility. Economic losses due to such a storm would be substantial.

Pearson Publishing is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is served by a water supply that is likely to fail under severe drought conditions. This facility is in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Rockland Electric (Con Ed) Substation is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. This facility is in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of this facility. Economic losses due to such a storm would be substantial.

Sunrise Assisted Living is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. This facility is served by a water supply that is likely to fail under moderate drought conditions. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increases fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Oradell Borough

The Borough of Oradell has identified five critical facilities.

The Oradell Fire Headquarters is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Oradell Public Works is in a flood plain or flood prone area and has experienced significant flood damage in the past. This property may also be a NFIP repetitive loss property. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The New Jersey Transit Bus Garage is located in a flood plain or flood prone area and has experienced significant flood damage in the past. This facility is located in an area considered as high earthquake risk and has not been constructed/ retrofitted to comply with the current earthquake codes. This property

may also be a NFIP repetitive loss property. This facility is located in a storm surge zone for a Category 3 hurricane, or it is located just inside a designated tsunami risk zone, but has no prior damage.

The Oradell Police Headquarters and EOC are is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of these facilities. Economic losses due to such a storm would be substantial.

The PSE&G Gas Distribution Facility is in a flood plain or flood prone area and has experienced significant flood damage in the past. This property may also be a NFIP repetitive loss property. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of this facility. Economic losses due to such a storm would be substantial.

Palisades Park Borough

The Borough of Palisades Park has identified 15 critical facilities.

The Palisades Park Board of Education, Palisades Park Borough Hall, Central Bible Church and First Presbyterian Church are served by a water supply that is likely to fail under moderate drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Palisades Park DPW and Time Warner cable are served by a water supply that is likely to fail under moderate drought conditions. These facilities are located in a floodplain or flood prone area, but have no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Palisades Park Ambulance Corps, Grace Lutheran Church, Korean Presbyterian Church, Lindbergh Elementary School and Notre Dame Interparochial School are served by a water supply that is likely to fail under moderate drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Palisades Park Fire House, Senior Center, Palisades Park Jr/Sr High School and St. Nichols Pre-School are served by a water supply that is likely to fail under moderate drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Paramus Borough

The Borough of Paramus has identified 32 critical facilities. Additionally, Bergen County has identified 8 critical facilities located in the Borough of Paramus, including 5 facilities which are new to this Update. These will be discussed first, followed by the critical facilities identified by the Borough of Paramus. The Bergen County Office of Emergency Management has relocated to Mahwah (see Bergen County Public Safety Operations Center-OEM).

The Bergen County Medical Examiner's Office has been updated to reflect an increase in vulnerability to earthquake, and a decrease in vulnerability to flooding. This facility is located in an area considered as

low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms pose a health/safety risk to 25-50% of the population in the vicinity of this facility, or possible economic losses would be substantial.

The Bergen Regional Medical Center has been updated to reflect an increased risk of flooding, and a decreased risk of fire. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area, but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Bergen County Police Headquarters* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Bergen County Environmental Health and Special Services School* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Bergen County DPW Operations and Mosquito Control Division* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Bergen Community College* and Bergen County Special Services Schools* are located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Bergen County Technical High School-Paramus* is served by a water supply that is likely to fail under moderate drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The following critical facilities are not vulnerable to any natural hazards:

1. Radio Antenna/Repeater Site (Fairview & Carlough)
2. Radio Antenna/Repeater Site (Garden State Plaza)
3. Radio Antenna/Repeater Site (Police HQ)

4. Radio Antenna/Repeater Site (Rescue Bldg)
5. Sewer Pump Station (Prospect Street)
6. Sewer Pump Station (Route 17)

The Paramus Ambulance Building and Emergency Operations Center have been updated to reflect an increase in vulnerability to drought and winter storm, and a decrease in vulnerability to high winds. These facilities are served by a water supply that is likely to fail under moderate drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Fire Station Companies #1, 2 and 3 have been updated to reflect a decrease in vulnerability to high winds, and an increase in vulnerability to winter storm. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Fire Station Company #4 has been updated to reflect an increase in vulnerability to drought and winter storms. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. It is served by a water supply that is likely to fail under moderate drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Arcola Power Substation, Orchard Hills Power Substation and Paramus Park Power Substation are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. These facilities are located in a floodplain or flood prone area, but have no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Paramus Borough Hall has been updated to reflect an increase in vulnerability to drought, flooding and winter storm, and a decrease in vulnerability to high winds. These facilities are served by a water supply that is likely to fail under moderate drought conditions. The Borough Hall is located in a floodplain or flood prone area and has experienced limited flood damage in the past. Winter storms pose a health/safety risk to 25-50% of the population in the vicinity of this facility, or possible economic losses would be substantial.

The Police Headquarters have been updated to reflect an increase in vulnerability to winter storm, and a decrease in vulnerability to high winds. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Rescue Squad has been updated to reflect an increase in vulnerability to drought and winter storm. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. It is served by a water supply that is likely to fail under moderate drought conditions. Winter storms may

pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Paramus DPW has been updated to reflect an increase in vulnerability to drought and winter storm, and a decrease in vulnerability to high winds. It is located in a floodplain or flood prone area, but has no prior history of flood damage. This facility is served by a water supply that is likely to fail under moderate drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Radio Antenna/Repeater Site (US Cable) is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area, but has no prior history of flood damage.

The Radio Antenna/Repeater Sites at GW Cemetery, PFD #1, PFD #2 and PFD #4 are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged.

The Sewer Pump Stations at Grove Street and Southcrest Drive are located in a floodplain or flood prone area and have experienced limited flood damage in the past.

The Spring Valley Road Power Substation and Woodland Ave Power Substation are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. These facilities are located in a floodplain or flood prone area, but have no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Sewer Pump Station at Dunderhook Road has been updated to reflect a decrease in vulnerability to high winds. This facility is located in a floodplain or flood prone area and has experienced limited flood damage in the past.

The Sunrise Assisted Living Center is served by a water supply that is likely to fail under moderate drought conditions. This facility is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Park Ridge Borough

The Borough of Park Ridge has identified six critical facilities.

The Park Ridge Borough Hall has been updated to reflect an increase in vulnerability to high winds, flooding and winter storm, and a decrease in vulnerability to earthquake. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. It is located in a

flood plain or flood prone area and has experienced significant flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The DPW/Water/Electric Department has been updated to reflect an increase in vulnerability to flooding. It is located in a floodplain or flood prone area and has experienced limited flood damage in the past. This facility is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes.

The Fire Department has been updated to reflect an increase in vulnerability to flooding and winter storm. This facility is located in a floodplain or flood prone area and has experienced limited flood damage in the past. This facility is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Park Ridge High School is located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes.

The Park Ridge Police Headquarters/TriBoro Radio EOC is located in a floodplain or flood prone area, but has no prior history of flood damage. This facility is located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes.

Tri-Boro Ambulance has been updated to reflect an increase in vulnerability to high winds and winter storm. It is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. This facility is located in a floodplain or flood prone area, but has no prior history of flood damage. This facility is located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms pose a health/safety risk to 25-50% of the population in the vicinity of this facility, or possible economic losses would be substantial.

Ramsey Borough

The Borough of Ramsey has identified 11 critical facilities, two of which are new to this Plan update.

The Ramsey Ambulance Corps is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is served by a water supply that is likely to fail under moderate drought conditions. This facility is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Eric Smith School and Shelter, The Ramsey Fire Department, the Ramsey Rescue Squad and Ramsey High School are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are located in an area considered as low earthquake risk or have been

constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Ramsey DPW Garage and Ramsey Police Department are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The facilities are located in an area considered as moderate earthquake risk, and has not been constructed/ retrofitted to comply with current earthquake codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Ramsey Municipal Building is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This facility is located in an area considered as moderate earthquake risk, and has not been constructed/ retrofitted to comply with current earthquake codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Ramsey Public Library is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The library meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This facility is located in a floodplain or flood prone area, but has no prior history of flood damage. This facility is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

NJ Transit Train Station (Route 17)* meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This facility is located in a floodplain or flood prone area, but has no prior history of flood damage. This facility is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Crystal Spring Lake Dam* is very likely to be damaged or destroyed in a high wind, because it is a mobile or fragile structure, or wall openings can be expected to fail. The facility is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. The Dam is also located in an area considered as high earthquake risk and has not been constructed/ retrofitted to comply with the current earthquake building codes. It is located on a sloping or waterside site highly vulnerable to landslide or erosion, and/or is in a predicted avalanche runout zone, or has a history of such damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Ridgefield Borough

The Borough of Ridgefield has identified 24 critical facilities.

The English Neighborhood Reform Church, Ridgefield Ambulance Corps, and Ridgefield DPW are located in a floodplain or flood prone area, but have no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The PSE&G Generating Station and PSE&G Substation are located in a floodplain or flood prone area, but have no prior history of flood damage.

Ridgefield Fire Houses #1 and #2 are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Ridgefield Borough Hall is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Ridgefield Community Center is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Ridgefield Fire House #3 is located in a floodplain or flood prone area and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Ridgefield Memorial High School, Ridgefield Bergen Boulevard School, Shaler Boulevard School, and Slocum Skews School are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The United Water Tanks and Transcontinental Pipeline are not vulnerable to any natural hazards.

The Freight Railroad (all) is located in a floodplain or flood prone area and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The New Jersey Turnpike, and NJ State Highway 46 (all) meet the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Wolf Creek Culverts (all) are located in a flood plain or flood prone area and have experienced limited flood damage in the past. The culverts are on a sloping or waterside site highly vulnerable to landslide or erosion, and/or are in a predicted avalanche runout zone, or have a history of such damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Ridgefield Park Village

The Village of Ridgefield has identified 21 critical facilities, including two new facilities for this Plan update.

Active Chemical Co. #4, Friendship Hook & Ladder Co. #1, and Hazelton Truck Co. #2 are vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. The facilities meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Callahan Chemical Co. and Dowling Fuel Co. are vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. These facilities are located in a floodplain or flood prone area, but have no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Knights of Columbus, Elks Club and Police Department, Municipal Building, OEC are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Hose Co. #1, Overpeck Engine Co. #2, and Westview Hose Co. #3 are vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. The facilities meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Ridgefield Park Grant School, Lincoln School, Roosevelt School and St. Francis School are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Ridgefield Park High School has been updated to reflect an increase in vulnerability to flooding. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area, but has no prior history of flood damage.

Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the high school. Economic losses due to such a storm would be moderate.

The EMS, Rescue, Fire Chiefs Backup EOC is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The NYS&W Fuel Depot is very likely to be damaged or destroyed in a high wind, because it is a mobile or fragile structure, or wall openings can be expected to fail. This facility does not meet current fire code, is in/ adjacent to large vegetated areas, and has inadequate access and/or separation from other structures. This facility is located in a floodplain or flood prone area, but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Ridgfield Park DPW is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area, but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Hanal High School* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this school. Economic losses due to such a storm would be moderate.

The Emergency Operations Center* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this school. Economic losses due to such a storm would be moderate.

Ridgewood Village

The Village of Ridgewood has identified 14 critical facilities.

The Carr Water Well System Building is located in a floodplain or flood prone area, and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Ridgewood Fire Dept. Headquarters, Parks Building and Water Building are each located in a floodplain or flood prone area but none of the facilities has a prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Ridgewood Village Hall/Police Station is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Sewer Pump Stations at Bellair Road, Franklin Turnpike and Lake Avenue are each located in a floodplain or flood prone area but none of the facilities has a prior history of flood damage.

The Water Well Pumps at Grove Street, Lakeview Drive, Linwood & Northern Parkway, Ridgewood Avenue, Saddle River Road and Spring Street are located in a floodplain or flood prone area, and have experienced limited flood damage in the past.

River Edge Borough

The Borough of River Edge has identified 12 critical facilities, including one new facility for this Plan update.

Cherry Hill School has been updated to reflect an increase in vulnerability to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The River Dell Middle School, River Edge Ambulance Corps and River Edge Police Department are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

PSE&G has been updated to reflect an increase in vulnerability to flooding, storm surge and winter storm. It is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. This facility is located in a Category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or has experienced prior surge/tsunami damage. Winter storms may pose a health/safety risk to greater than 50% of the population in the vicinity of this facility. Economic losses due to such a storm would extend beyond impact area/timeframe.

River Edge Fire Dept. Co. #2 has been updated to reflect an increase in vulnerability to flooding and storm surge. It is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. This facility is located in a Category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or has experienced prior surge/tsunami damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Roosevelt School, St. Peter's School and Yeshiva of NJ are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The River Edge Municipal Building is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is

likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Von Steuben House has been updated to reflect an increase in vulnerability to flooding and storm surge. It is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. This facility is located in a Category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or has experienced prior surge/tsunami damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

River Edge Volunteer Fire Department Company #1* is not vulnerable to any natural hazards.

River Vale Township

The Township of River Vale has identified 10 critical facilities.

The Ambulance Corps, Police Headquarters, Public Works Garage and South Fire Station are each located in a floodplain or flood prone area but have no prior history of flood damage.

The Holdrum Middle School, Roberge School and Woodside School are not vulnerable to any natural hazards.

Lake Tappan and the North Fire Station are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Town Hall has been updated to reflect an increase in vulnerability to landslide. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. It is located on a sloping or waterside site highly vulnerable to landslide or erosion, and/or is in a predicted avalanche runout zone, or has a history of such damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Rochelle Park Township

The Township of Rochelle Park has identified six critical facilities, including one new facility for this Plan update.

The Bristol Manor Nursing Home, Fire/EMS/DPW Headquarters and Ramada Inn are located in a floodplain or flood prone area and have experienced significant flood damage, or the property is a NFIP repetitive loss property. These facilities are located in an area considered as moderate earthquake risk, and has not been constructed/ retrofitted to comply with current earthquake codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Township Offices/EOC and Police/EOC are located in a floodplain or flood prone area and have experienced significant flood damage, or the property is a NFIP repetitive loss property. These facilities

are located in an area considered as moderate earthquake risk, and have not been constructed/retrofitted to comply with current earthquake codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The AT&T Communications Center* is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. This facility is located in an area considered as moderate earthquake risk, and has not been constructed/retrofitted to comply with current earthquake codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Rockleigh Borough

The Borough of Rockleigh has identified one critical facility. Additionally, Bergen County has identified one critical facility (new to this Update) located in the Borough of Rockleigh. This will be discussed first, followed by the critical facilities identified by the Borough of Rockleigh.

The Bergen County Health Care Center* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area but has no prior history of flood damage. The health care center is in an area considered as low earthquake risk or has been constructed/retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Jewish Home is not vulnerable to any natural hazards.

Rutherford Borough

The Borough of Rutherford has identified 8 critical facilities, including 7 facilities new to this Update.

The Rutherford Police Headquarters and Emergency Operations Center (EOC) have been updated to reflect a decrease in vulnerability to winter storm. This facility is not vulnerable to any natural hazards.

The Rutherford First Aid Squad* and Verizon Central Office* are not vulnerable to any natural hazards.

The Rutherford Fire Department locations at Union Ave.*, Ames Ave.* and Mortimer Ave.* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged.

The Borough of Rutherford Public Works Department* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a flood plan or flood prone area and has experienced some limited flood damage in the past. It is also located in a storm surge zone for a Category 3 hurricane, or it is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of the storage facility. Economic losses due to such a storm would be moderate.

The Rutherford Joint Meeting Sewage Pump Station* is in an area considered as low earthquake risk or has been constructed /retrofitted to comply with the current earthquake building codes.

Saddle Brook Township

The Township of Saddle Brook has identified nine critical facilities, 5 of which are new to this Update.

The Brookwood Convalescent Home, the Kessler Institute and St. Philips School are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The facilities are each located in a floodplain or flood prone area and each has experienced significant flood damage, or the property is a NFIP repetitive loss property. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Saddle Brook High School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area, and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Engine Company #2 Fire Station* is not vulnerable to any natural hazards.

The Hook and Ladder Company #1 Fire Station* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged.

The Engine Company #1 Fire Station* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area, and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Saddle Brook Municipal Building* is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Saddle Brook Police Headquarters* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Saddle River Borough

The Borough of Saddle River has identified six critical facilities.

The Brighton Gardens Assisted Care Facility, Saddle River Day School and Saddle River Municipal Building are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Saddle River Public Safety Complex, Wandell School and Villa Marie Assisted Care Facility are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

South Hackensack Township

The Township of South Hackensack has identified 20 critical facilities, 10 of which are new to this Update.

Calicooneck Road is very likely to be damaged or destroyed in a high wind, because it is a mobile or fragile structure, or wall openings can be expected to fail. This facility is served by a water supply that is likely to fail under severe drought conditions. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Grove Street Sewage Station and Saddle River Avenue Sewage Station are each located in a floodplain or flood prone area, and each has experienced limited flood damage in the past. These facilities are located in a storm surge area for a category 4 or 5 hurricane, or are located at the edge of a designated tsunami risk zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The J. Josephson Company has been updated to reflect an increase in vulnerability to flooding and storm surge. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area, and has experienced limited flood damage in the past. This facility is located in a Category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or has experienced prior surge/tsunami damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Leuning Street is very likely to be damaged or destroyed in a high wind, because it is a mobile or fragile structure, or wall openings can be expected to fail. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This

facility is located in a floodplain or flood prone area, and each has experienced limited flood damage in the past. Winter storms pose a health/safety risk to 25-50% of the population in the vicinity of this facility, or possible economic losses would be substantial.

Phillips Avenue is very likely to be damaged or destroyed in a high wind, because it is a mobile or fragile structure, or wall openings can be expected to fail. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This facility is served by a water supply that is likely to fail under severe drought conditions. This facility is located in a floodplain or flood prone area, and each has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Restaurant Depot has been updated to reflect an increased vulnerability to flooding. It meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This facility is located in a floodplain or flood prone area, and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The US Post Office has been updated to reflect an increased risk to flooding. It is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area, and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Vreeland Avenue is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area, and each has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Wesley Street is very likely to be damaged or destroyed in a high wind, because it is a mobile or fragile structure, or wall openings can be expected to fail. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This facility is located in a floodplain or flood prone area, and each has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Public Service Electric Sub Station* is very likely to be damaged or destroyed in a high wind, because it is a mobile or fragile structure, or wall openings can be expected to fail. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This facility is located in a floodplain or flood prone area, and each has experienced limited flood damage in the past. It is also located in a storm surge zone for a Category 3 hurricane, or it is located just inside a designated tsunami risk zone, but has no prior damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Huyler Street Pump Station* is located in a floodplain or flood prone area but has no prior history of flood damage. It is also located in a storm surge zone for a Category 3 hurricane, or it is located just inside a designated tsunami risk zone, but has no prior damage.

Memorial Elementary School* is located in a floodplain or flood prone area but has no prior history of flood damage. This facility is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Town Hall Complex* is located in a floodplain or flood prone area but has no prior history of flood damage. This facility's water supply is predicted to fail under moderate drought conditions, or significant water supply problems have been experienced. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Town Hall Complex- Ambulance Service* is located in a floodplain or flood prone area but has no prior history of flood damage. This facility's water supply is predicted to fail under moderate drought conditions, or significant water supply problems have been experienced. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Town Hall Complex- Police Department* is located in a floodplain or flood prone area but has no prior history of flood damage. This facility's water supply is predicted to fail under moderate drought conditions, or significant water supply problems have been experienced. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Town Hall Complex- Senior Center* is located in a floodplain or flood prone area but has no prior history of flood damage. This facility's water supply is predicted to fail under moderate drought conditions, or significant water supply problems have been experienced. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Fire Headquarters* is located in a floodplain or flood prone area but has no prior history of flood damage. This facility's water supply is predicted to fail under moderate drought conditions, or significant water supply problems have been experienced. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Department of Public Works* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is located in a floodplain or flood prone area but has no prior history of flood damage. This facility's water supply is predicted to fail under moderate drought conditions, or significant water supply problems have been experienced. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Garfield Park Sewage Pumping Station* is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. This facility's water supply is predicted to fail under moderate drought conditions, or significant water supply problems have been experienced. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Teaneck Township

The Township of Teaneck has identified six critical facilities.

The DPW Yard does not meet the current code, and is in or adjacent to large vegetated areas, and has inadequate access and/or separation from other structures. The plant is located in a floodplain or flood prone area and has experienced limited flood damage in the past. The plant is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes.

The Teaneck Fire Department Headquarters does not meet the current code, is in/adjacent to vegetated areas, with access limitations/structure separation that make fire suppression difficult. The plant is also located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Holy Name Hospital is served by a water supply that is likely to fail under severe drought conditions. The hospital is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Teaneck Municipal Building is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. It does not meet the current code, and is in or adjacent to large vegetated areas, and has inadequate access and/or separation from other structures. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Teaneck Police Headquarters does not meet the current code, and is in or adjacent to large vegetated areas, and has inadequate access and/or separation from other structures. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Pump Station is located in an area considered as low earthquake risk or has been constructed/retrofitted to comply with the current earthquake building codes. This facility is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone.

Tenafly Borough

The Borough of Tenafly has identified 20 critical facilities.

The Franciscan Sisters Convent, Lubavich on the Palisades, Tenafly Borough Hall and Richard Street Sewage Pump Station are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Cell Tower is located in a floodplain or flood prone area but has no prior history of flood damage.

The Country Manor Nursing Home is in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Fiber Optic Network is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

J. Spencer Smith Elementary School, Jewish Community Center on the Palisades, Malcolm Mackay Elementary School and Ralph Maugham Elementary School are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Tenafly Fire Department and Volunteer Ambulance Corps are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The SMA Fathers African Mission, Tenafly High School, Tenafly Middle School and Walter Stillman Elementary School are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Verizon Switching Center is not vulnerable to any natural hazards.

The Tenafly DPW is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Tenafly Police Department is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Teterboro Borough

The Borough of Teterboro has identified five critical facilities. Additionally, Bergen County has identified three critical facilities located in the Borough of Teterboro, including one facility new to this Plan update. These will be discussed first, followed by the critical facilities identified by the Borough of Teterboro.

The Bergen County Animal Shelter has been updated to reflect an increase in vulnerability to high winds and earthquake, and a decrease in vulnerability to flooding and winter storm. It is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is an NFIP repetitive loss property. Winter storms pose a health/safety risk to 25-50% of the population in the vicinity of this facility, or possible economic losses would be substantial.

The Bergen County Youth Complex (JDC)* is located in a floodplain or flood prone area but has no prior history of flood damage. This facility is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Bergen County Technical High School-Teterboro* is located in a floodplain or food prone area and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Teterboro Municipal Building and Teterboro Airport are located in a floodplain or food prone area and have experienced limited flood damage in the past. These facilities are located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Public Works Facility is located in a floodplain or food prone area and has experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Sewer & Storm Water Pumping Station is located in a floodplain or food prone area and has experienced limited flood damage in the past. These facilities are located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes.

Upper Saddle River Borough

The Borough of Upper Saddle River has identified two critical facilities, including one new facility for this Update.

The Municipal Complex is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Police Headquarters* is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate. It does not meet the current code, and is in or adjacent to large vegetated areas, and has inadequate access and/or separation from other structures.

Waldwick Borough

The Borough of Waldwick has identified 31 critical facilities, including one new facility for this Plan update.

The following critical facilities are not vulnerable to any natural hazards:

1. PSE&G Substation
2. Traphagen Grammar School
3. Waldwick Ambulance Corps
4. Well (Hopper Avenue)
5. Well (Malcolm Street)
6. Well (Schuler Avenue)
7. Well (W. Prospect Street.)
8. Well (Whites Lane)

The 7th Day Adventist School, Borough Administration Building, Company #2 Fire House, Crescent Grammar School and Emergency Operations Center are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Building Block Child Center, Department of Public Works, Rainbow Corners Cooperative Nursery, Small World Day Care Center, and Waldwick Middle/High School (Shelter) are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Forum School is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Crescent Avenue from start to end is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Franklin Turnpike from start to end meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This facility is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Little School is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Northwest Bergen Utilities Authority is located in a floodplain or flood prone area and has experienced significant flood damage, or the property is a NFIP repetitive loss property.

Route 17 (start) is located in an area considered as low earthquake risk or has been constructed/retrofitted to comply with the current earthquake building codes. Route 17 (end) is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Village School and White Pond Dam are located in a floodplain or food prone area and have experienced limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Waldwick Fire Company #1, Waldwick Middle/High School and Police Headquarters are vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Waldwick Train Station meets current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk.

Wyckoff Avenue* is not vulnerable to any natural hazards.

Wallington Borough

The Borough of Wallington has identified 12 critical facilities, including 11 for this Plan update.

Farmland Dairies meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This facility is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Fire House-Park Row* and Emergency/Ambulance Building* meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter

storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Fire/Emergency Company* meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Water Pump Stations at Johnson Ave.* and Paterson Ave.* are vulnerable to winter storms, which may pose a health/safety risk to 25-50% of the population in the vicinity of these facilities. Economic losses due to such a storm would be substantial.

The Out Building* and Old VFW Building* are located in a floodplain or flood prone area, and have experienced limited flood damage in the past. These facilities are located in a Category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or have experienced prior surge/tsunami damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Public Works/Library* is located in a floodplain or flood prone area, and has experienced limited flood damage in the past. This facility is located in a Category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or has experienced prior surge/tsunami damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk.

The Police/Administration Building* is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Fire House- Union Blvd.* is located in a floodplain or flood prone area but has no prior history of flood damage. Winter storms pose a health/safety risk to more than 50% of the population in the vicinity of this facility. Economic losses due to such a storm would extend beyond the impact area/timeframe. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk.

The Municipal Offices* are located in a floodplain or flood prone area but have no prior history of flood damage. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of these facilities. Economic losses due to such a storm would be substantial. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk.

Washington Township

The Township of Washington has identified 11 critical facilities, including one new facility for this Plan update.

The Township of Washington Police Department Communications is vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. The facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Township of Washington Police Department has been updated to reflect a decrease in vulnerability to high winds. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Immaculate Heart Academy, Jesse F. George School and Washington School are each on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or are near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Washington DPW, Municipal Building and Volunteer Ambulance Corps are vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Washington Volunteer Fire Department has been updated to reflect a decrease in vulnerability to high winds and landslides. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The fire department meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. It is located on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or is near but not in an avalanche runout zone. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Westwood Jr./Sr. High School has been updated to reflect a decrease in vulnerability to fire and flooding. This facility is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Washington Grand* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Westwood Borough

The Borough of Westwood has identified 15 critical facilities, including 14 added for this update.

The Ketler School is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The school is served by a water supply that is likely to fail under severe drought conditions. The facility is located in a floodplain or flood prone area that has experienced some limited flood damage in the past. This facility is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of the School. Economic losses due to such a storm would be substantial.

The Westwood Substation* is located in a floodplain or flood prone area that has experienced some limited flood damage in the past. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Kurt Versen Company*, Lanman & Kemp-Barclay & Co.*, and the Hackensack UMC at Pascack Valley* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate. These facilities meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk.

The Westwood Fire Department* is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Westwood Recreational Department Pre-School* is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. The school is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Rockland Coaches*, Zion Lutheran Church*, and Care One at Valley* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Westwood Regional Middle School*, Berkeley School* and Brookside School* are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. They are located in a floodplain or flood prone area but have no prior history of flood damage. These facilities are served by a

water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Westwood DPW* is located in a floodplain or flood prone area that has experienced some limited flood damage in the past. These facilities are served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Westwood Municipal Complex* is served by a water supply that is likely to fail under severe drought conditions.

Woodcliff Lake Borough

The Borough of Woodcliff Lake has identified four critical facilities, including one new facility for this Plan update.

The DPW Garage and Recycling Center is not vulnerable to any natural hazards.

The Borough Complex/Police and Fire Department are vulnerable to high winds, due to wall opening size or lack of protection, roof configuration and or several nearby trees, and essential external equipment is vulnerable. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Woodcliff Lake Reservoir Dam is located in a floodplain or flood prone area and has experienced limited flood damage in the past. The dam is on a sloping/waterside site with moderate vulnerability to landslide or erosion, and/or it is near but not in an avalanche runout zone.

The Tice Senior Center and Emergency Operations Center* is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Wood-Ridge Borough

The Borough of Wood-Ridge has identified nine critical facilities.

The Pump Stations at 10th Street and Arnot Place have been updated to reflect a decrease in vulnerability to flooding. These facilities are located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes.

The Pump Station at Anderson Avenue has been updated to reflect an increase in vulnerability to storm surge. This facility is located in a floodplain or flood prone area that has experienced some limited flood damage in the past. This pump station is located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. The facility is located in a category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or has experienced prior surge/tsunami damage.

Assumption Church, Wood-Ridge Intermediate School (formerly the Assumption School), Catherine E. Doyle School and Wood-Ridge High School meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. These facilities are located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Wood-Ridge Borough Hall is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. This facility is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Wood-Ridge DPW meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. The facility is located in a floodplain or flood prone area that has experienced some limited flood damage in the past. This facility is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. The facility is located in a category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or has experienced prior surge/tsunami damage. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Wyckoff Township

The Township of Wyckoff has identified 15 critical facilities, including one new facility for this Plan update.

The Christian Health Center is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility meets the current code, and is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to 25-50% of the population in the vicinity of the School. Economic losses due to such a storm would be substantial.

The Coolidge School, Eisenhower School and Wyckoff Public Library are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are served by a water supply that is likely to fail under severe drought conditions. These facilities meet the current code, and are not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Lincoln School, Washington School and Wyckoff YMCA are served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Sicomac School is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Town Hall/Police Department/ Communication Tower, Wyckoff Ambulance Corps Building, are slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. These facilities are located in an area considered as low earthquake risk or have been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

Wyckoff Fire Co. #1 and #2 are served by a water supply that is likely to fail under severe drought conditions. These facilities are located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of these facilities. Economic losses due to such a storm would be moderate.

The Wyckoff DPW Building is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is served by a water supply that is likely to fail under severe drought conditions. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

The Wyckoff Fire Co. #3 is slightly vulnerable to high winds due to wall opening size or lack of protection. In addition, high winds may cause window/door failure, and essential external equipment is likely to be damaged. This facility is served by a water supply that is likely to fail under severe drought conditions. This facility is located in an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes. Winter storms may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

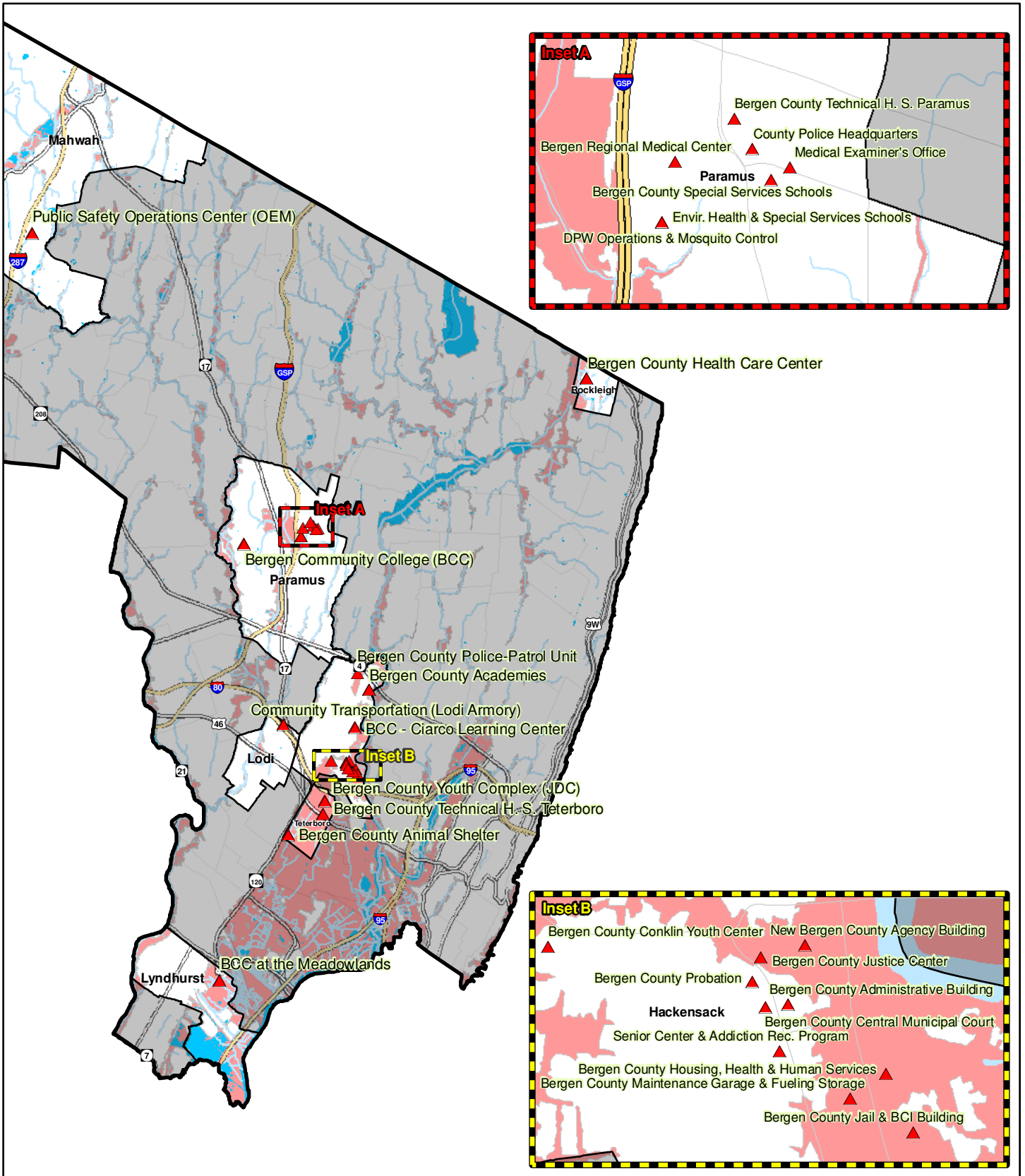
The Cellular Tower* is vulnerable to winter storms, which may pose a health/safety risk to up to 25% of the population in the vicinity of this facility. Economic losses due to such a storm would be moderate.

Rankings that pertain to municipal vulnerability data are detailed in **Appendix C**.

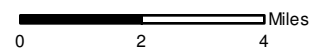
Appendix C: Bergen County Critical Facility Maps

Bergen County Critical Facilities

Bergen County, NJ



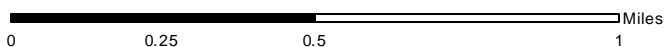
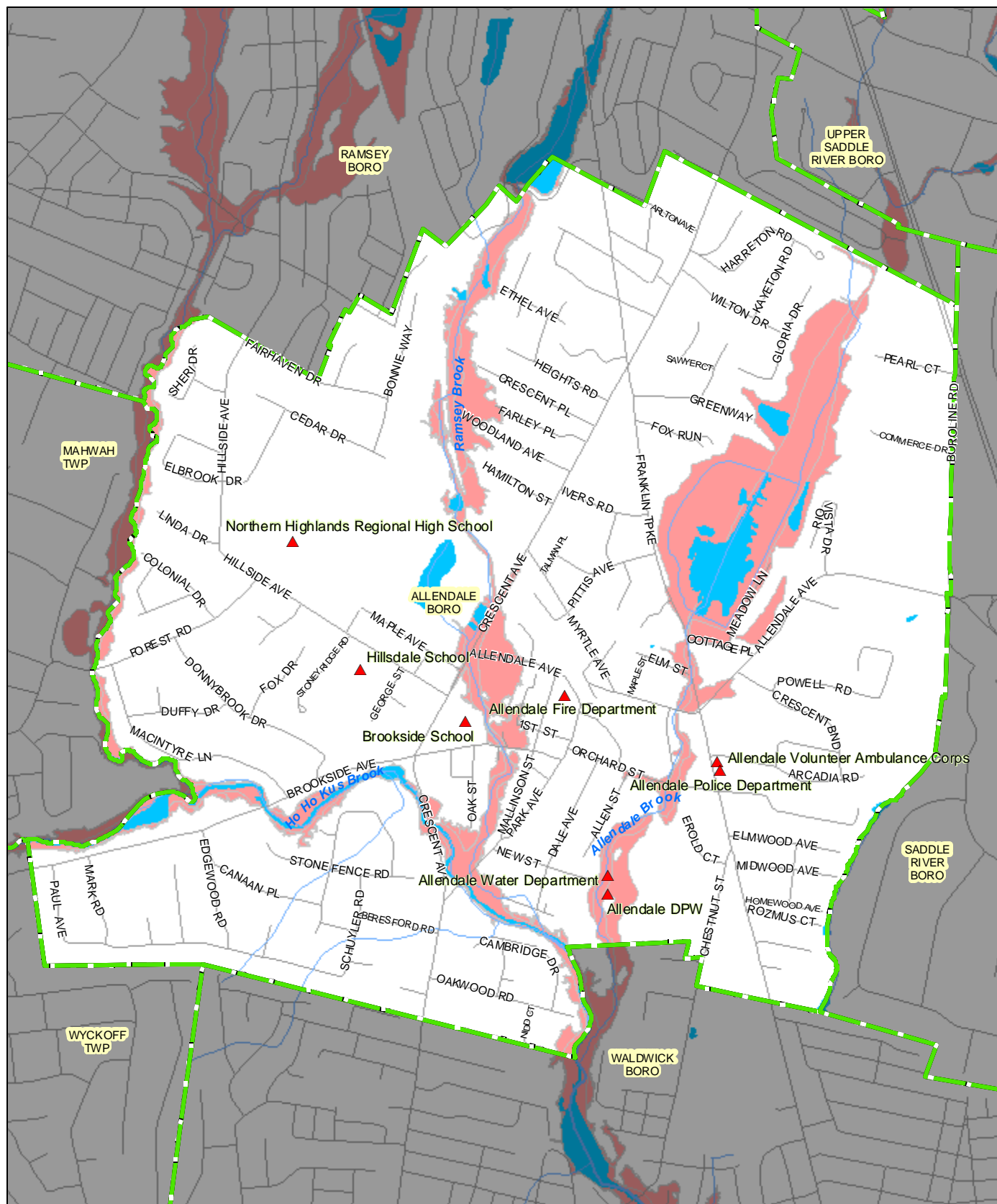
- ▲ Critical Facility
- Water Bodies
- Municipal Boundary



- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

This map was developed in part using NJ Dept. of Environmental Protection GIS digital data, but this secondary product has not been verified by NJDEP. For information on map content and accuracy, contact the NJMC-MERI GIS Department at merigis@njmeadowlands.gov or 201-460-4612.

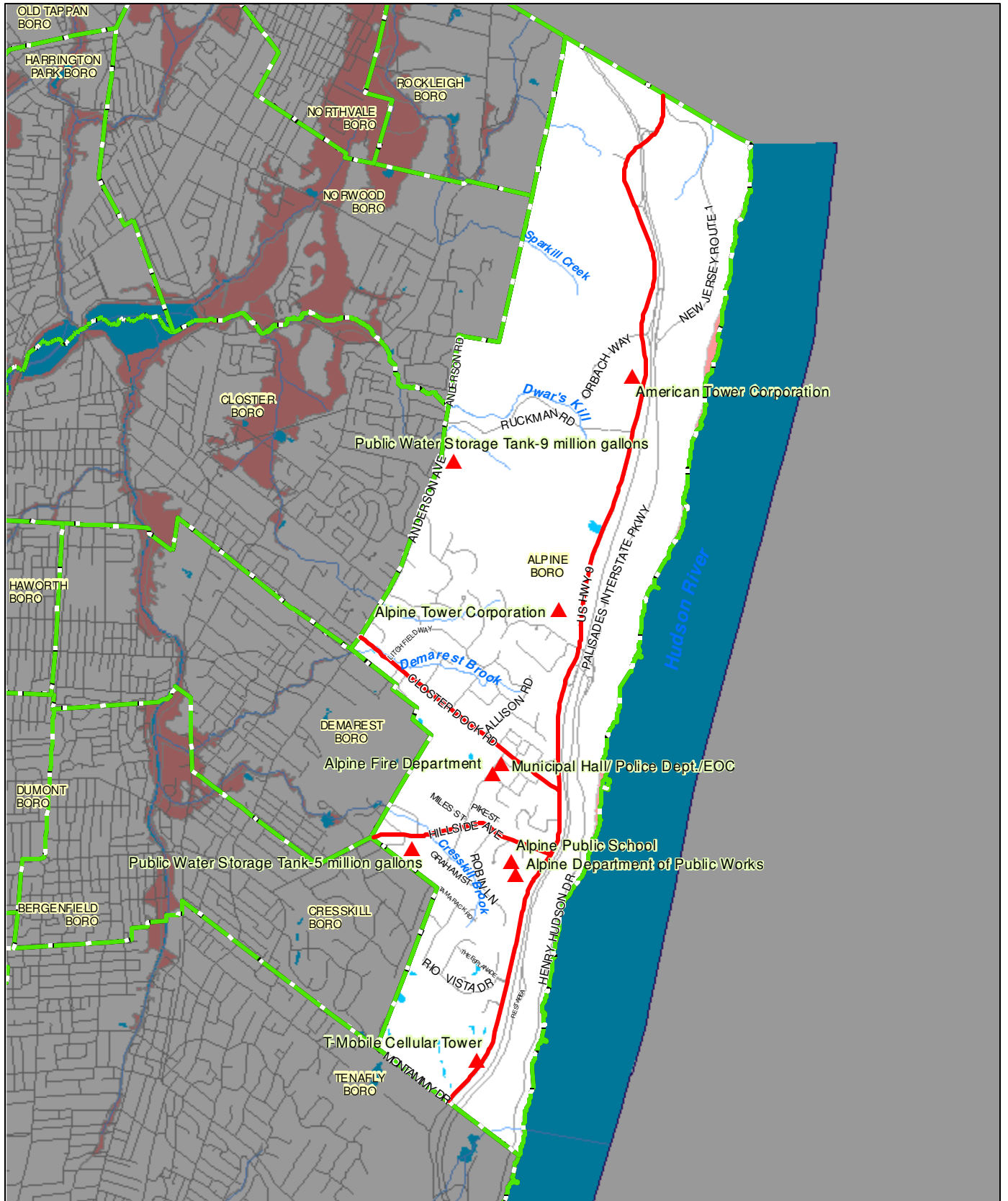
Allendale Borough Critical Facilities Bergen County, NJ



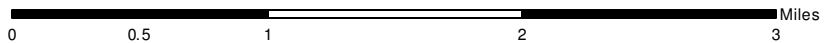
- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

This map was developed in part using NJ Dept. of Environmental Protection GIS digital data, but this secondary product has not been verified by NJDEP. For information on map content and accuracy, contact the NJMC-MERI GIS Department at merigis@njmeadowlands.gov or 201-460-4612.

Alpine Borough Critical Facilities Bergen County, NJ



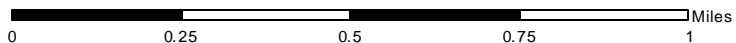
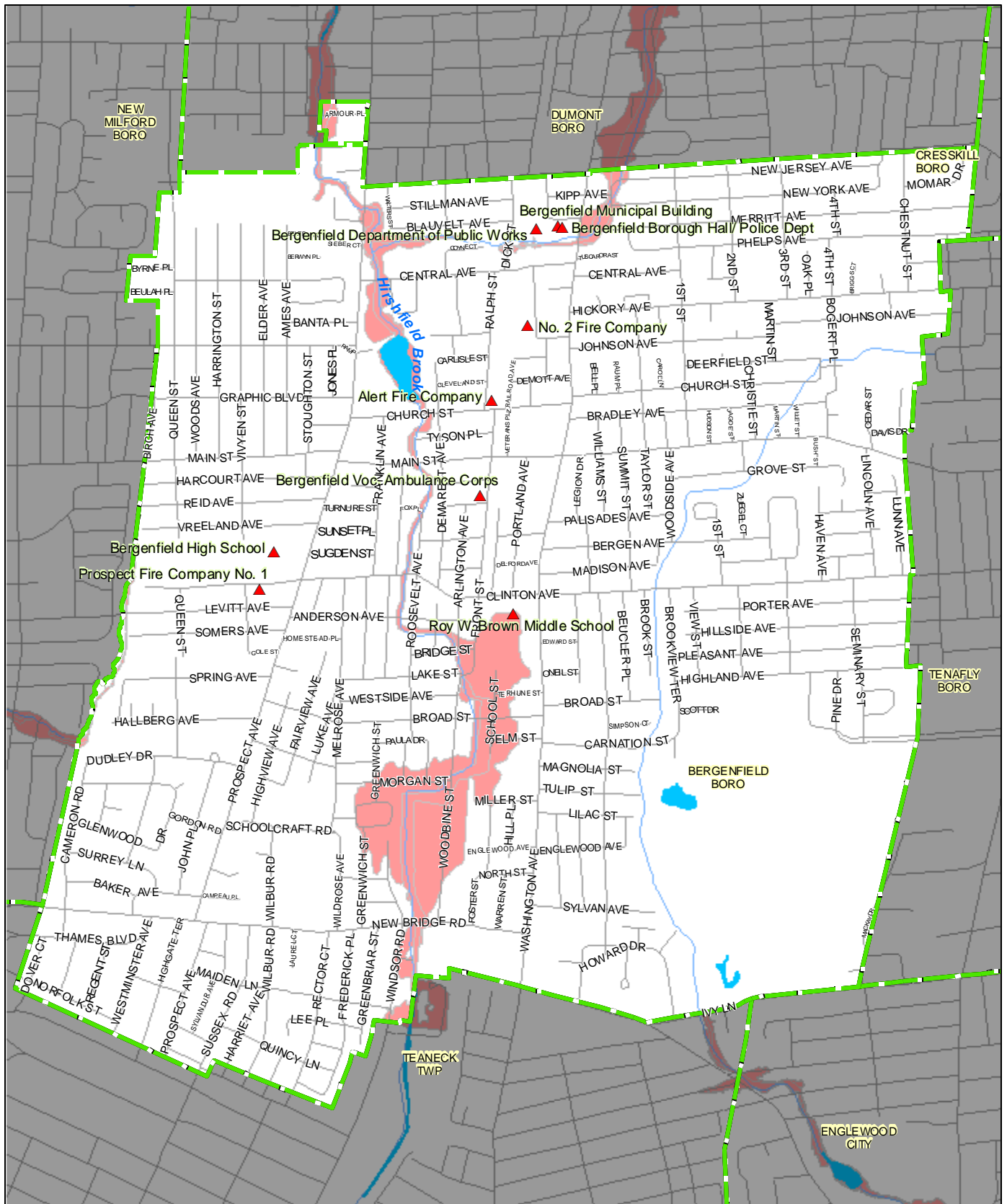
New Jersey Meadowlands Commission
 20170115/16/17 11:30 AM 14317 JTC



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Critical Feature
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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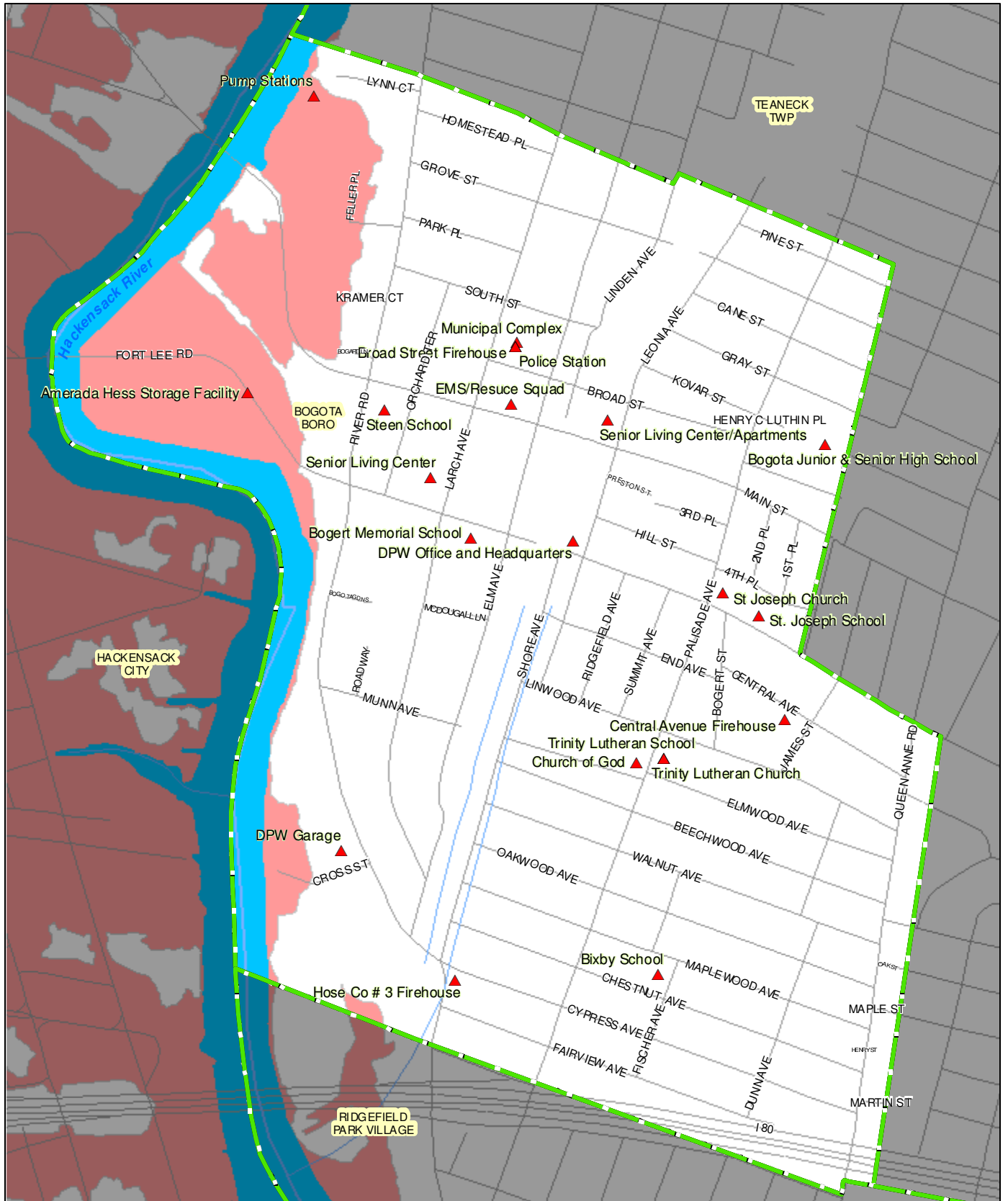
Bergenfield Borough Critical Facilities Bergen County, NJ



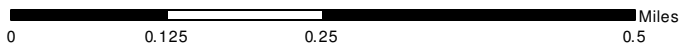
- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Bogota Borough Critical Facilities Bergen County, NJ



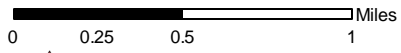
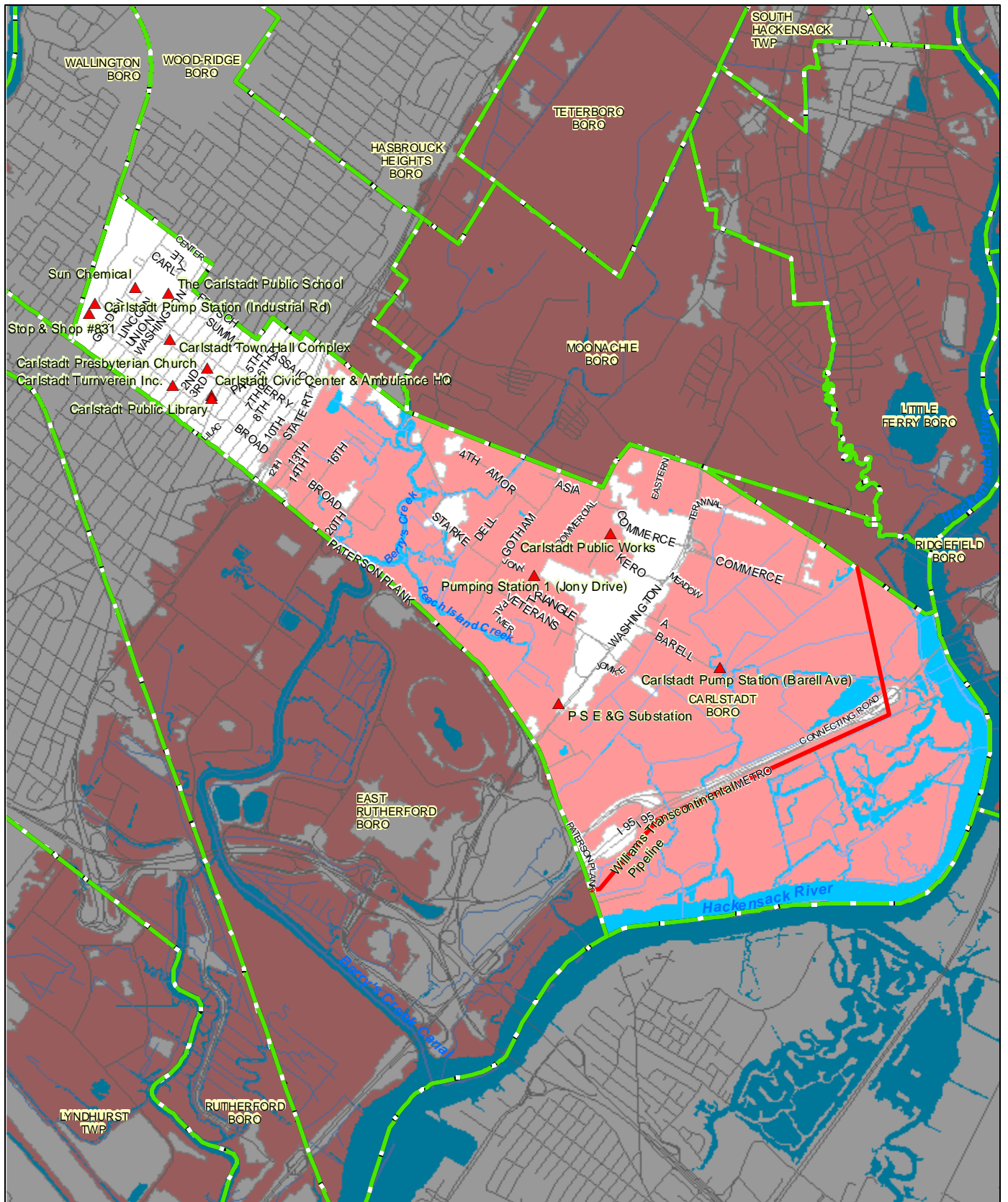
New Jersey Meadowlands Commission
ENVIRO 4 NE SPAL 55 SCARCH 14 511 JTC



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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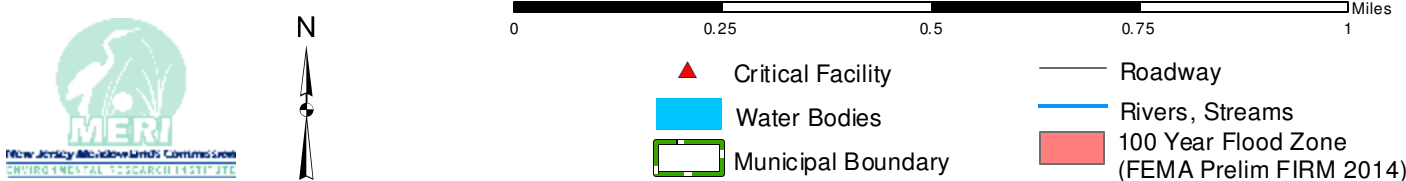
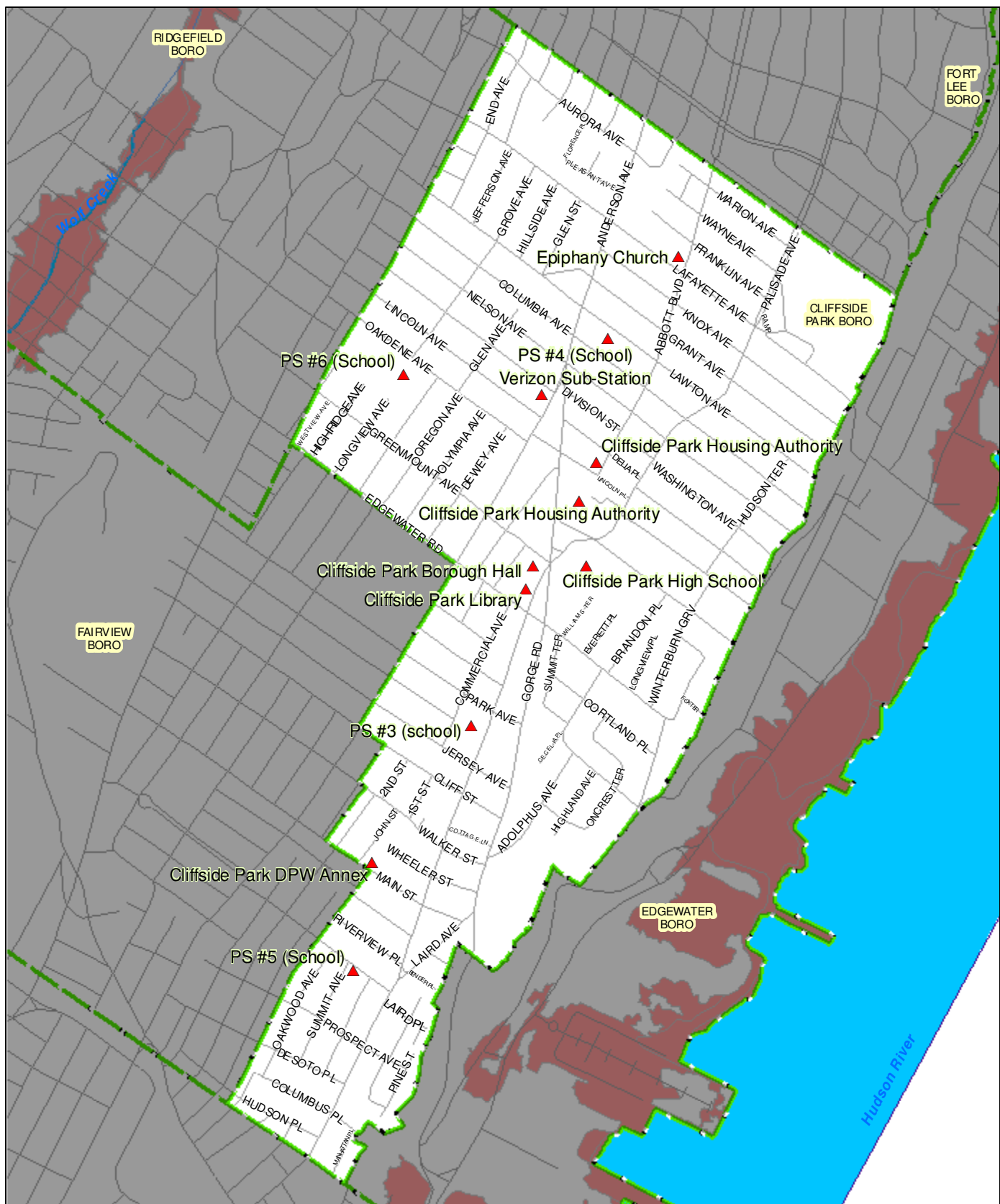
Carlstadt Borough Critical Facilities Bergen County, NJ



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

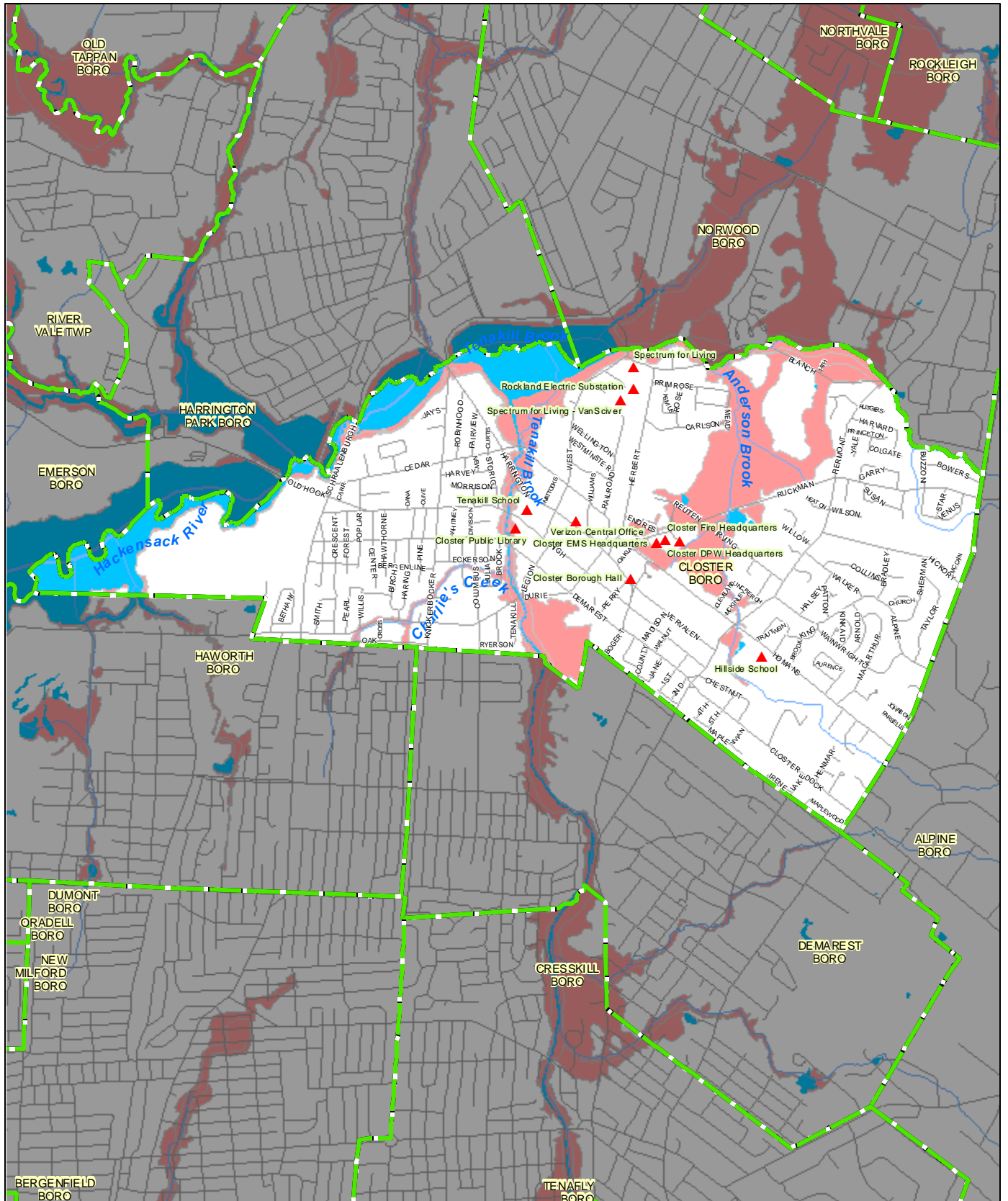
This map was developed in part using NJ Dept. of Environmental Protection GIS digital data, but this secondary product has not been verified by NJDEP. For information on map content and accuracy, contact the NJMC-MERI GIS Department at merigis@njmeadowlands.gov or 201-460-4612.


Cliffside Park Borough Critical Facilities Bergen County, NJ




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Closter Borough Critical Facilities Bergen County, NJ

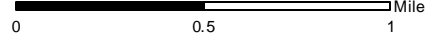




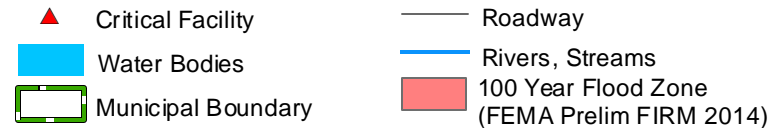
MERI
New Jersey Meadowlands Commission
CHS1904-4651-01-003-C03-SEARCH 142317 JTC



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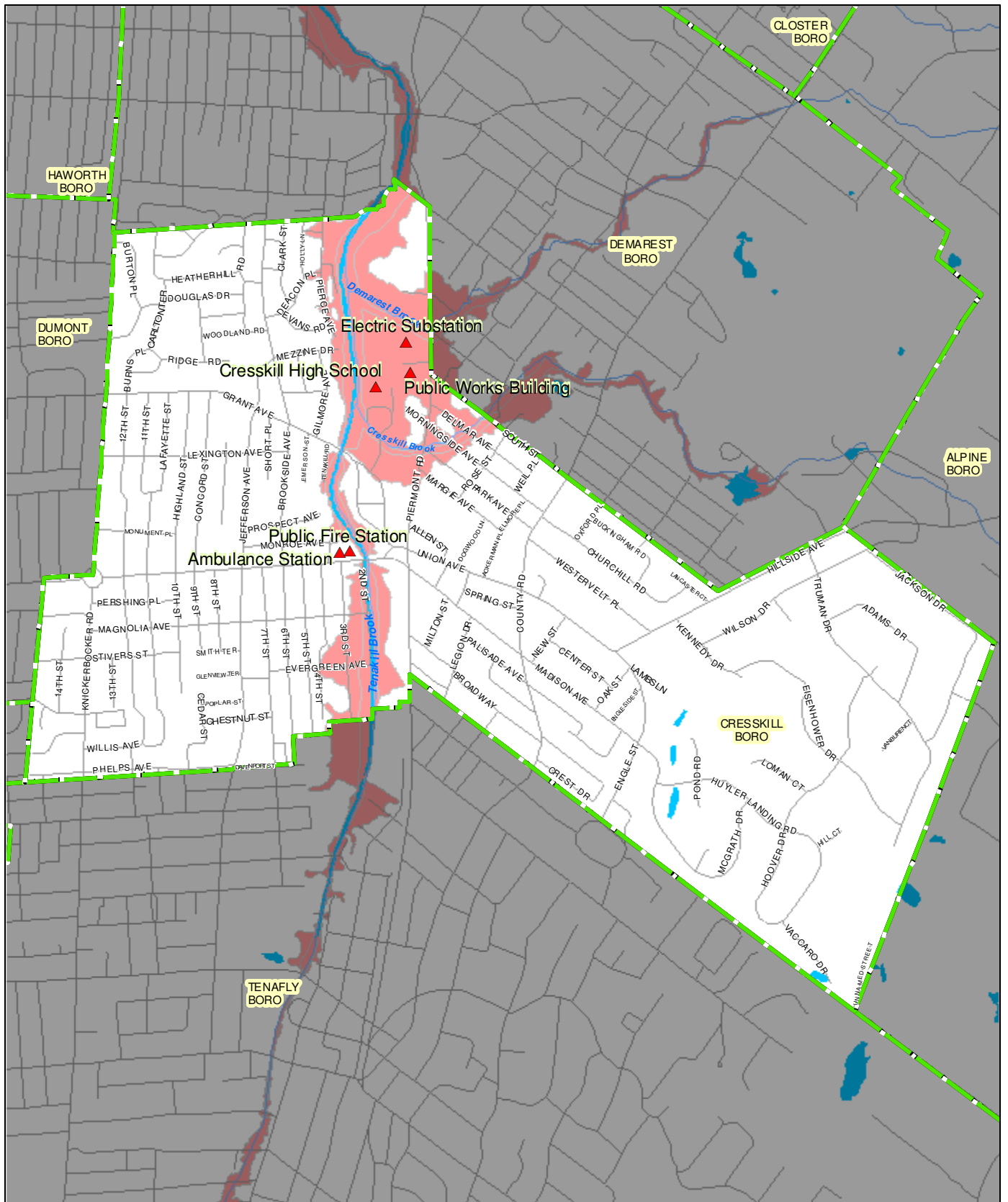
0 0.5 1 Miles



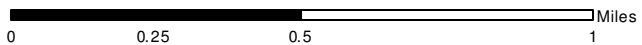
- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Cresskill Borough Critical Facilities Bergen County, NJ



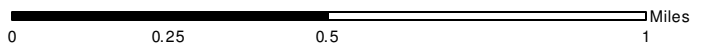
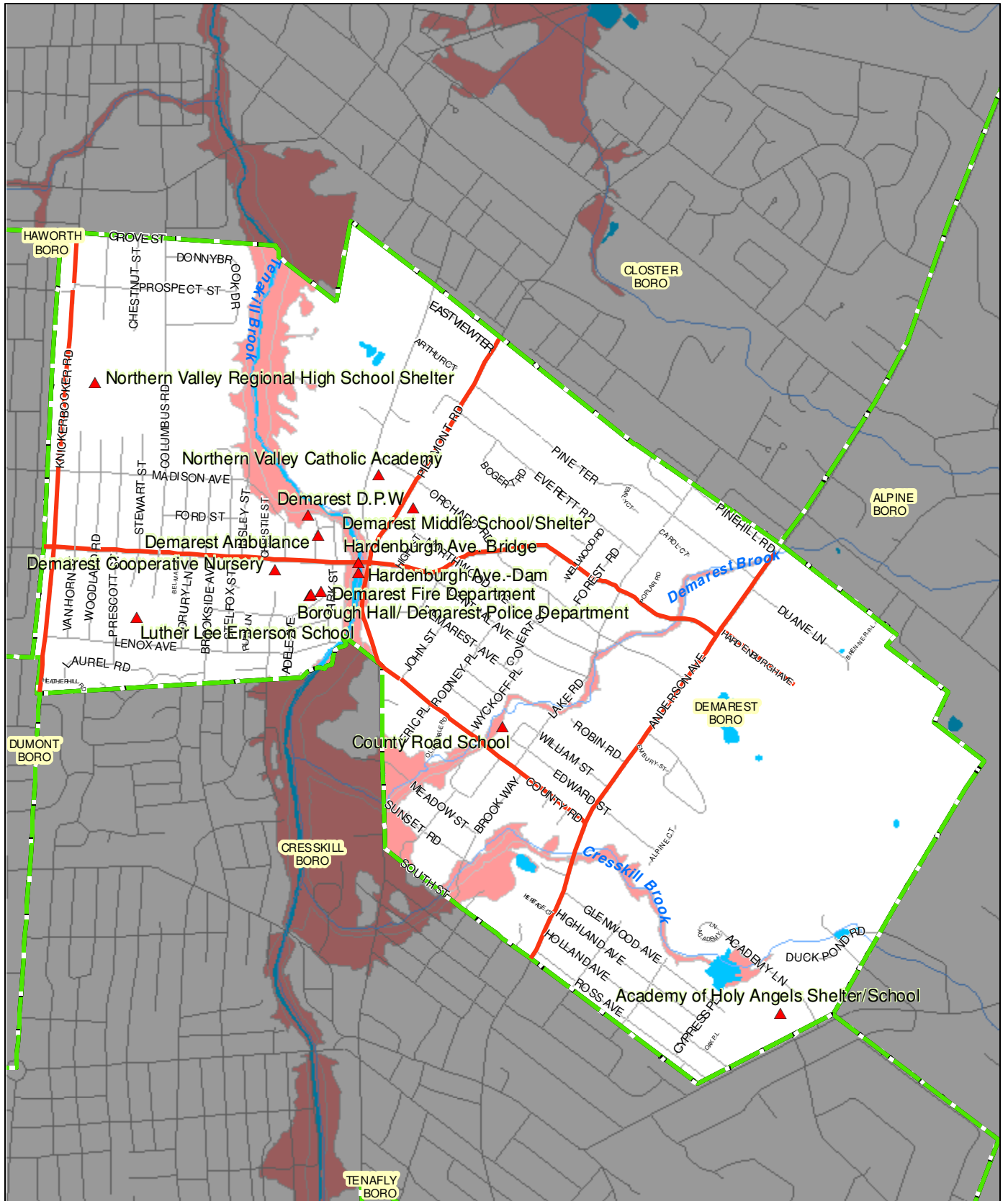
New Jersey Meadowlands Commission
ENVIRONMENTAL SCIENCE CENTER 1451P JTC



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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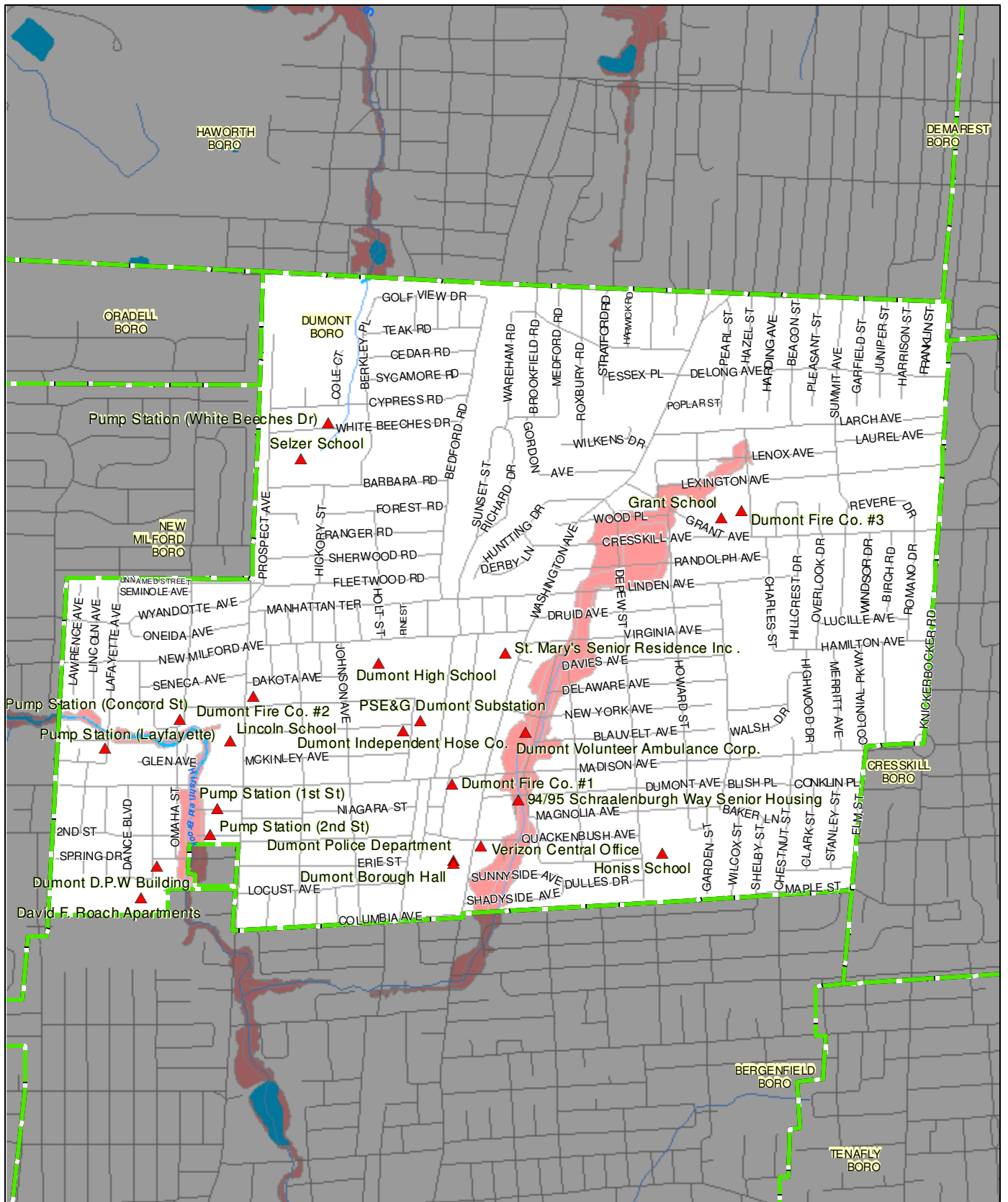
Demarest Borough Critical Facilities Bergen County, NJ



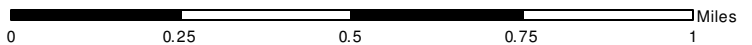
- | | |
|--------------------|---|
| Critical Facility | Roadway |
| Water Bodies | Rivers, Streams |
| Critical Feature | 100 Year Flood Zone (FEMA Prelim FIRM 2014) |
| Municipal Boundary | |

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Dumont Borough Critical Facilities Bergen County, NJ



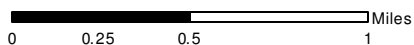
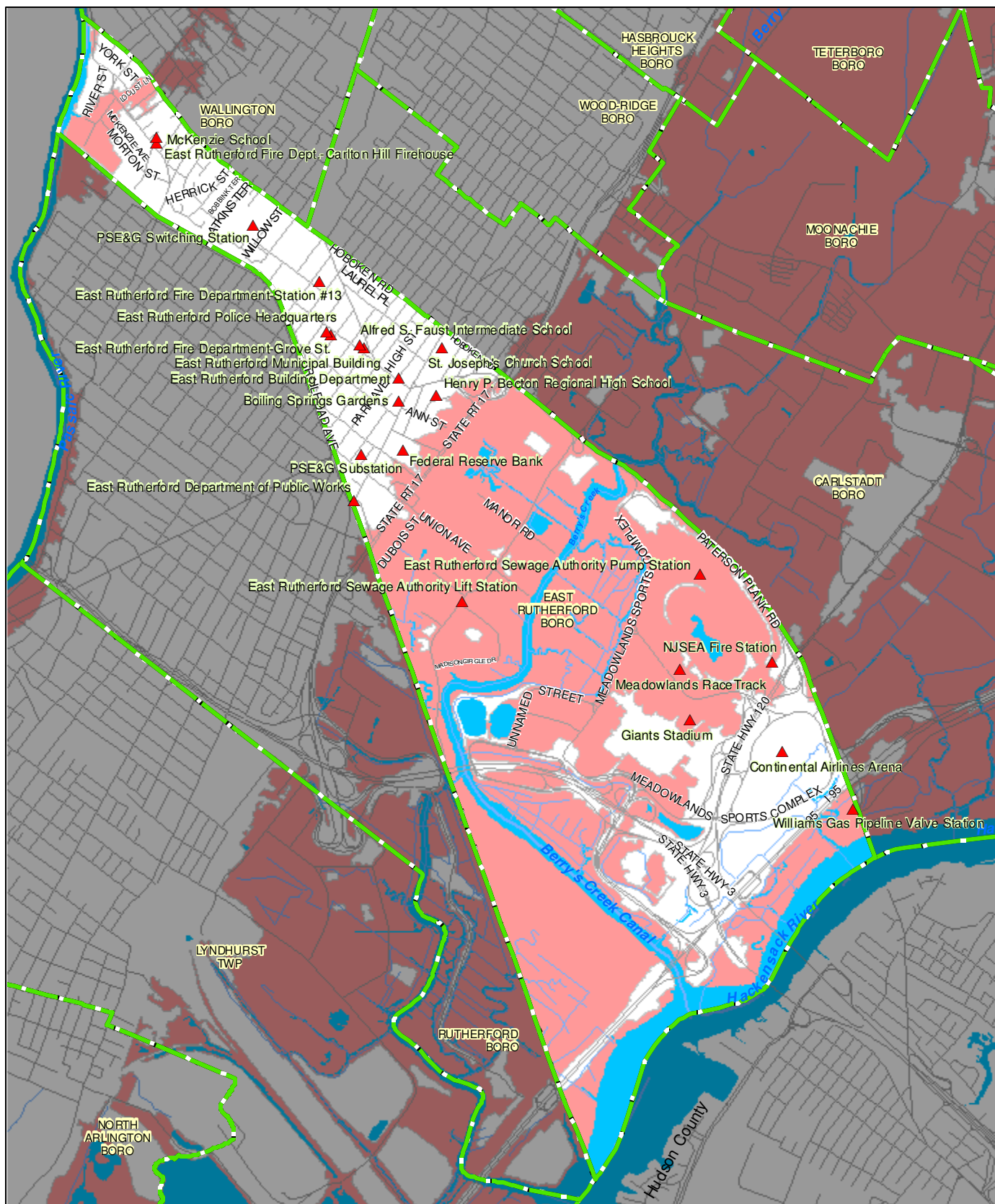
New Jersey Meadowlands Commission
CHIRIKINGWA WISPOGONNISTWIC



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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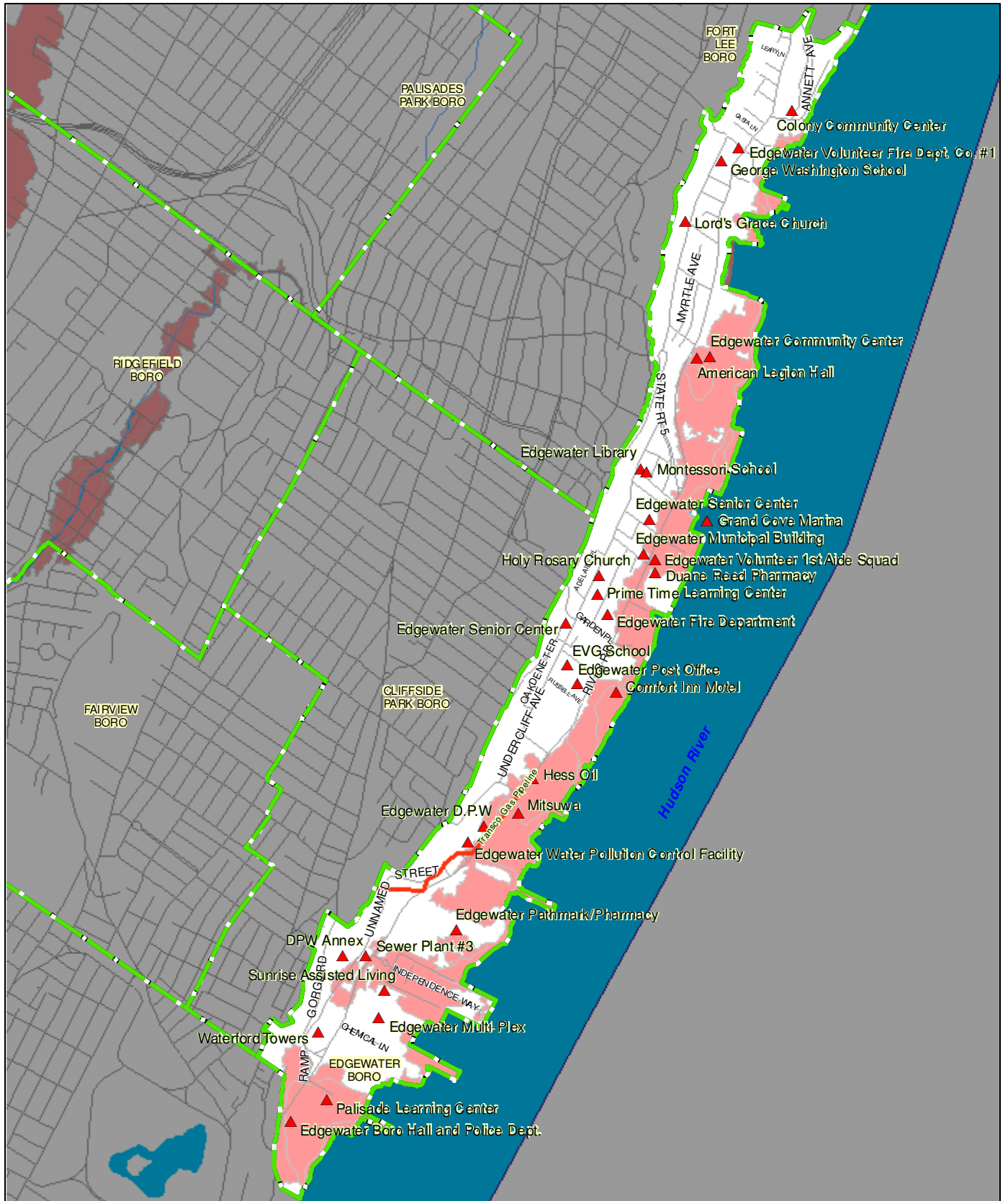
East Rutherford Borough Critical Facilities Bergen County, NJ



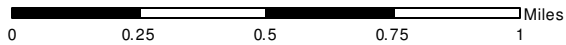
- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Edgewater Borough Critical Facilities Bergen County, NJ



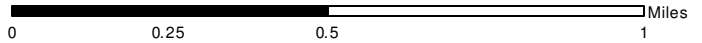
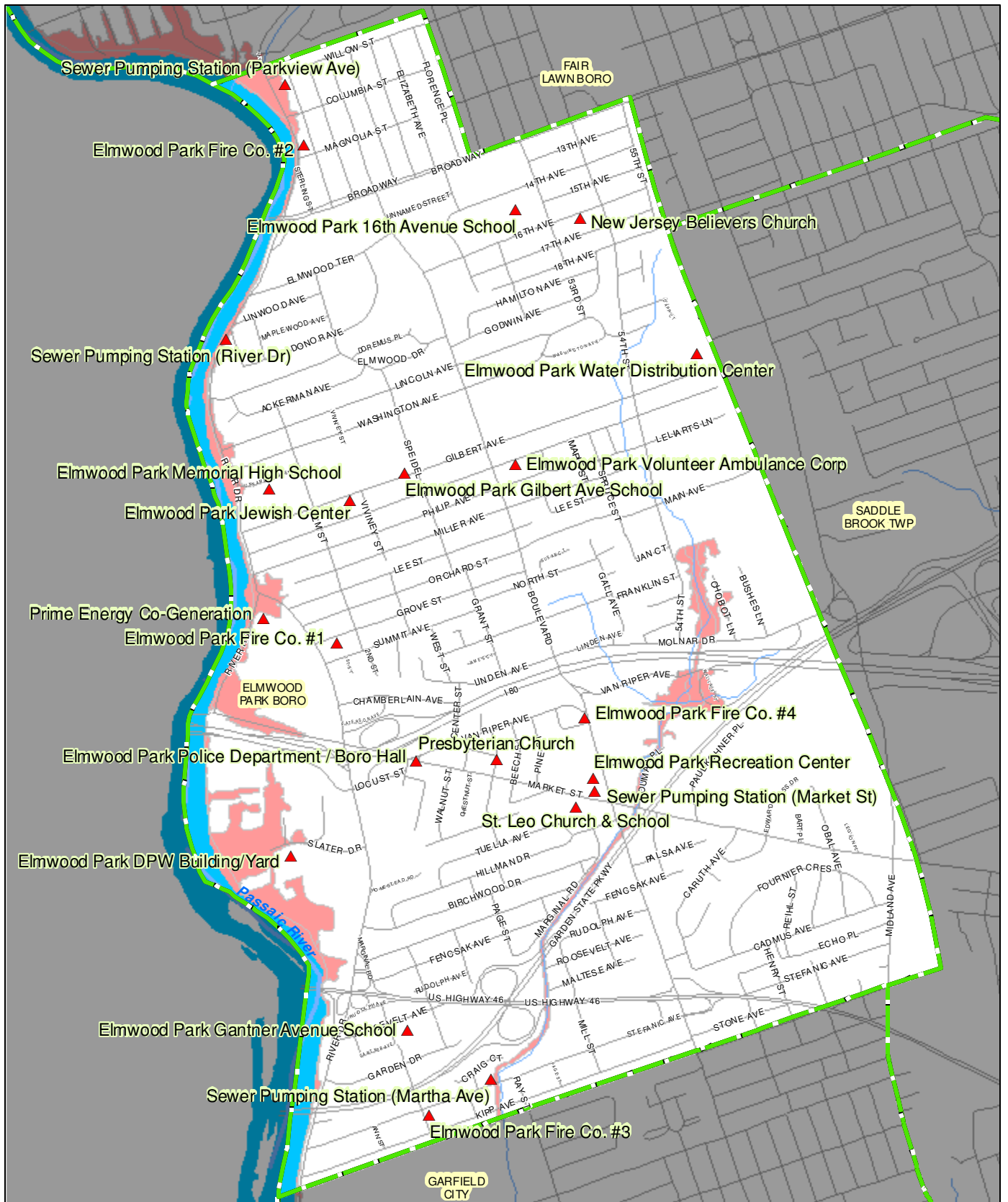
New Jersey Meadowlands Commission
ENVIRONMENTAL RESEARCH INSTITUTE



- ▲ Critical Facility
- Water Bodies
- Critical Feature
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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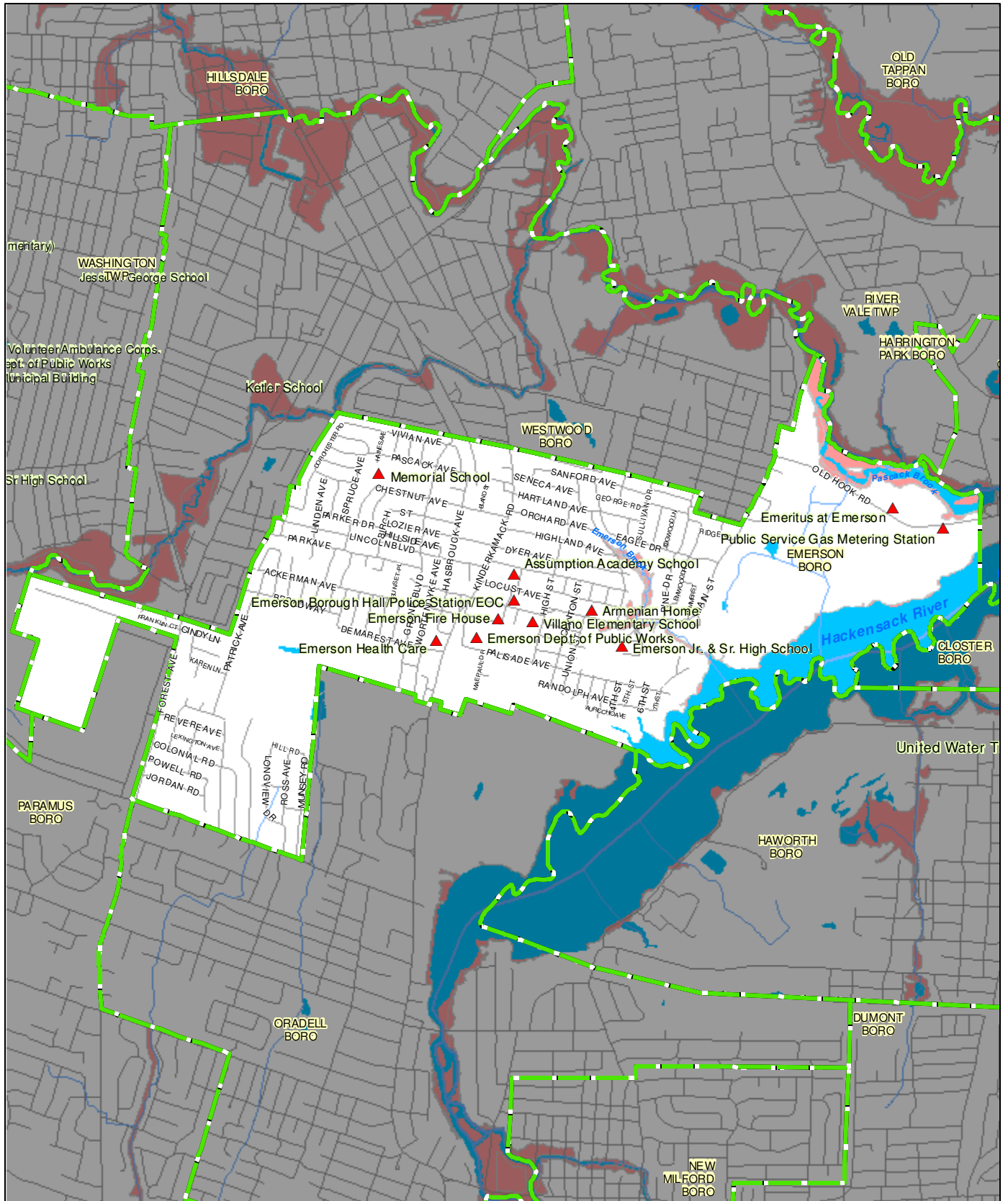
Elmwood Park Borough Critical Facilities Bergen County, NJ



- ▲ Critical Facility
- Roadway
- Water Bodies
- Rivers, Streams
- Municipal Boundary
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Emerson Borough Critical Facilities Bergen County, NJ



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 ENVIRONMENTAL RESEARCH DIVISION

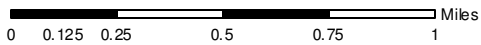
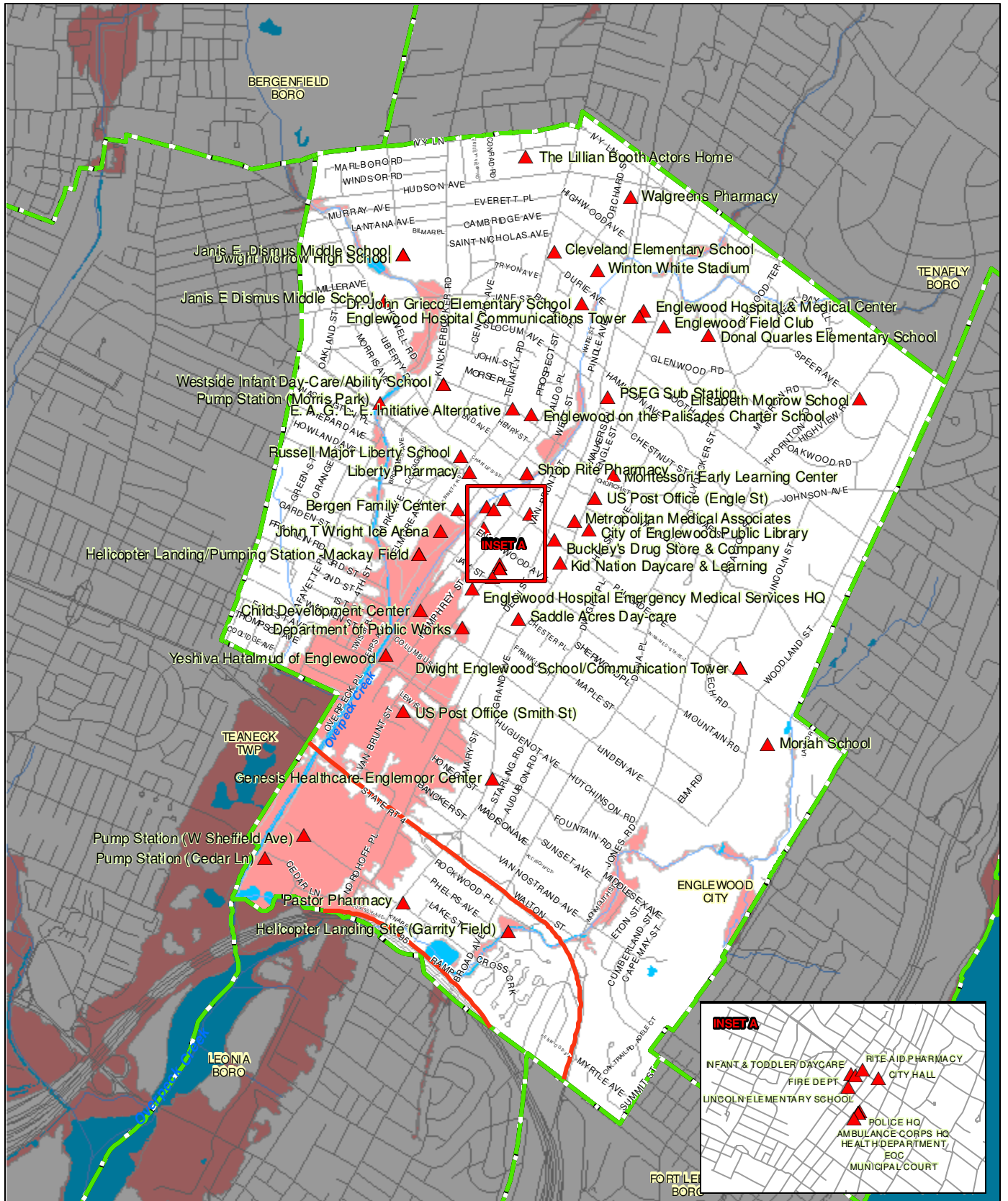


0 0.25 0.5 0.75 1 Miles

- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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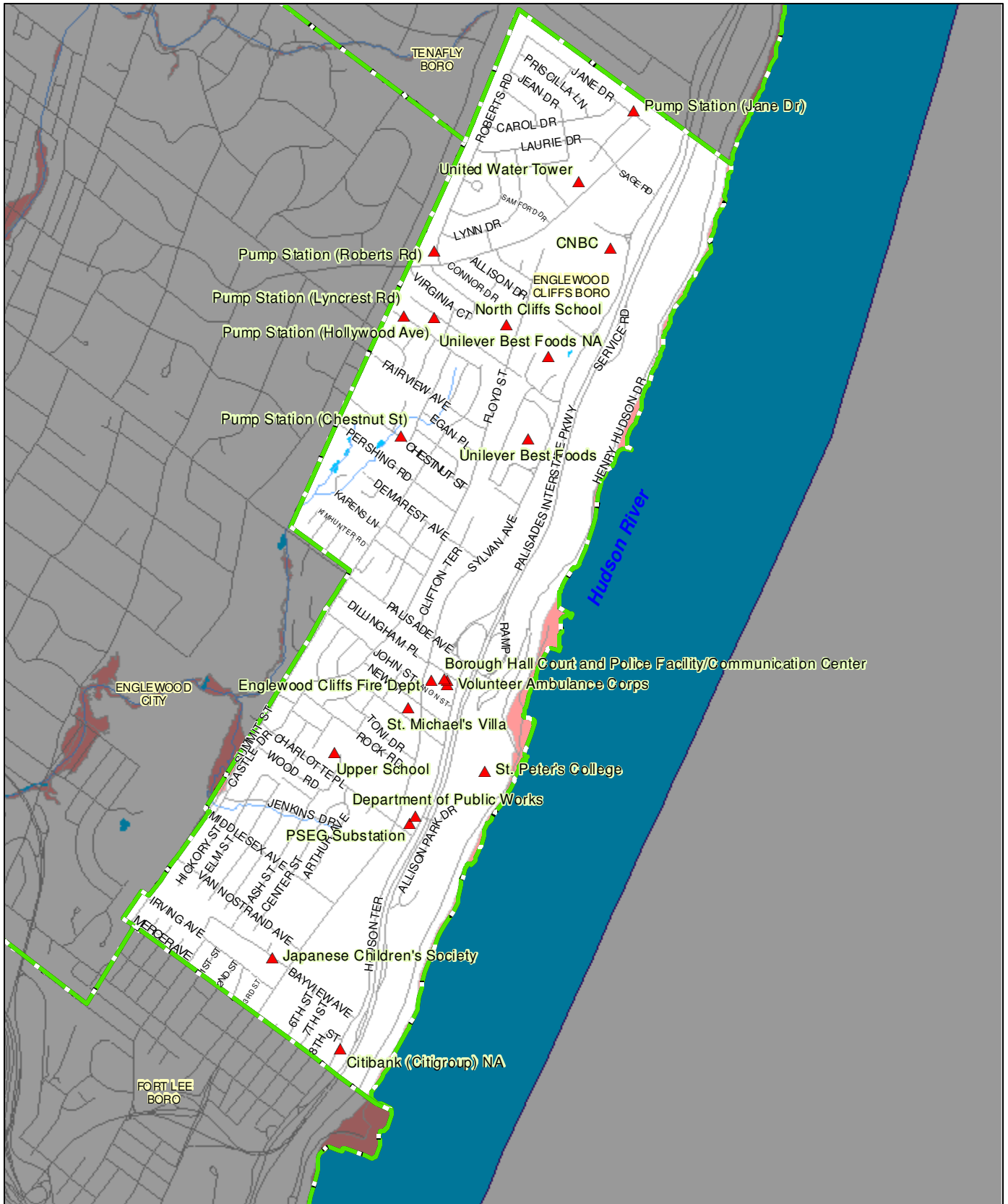
Englewood City Critical Facilities Bergen County, NJ



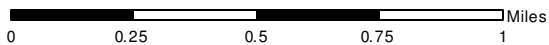
- | | |
|--------------------|---|
| Critical Facility | Roadway |
| Water Bodies | Rivers, Streams |
| Critical Feature | 100 Year Flood Zone (FEMA Prelim FIRM 2014) |
| Municipal Boundary | |

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Englewood Cliffs Borough Critical Facilities Bergen County, NJ



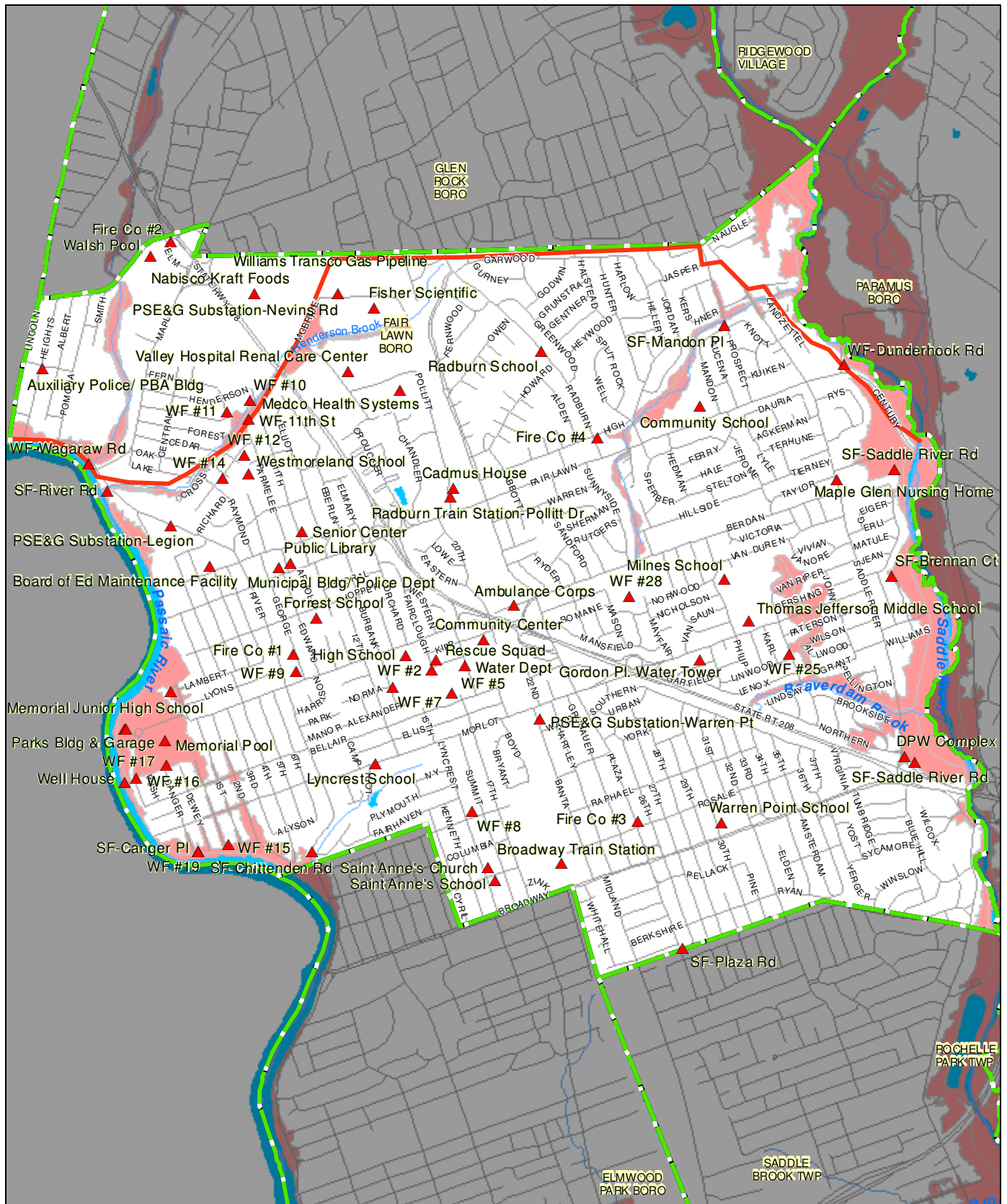
New Jersey Meadowlands Commission
 CIVIL ENGINEERING & SURVEYING




- ▲ Critical Facility
- Water Bodies
- Roadway
- Rivers, Streams
- Municipal Boundary
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Fair Lawn Borough Critical Facilities Bergen County, NJ

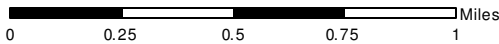




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ENVIRONMENTAL SCIENCE CENTER II 1451P JTC

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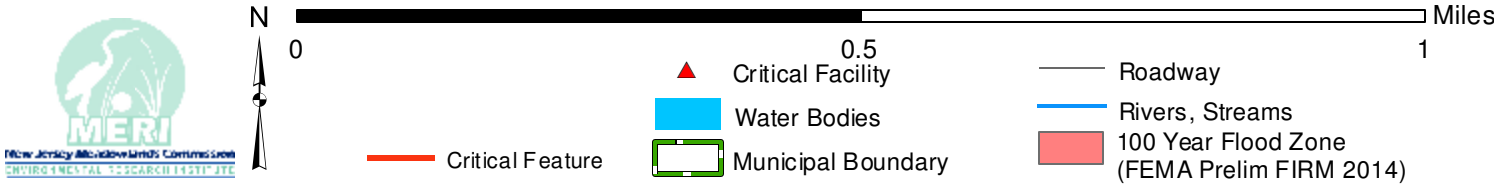
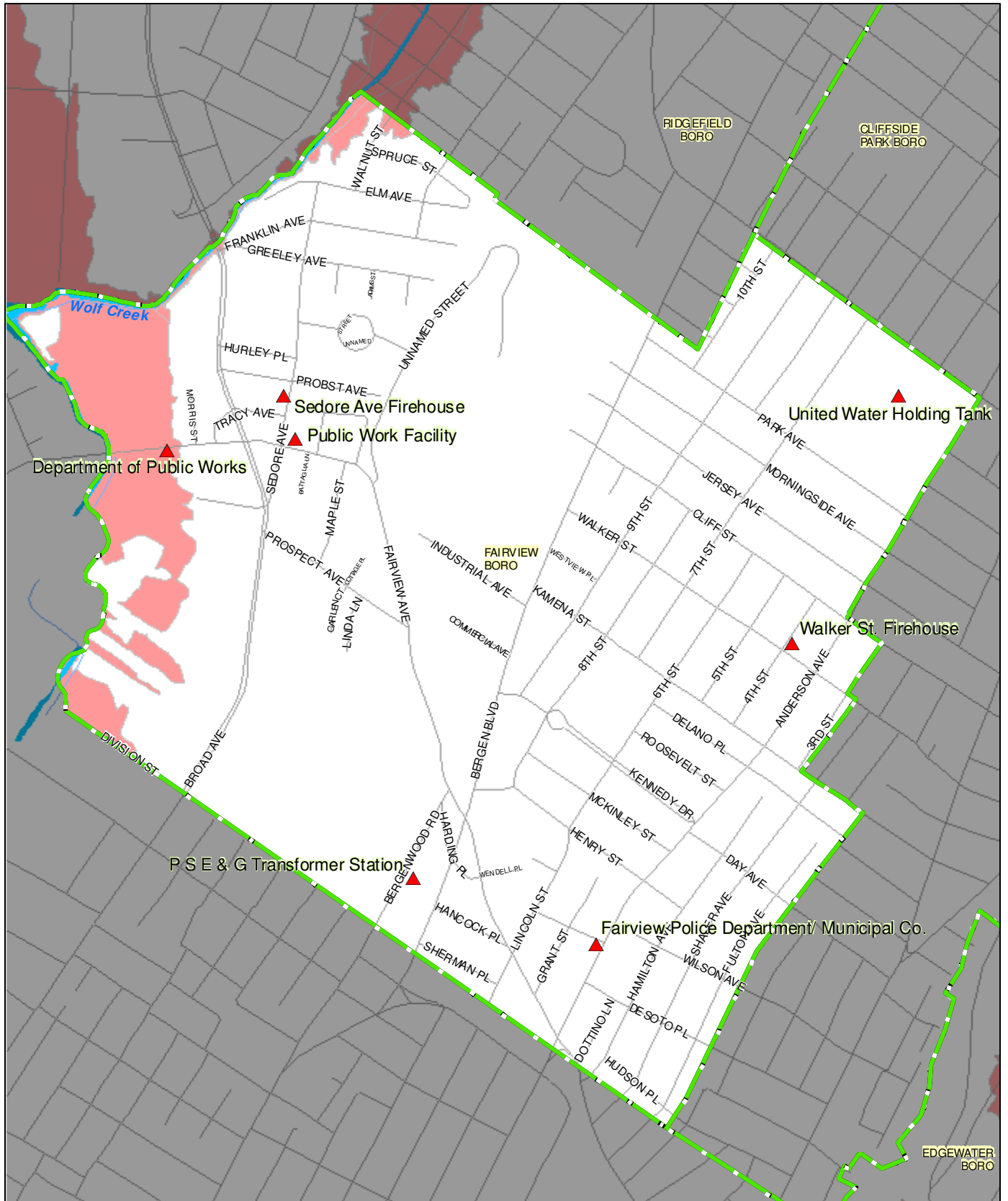


0 0.25 0.5 0.75 1 Miles

* SF = Sewer Facility	▲ Critical Facility	— Roadway
WF = Water Facility	■ Water Bodies	— Rivers, Streams
— Critical Feature	■ Municipal Boundary	■ 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Fairview Borough Critical Facilities Bergen County, NJ



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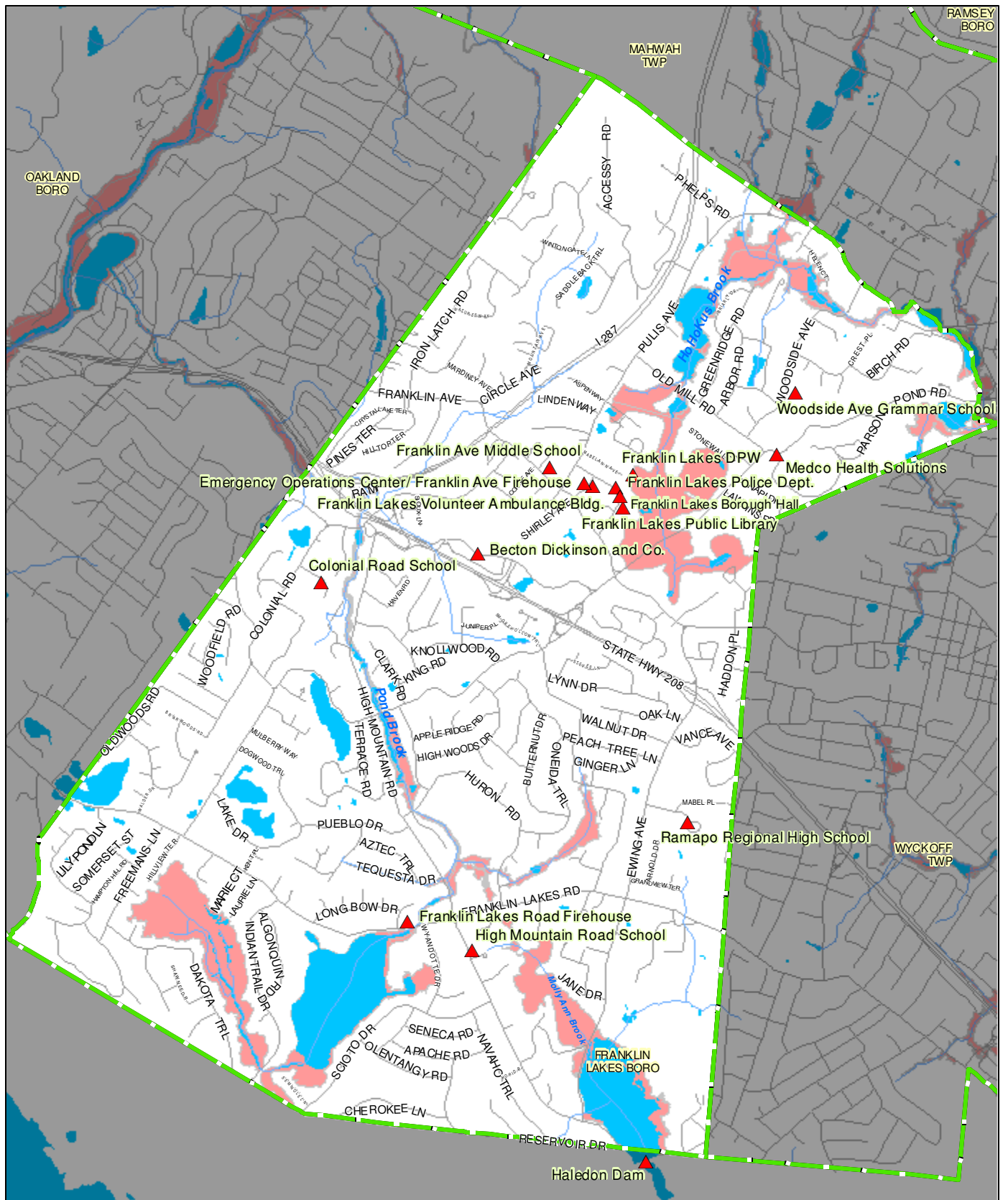
Fort Lee Borough Critical Facilities Bergen County, NJ



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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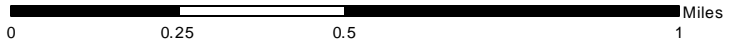
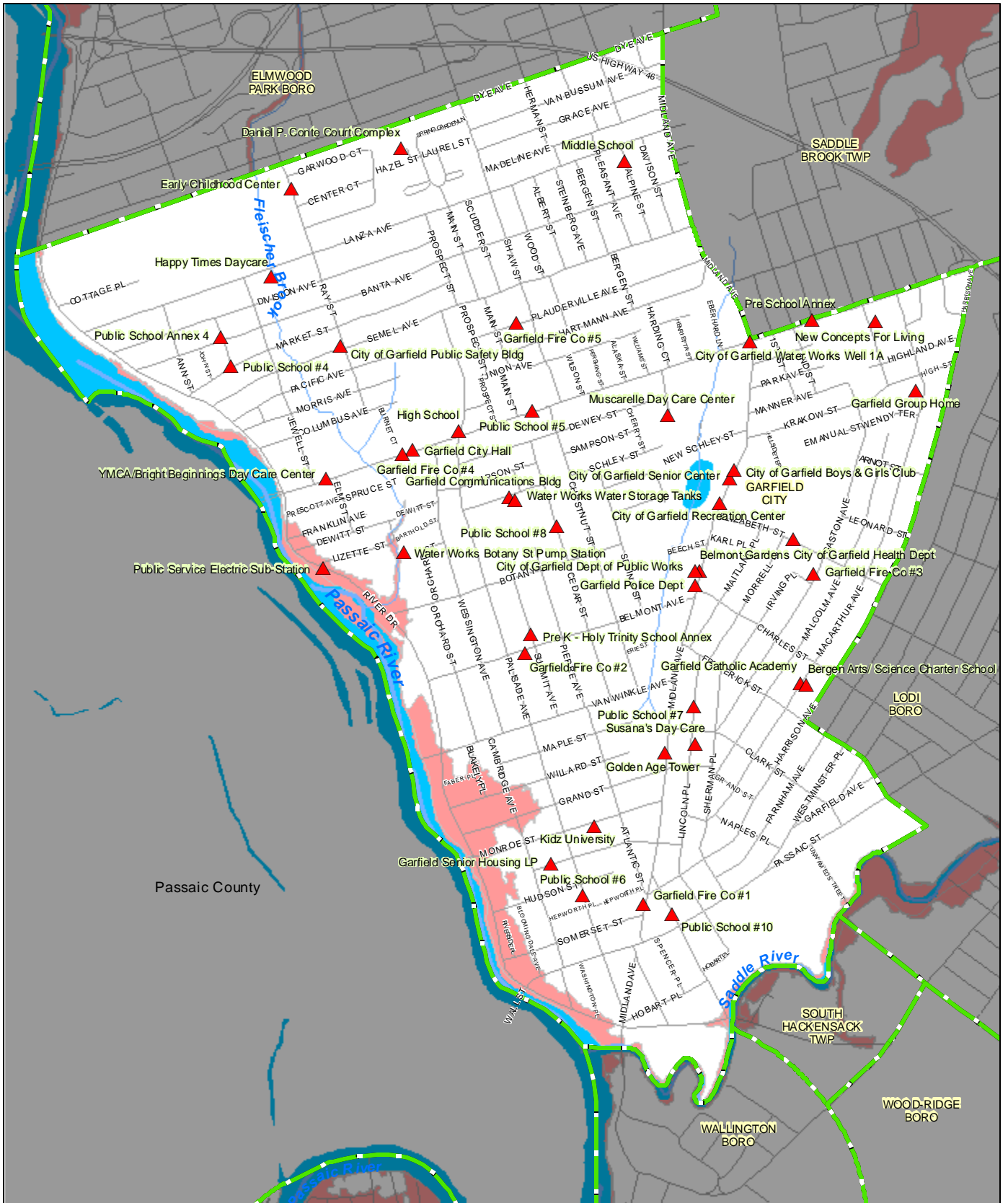
Franklin Lakes Township Critical Facilities Bergen County, NJ



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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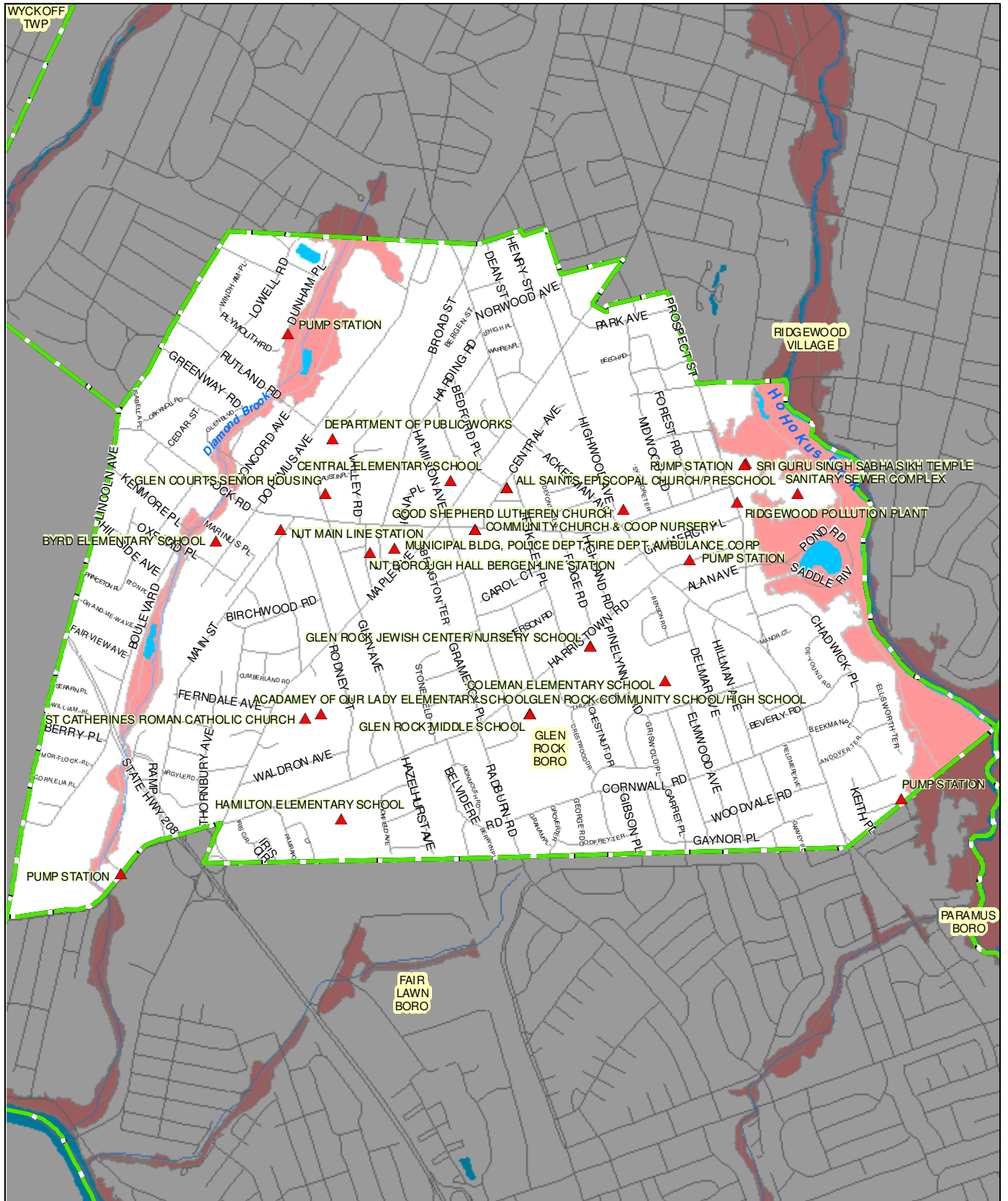
Garfield City Critical Facilities Bergen County, NJ





- ▲ Critical Facility
- Water Bodies
- Roadway
- Rivers, Streams
- Municipal Boundary
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)


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Glen Rock Borough Critical Facilities Bergen County, NJ














 Critical Facility

 Roadway

 Water Bodies

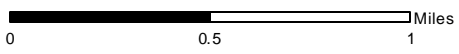
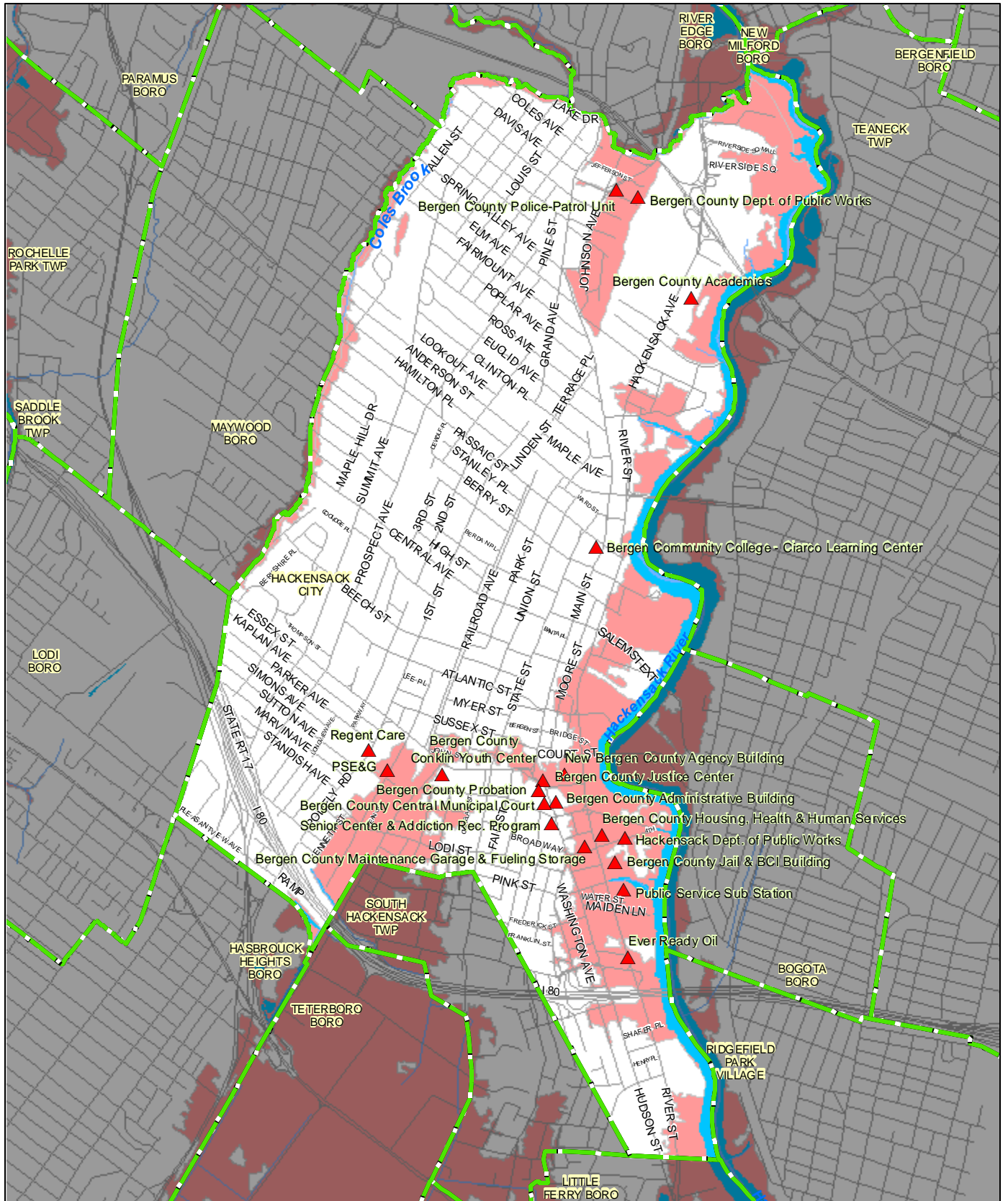
 Rivers, Streams

 Municipal Boundary

 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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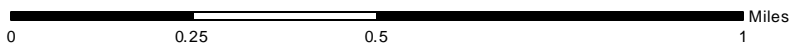
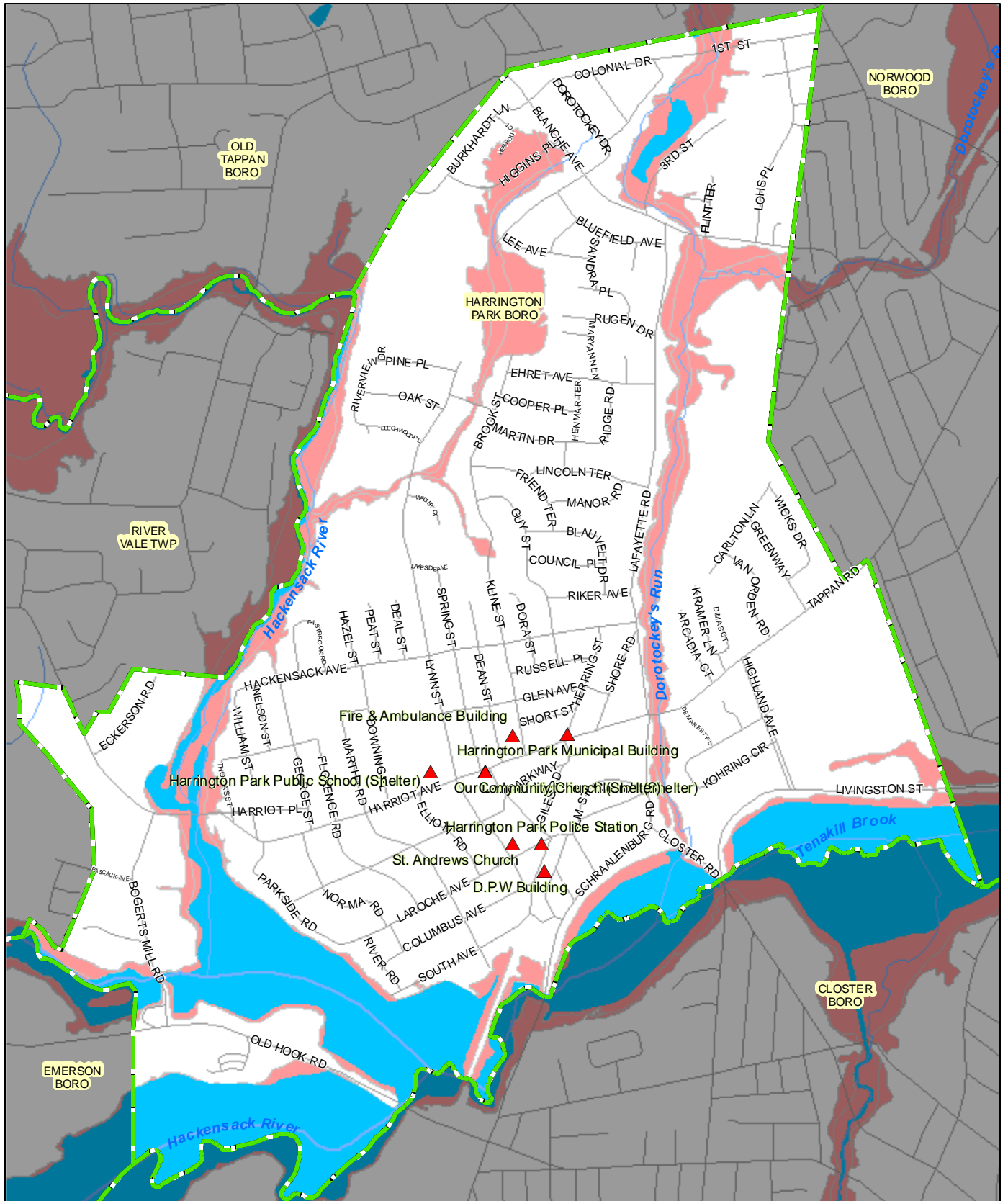
Hackensack City Critical Facilities Bergen County, NJ



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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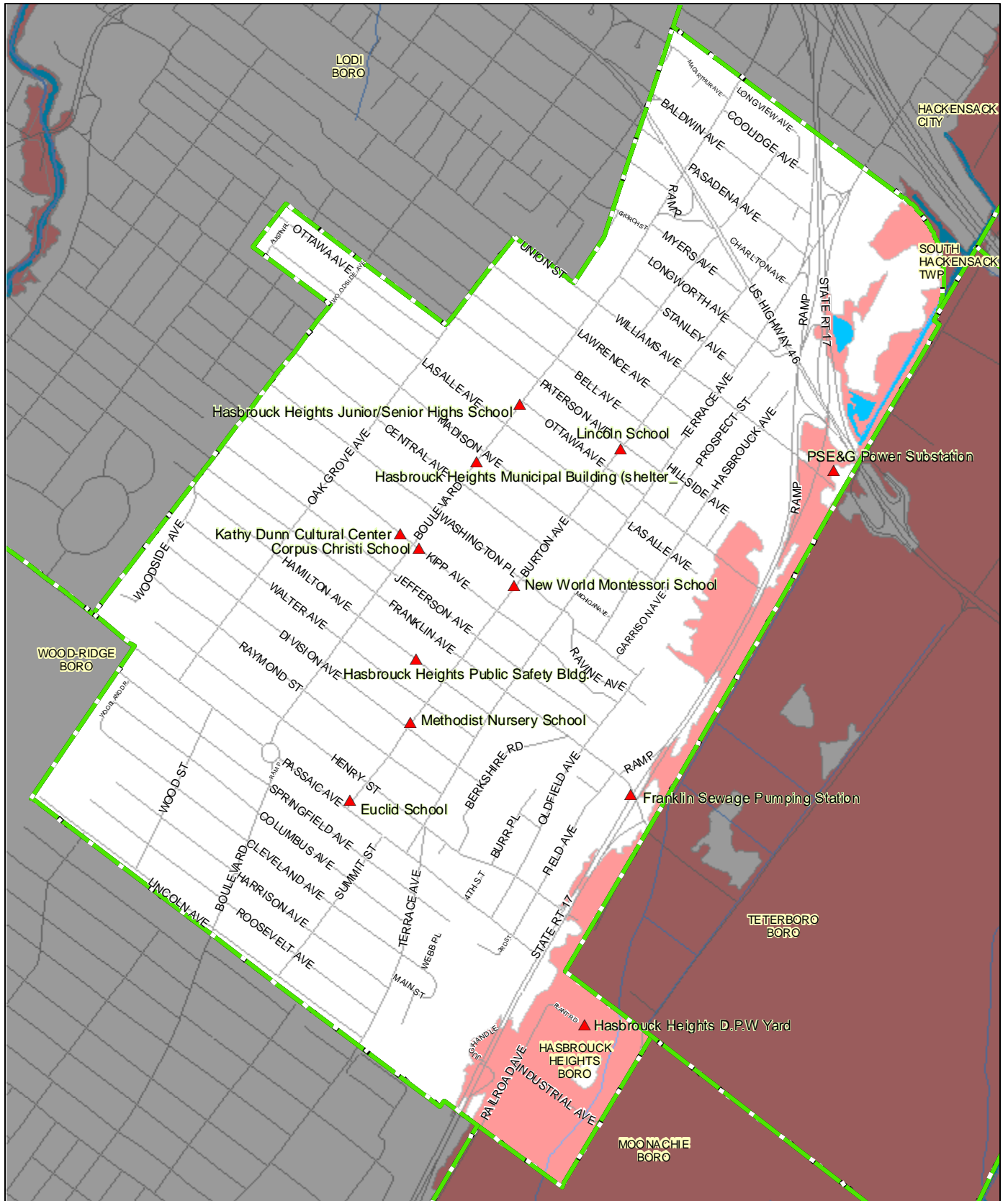
Harrington Park Borough Critical Facilities Bergen County, NJ



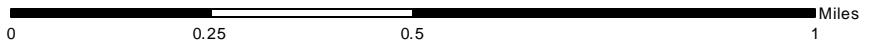
- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Hasbrouck Heights Borough Critical Facilities Bergen County, NJ



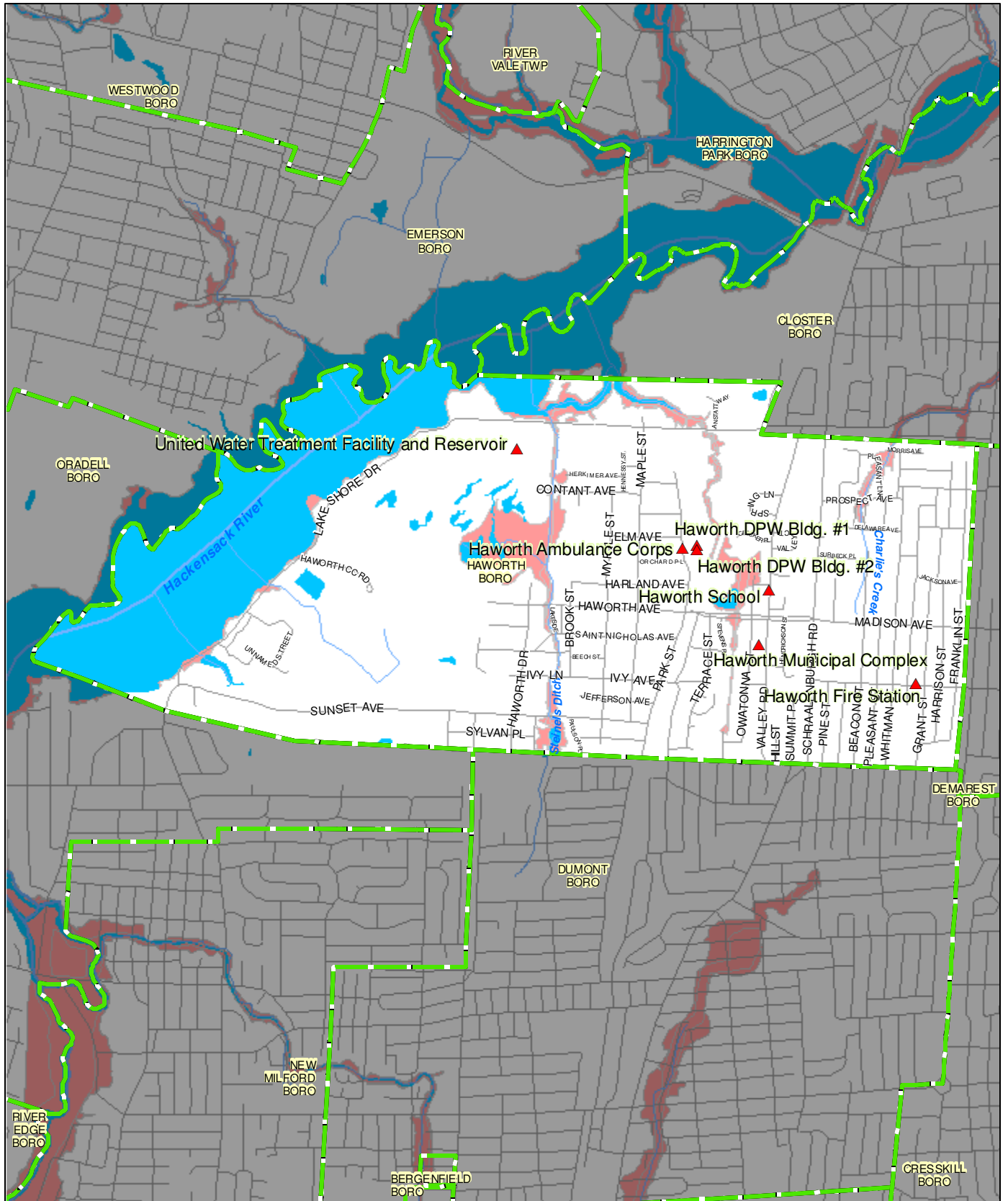
New Jersey Meadowlands Commission
ENVIRO14ENP14122CAR0111211P11C



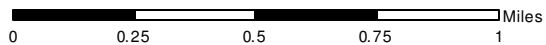
- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Haworth Borough Critical Facilities Bergen County, NJ



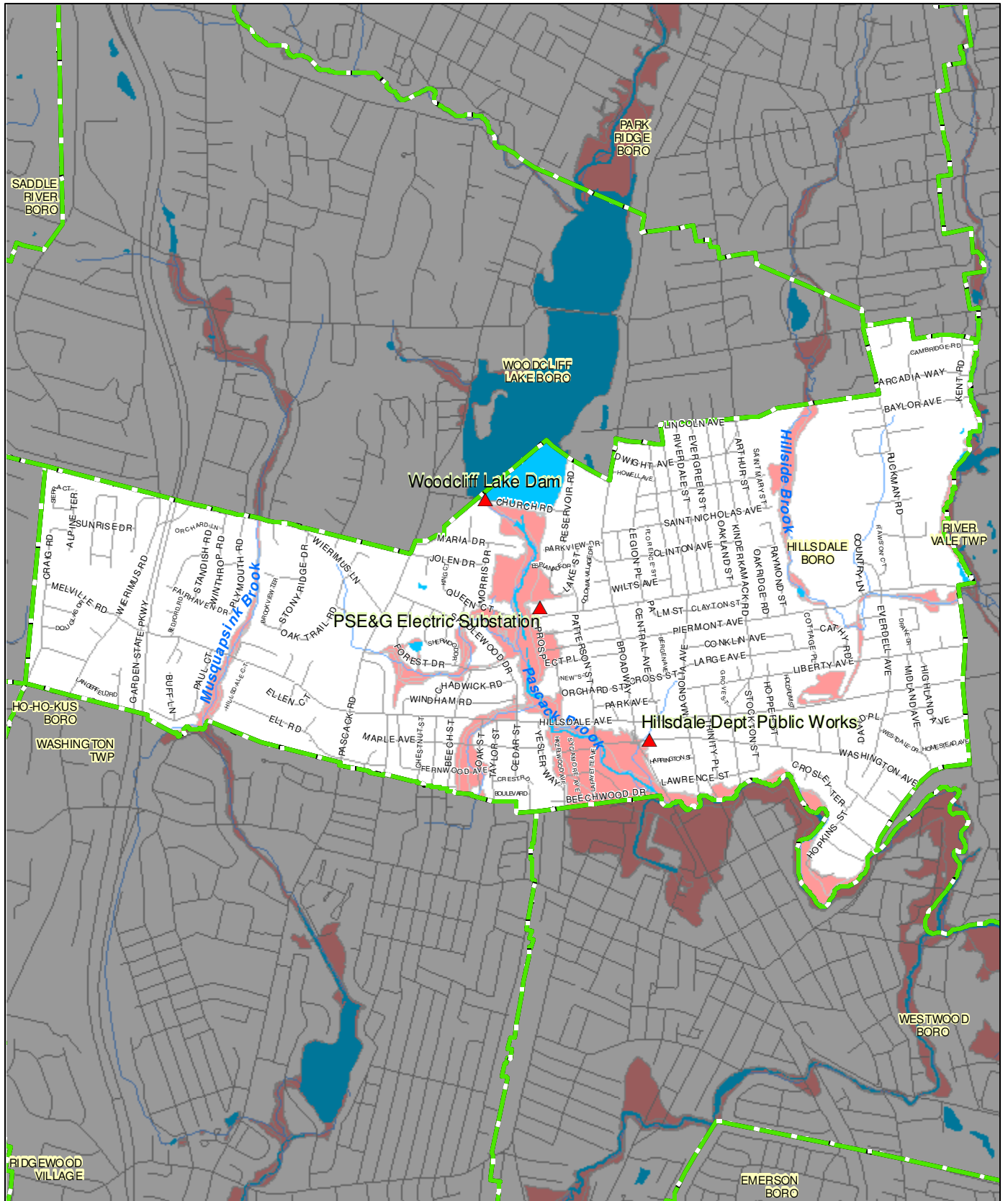
New Jersey Meadowlands Commission
ENVIRONMENTAL SCIENCE CENTER



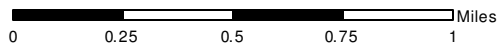
- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Hillsdale Borough Critical Facilities Bergen County, NJ



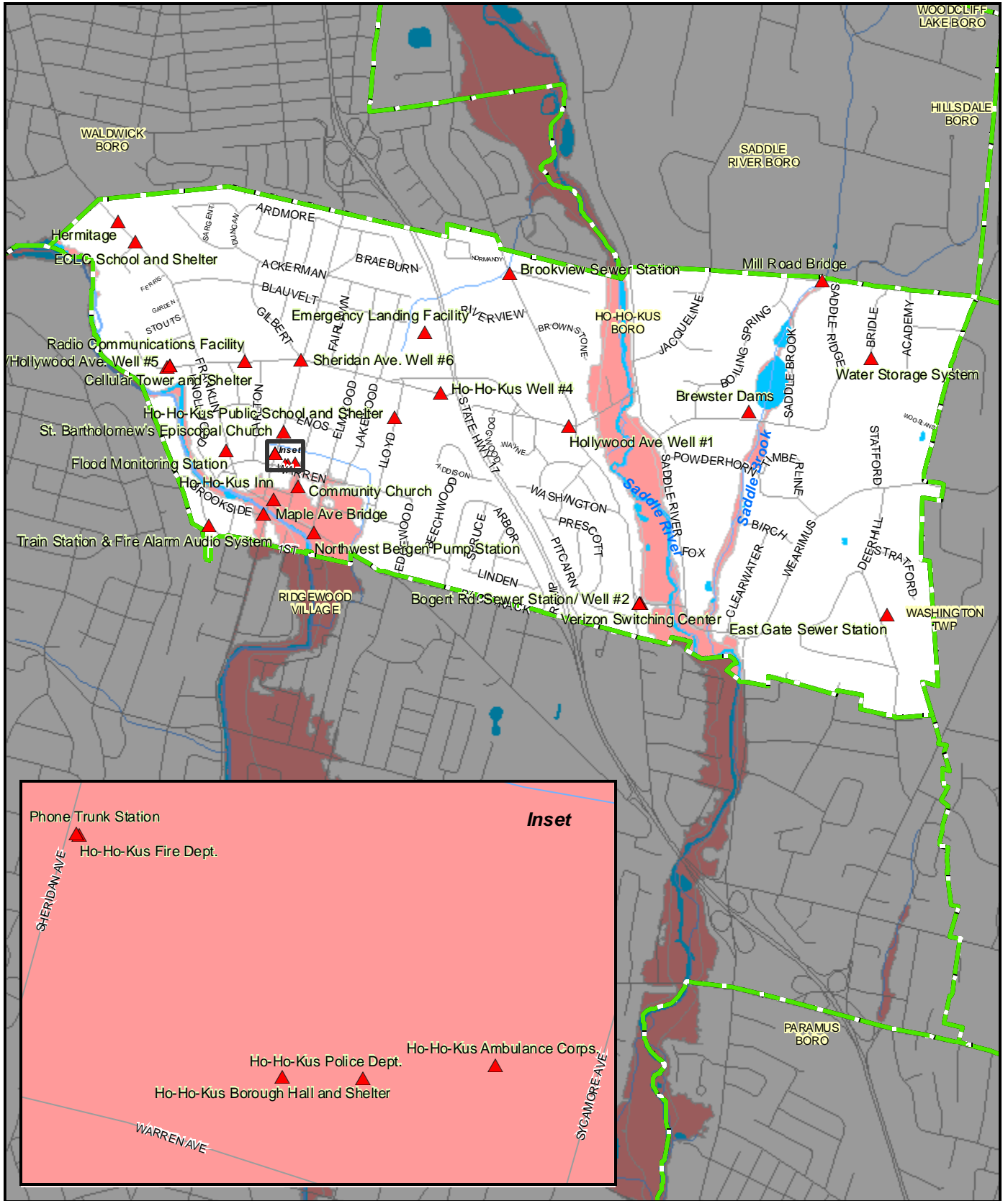
New Jersey Meadowlands Commission
ENVIRO 14629AL 222CAR011 1421P JTC




- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)


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Ho-Ho-Kus Borough Critical Facilities Bergen County, NJ

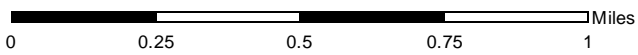










MERI
New Jersey Meadowlands Commission
COMMISSIONER OF ENVIRONMENT & PLANNING



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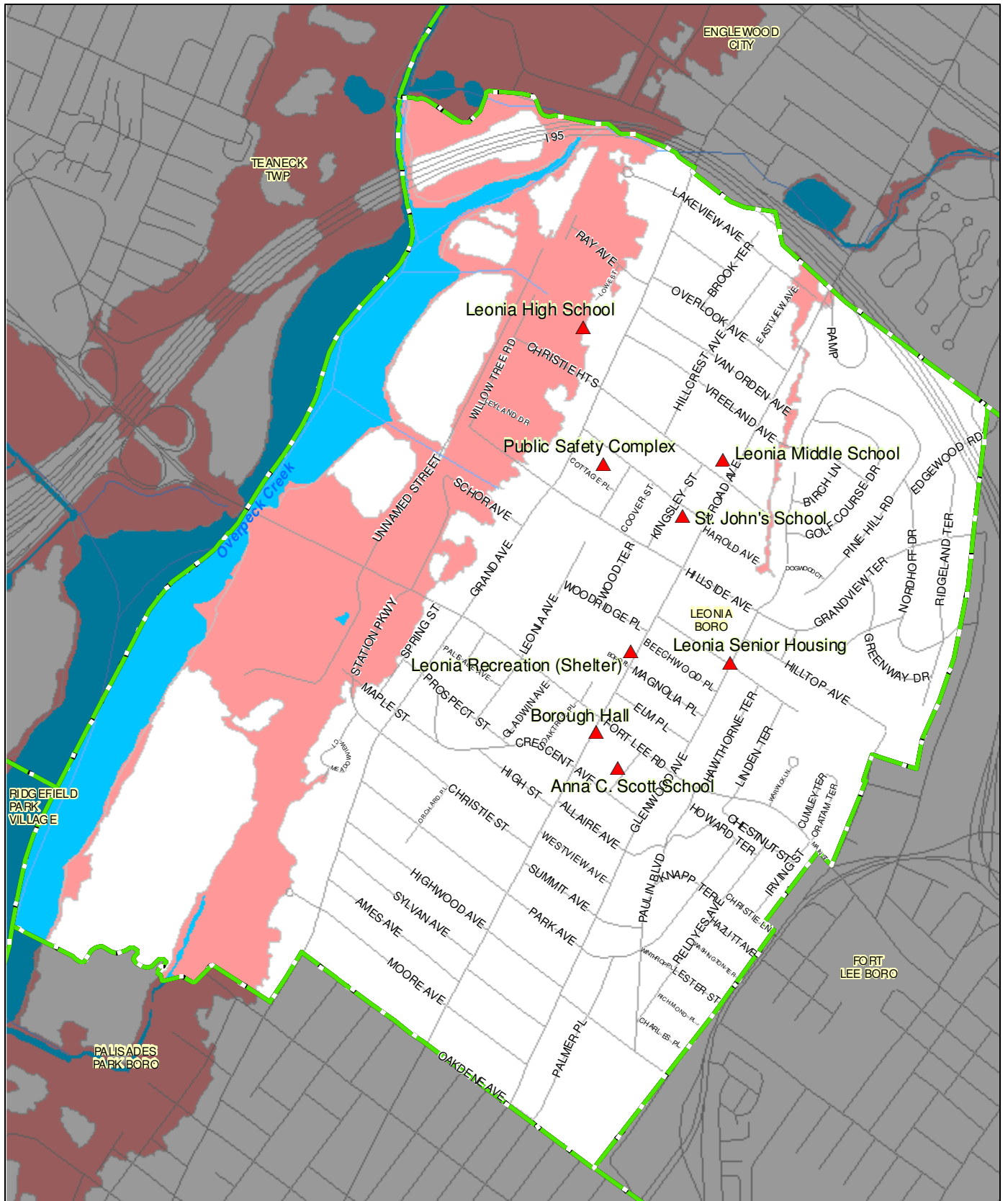


0 0.25 0.5 0.75 1 Miles

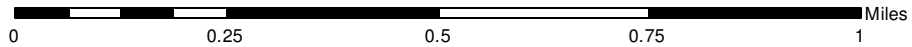
 Critical Facility	 Roadway
 Water Bodies	 Rivers, Streams
 Municipal Boundary	 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Leonia Borough Critical Facilities Bergen County, NJ



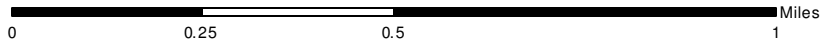
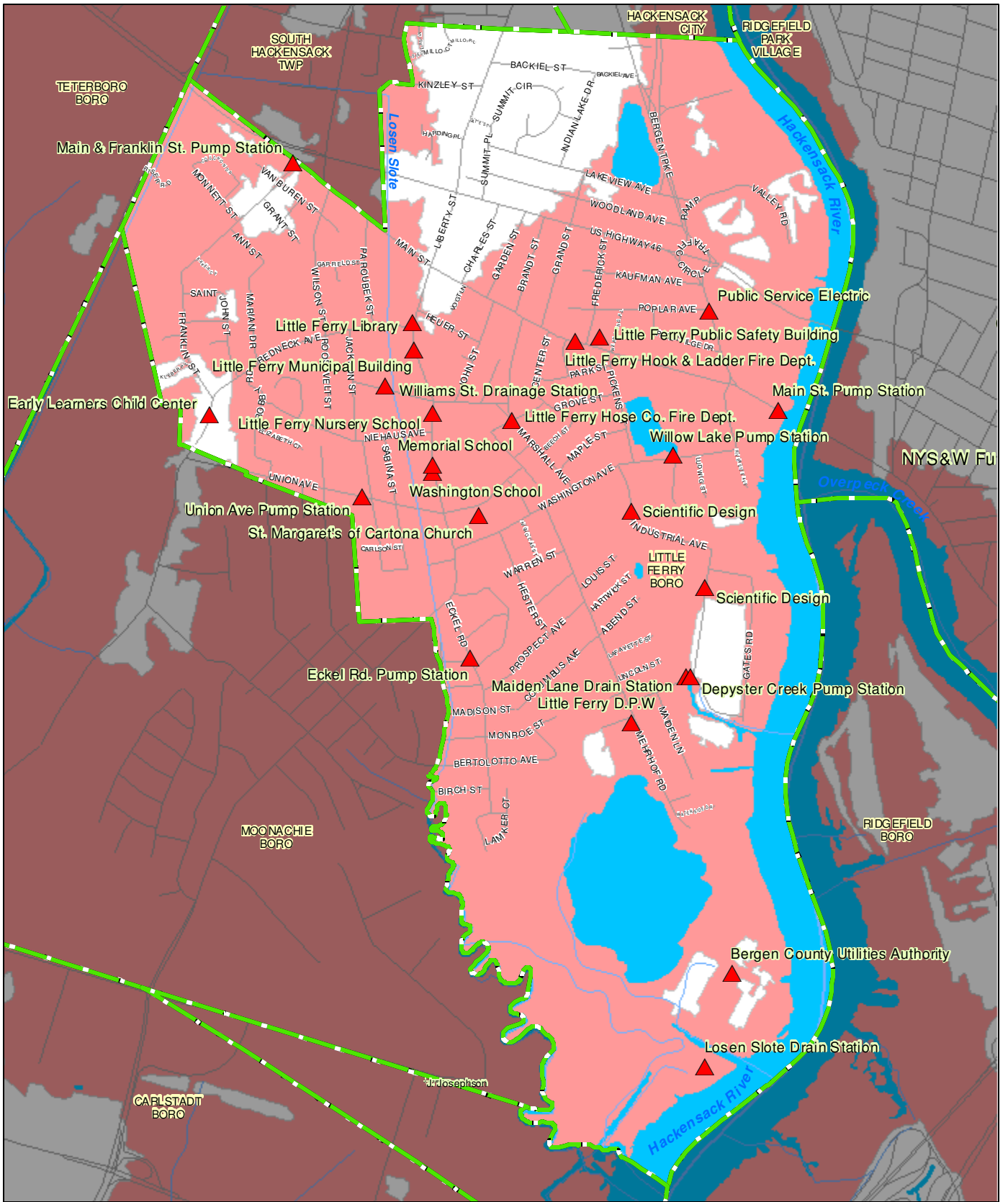
NEW JERSEY MEADOWLANDS COMMISSION
CHIEF OF MEADOWLANDS RESEARCH & PLANNING



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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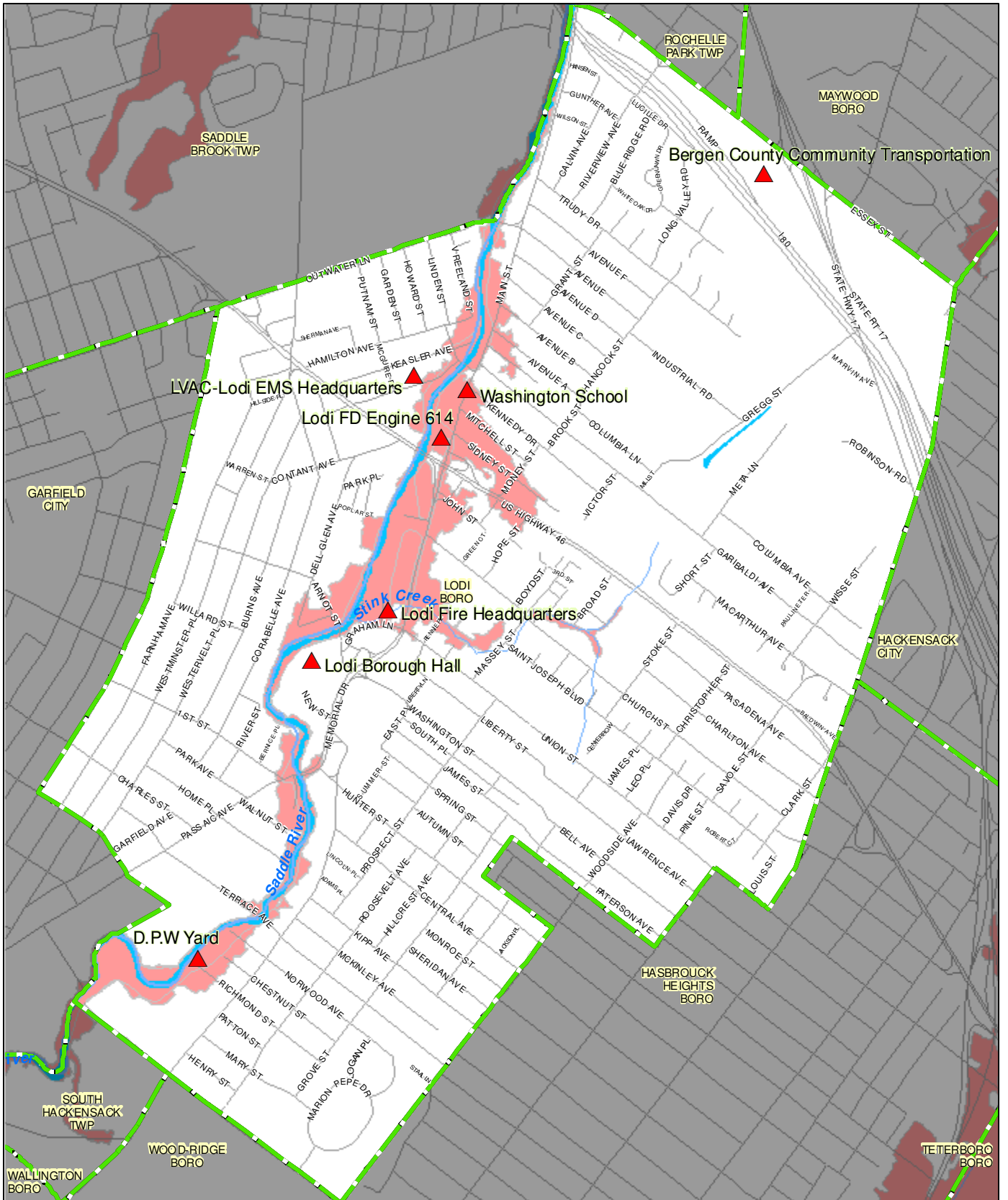
Little Ferry Borough Critical Facilities Bergen County, NJ




- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)


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Lodi Borough Critical Facilities Bergen County, NJ

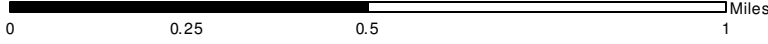










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New Jersey Meadowlands Commission
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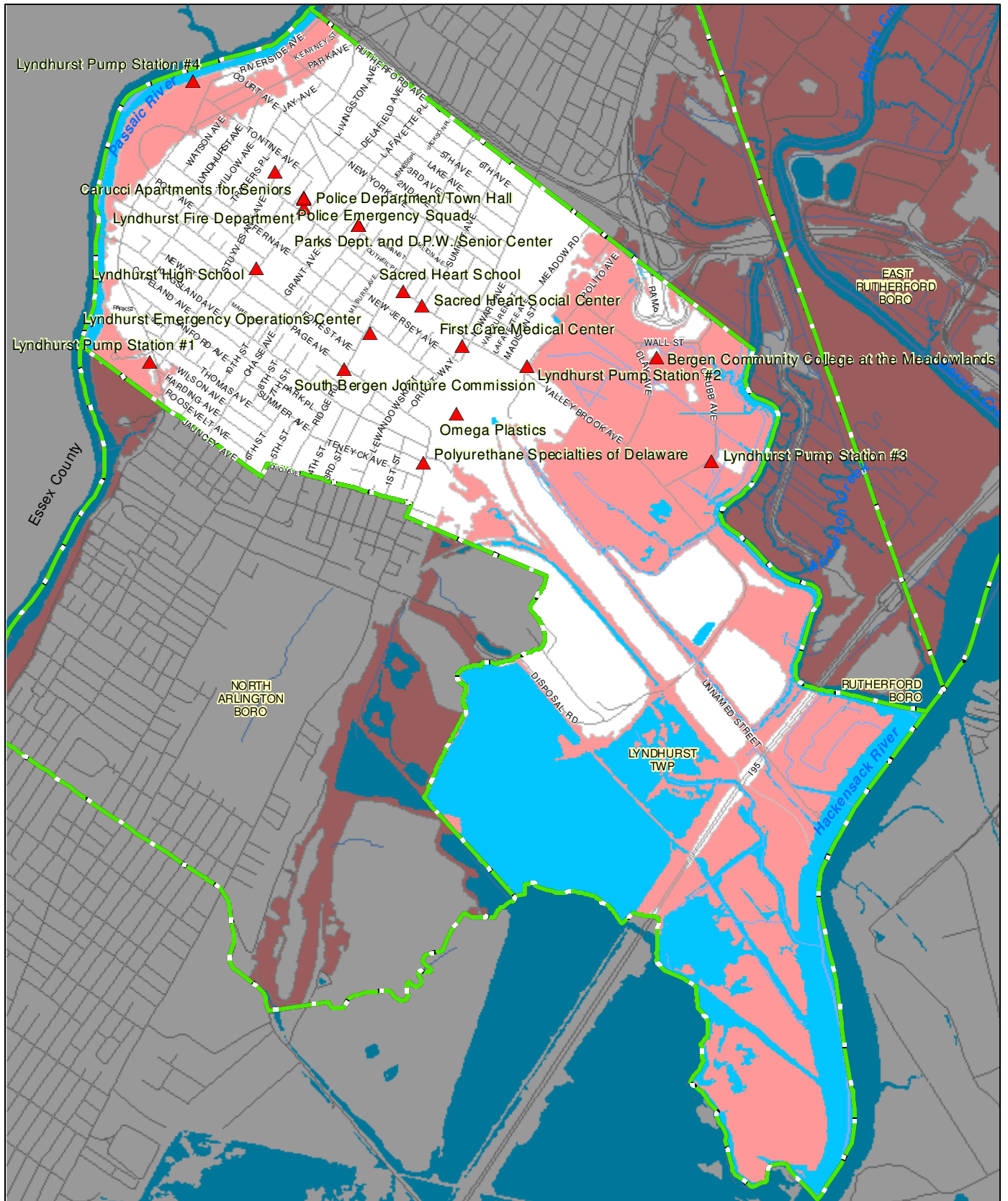


0 0.25 0.5 1 Miles

	Critical Facility		Roadway
	Water Bodies		Rivers, Streams
	Municipal Boundary		100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Lyndhurst Township Critical Facilities Bergen County, NJ



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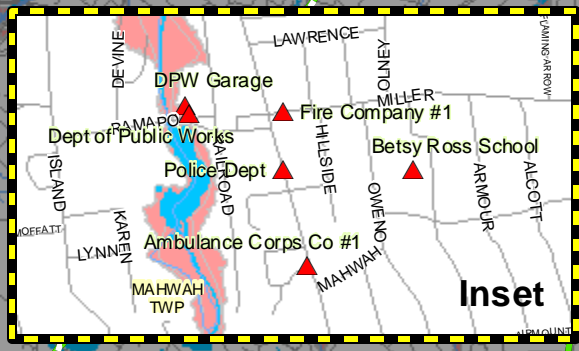
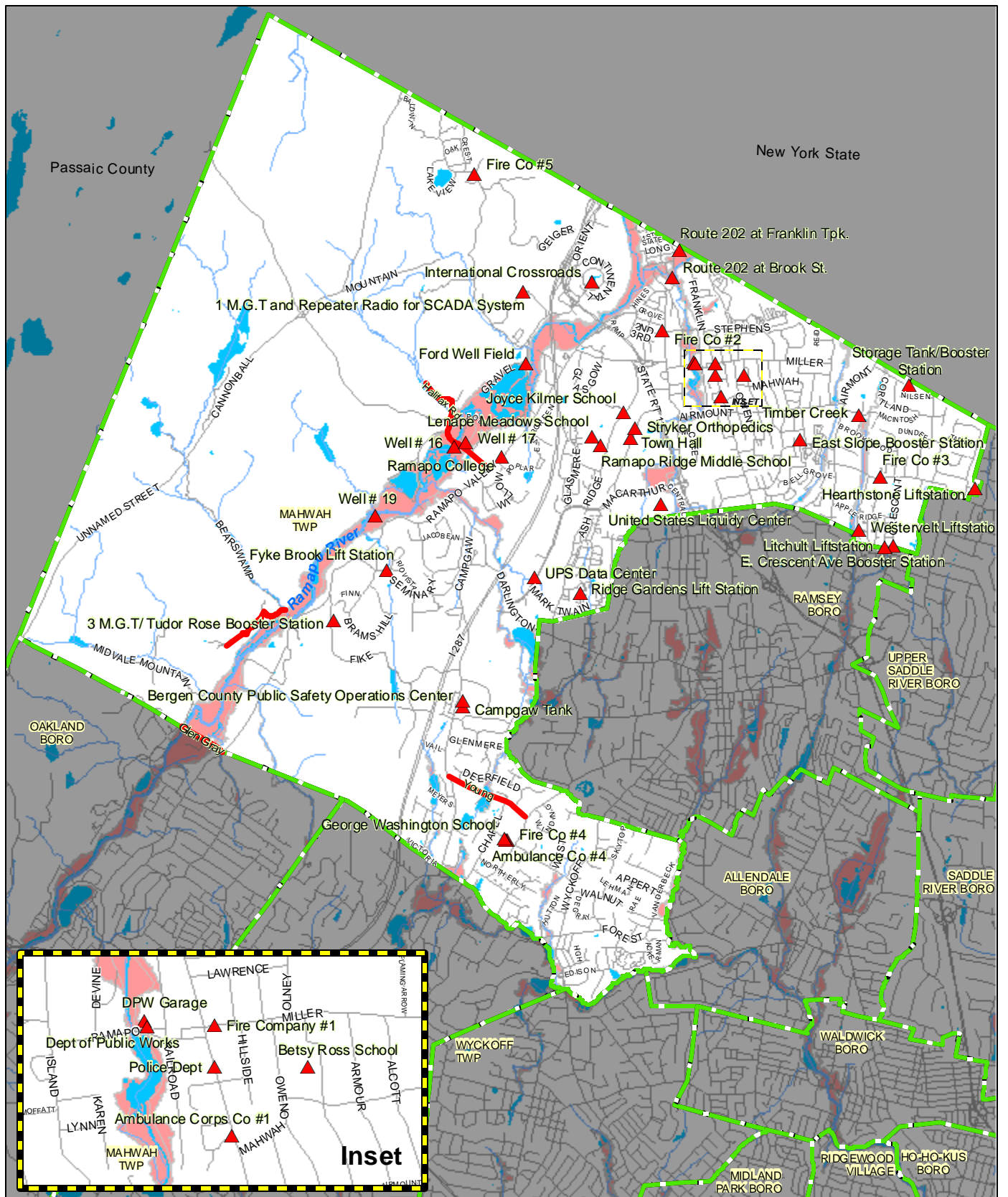


0 0.25 0.5 1 Miles

- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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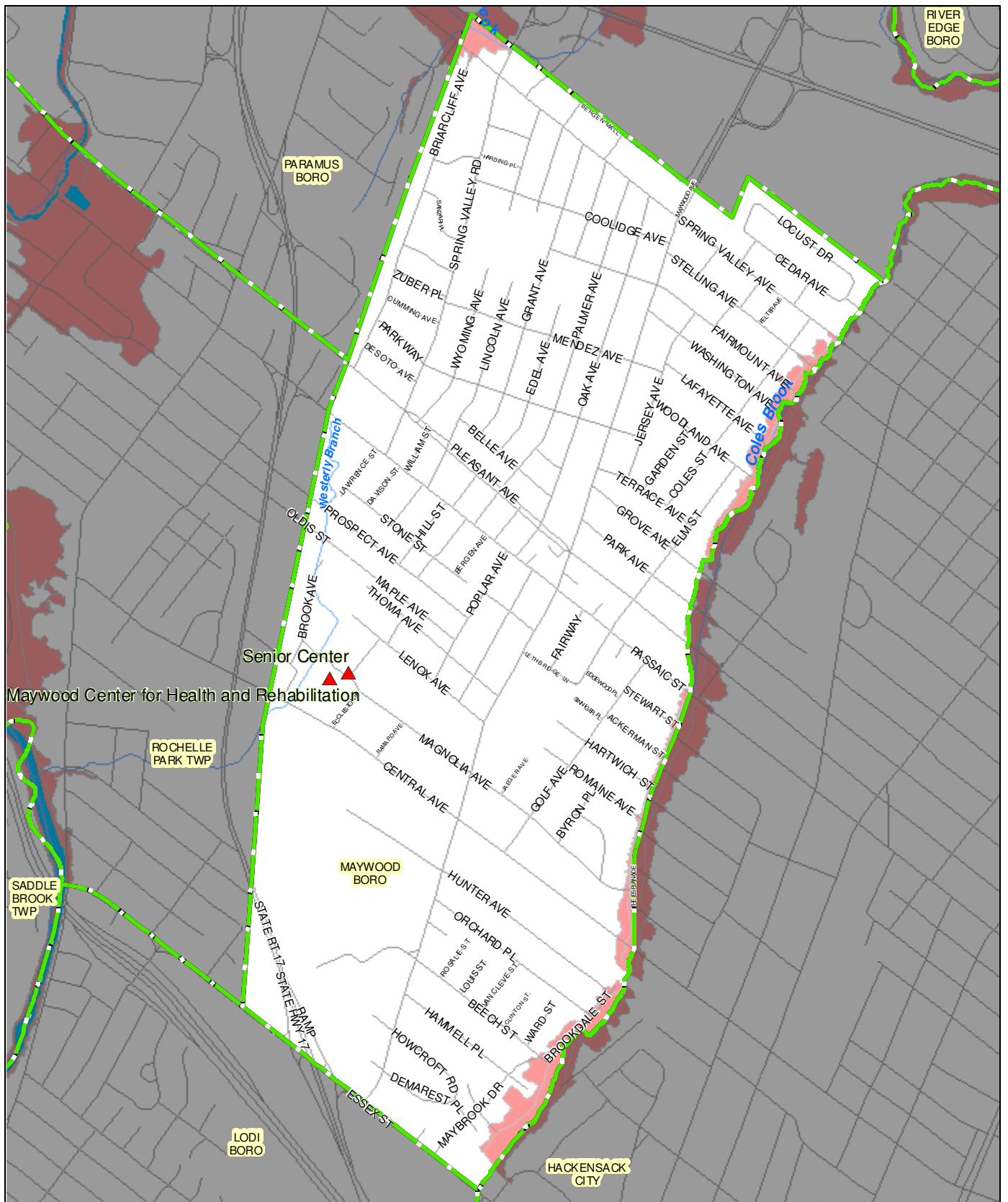
Mahwah Township Critical Facilities Bergen County, NJ





- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
100 Year Flood Zone
(FEMA Prelim FIRM 2014)

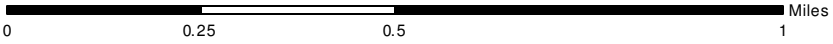
This map was developed in part using NJ Dept. of Environmental Protection GIS digital data, but this secondary product has not been verified by NJDEP. For information on map content and accuracy, contact the NJMC-MERI GIS Department at merigis@njmeadowlands.gov or 201-460-4612.







Maywood Borough Critical Facilities Bergen County, NJ



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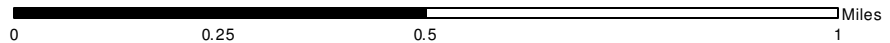
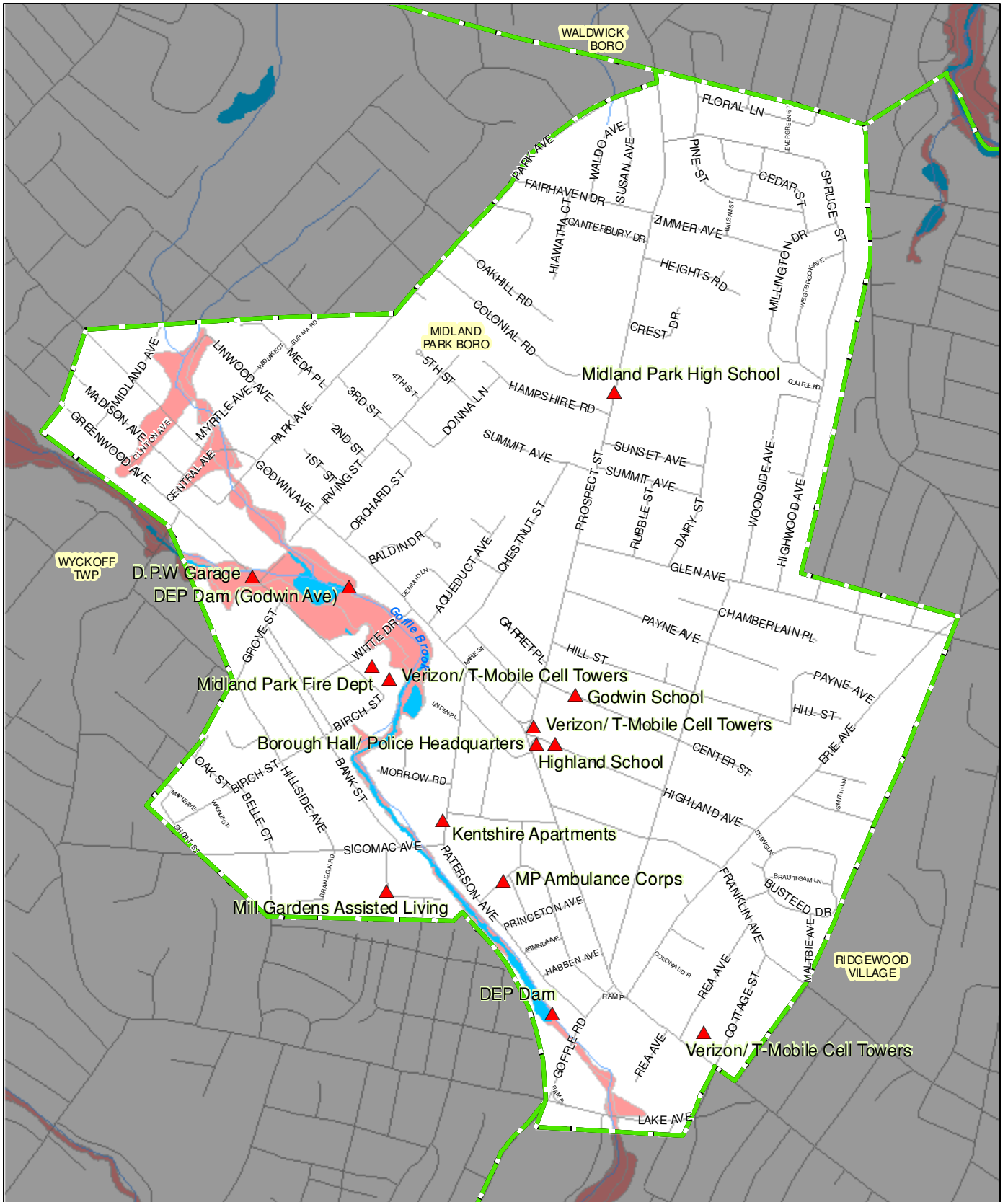
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 0 0.25 0.5 1 Miles

 Critical Facility	 Roadway
 Water Bodies	 Rivers, Streams
 Municipal Boundary	 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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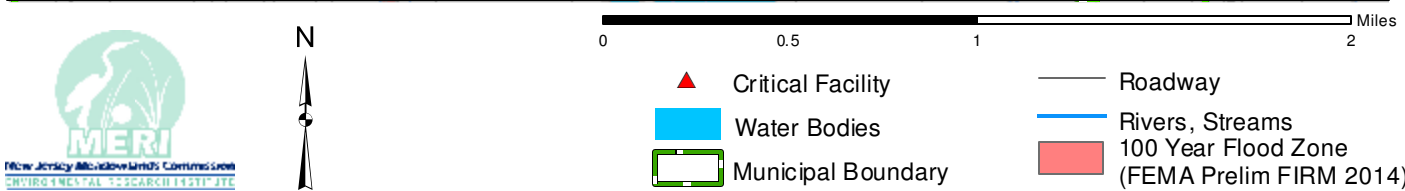
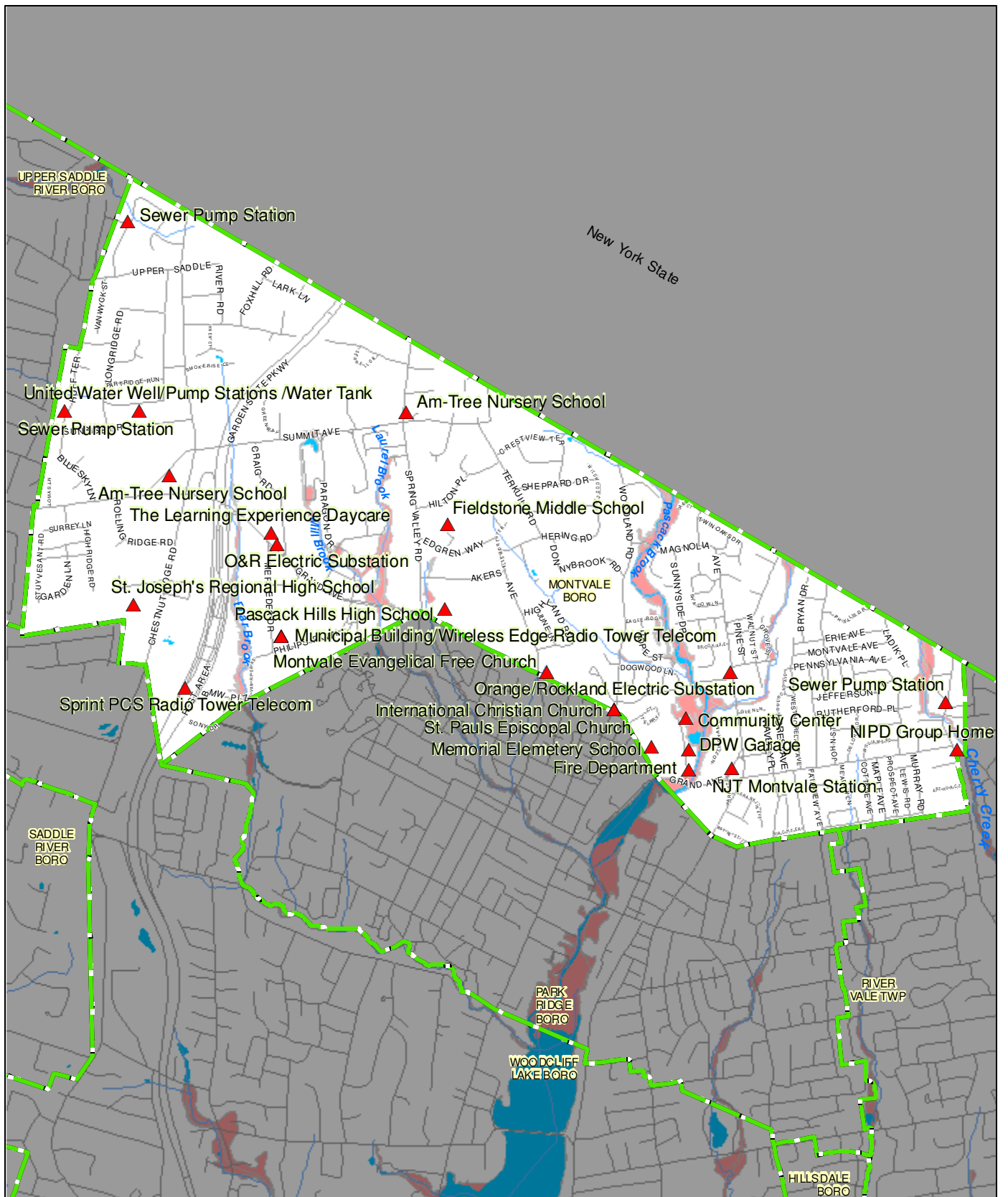
Midland Park Borough Critical Facilities Bergen County, NJ



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

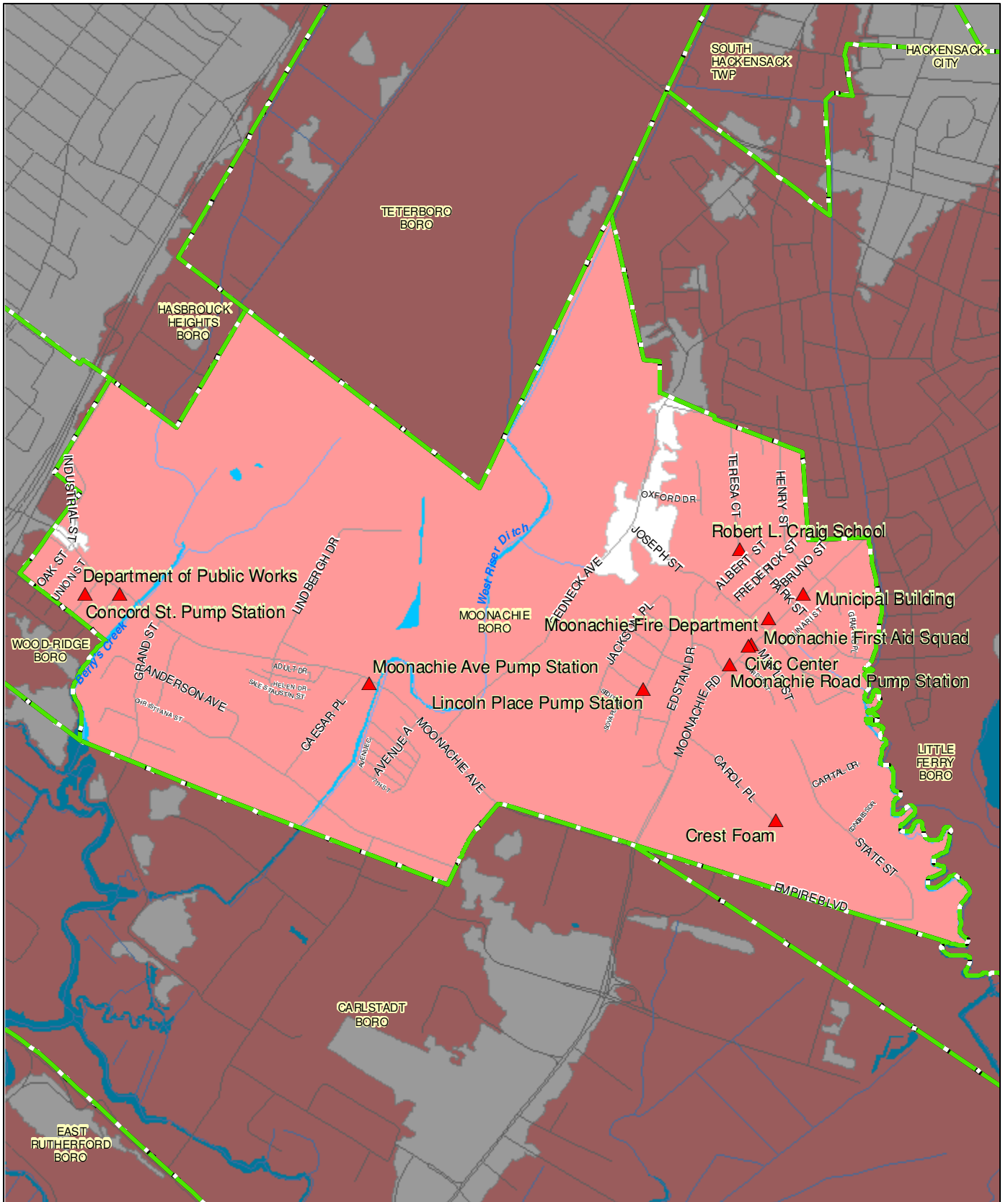
This map was developed in part using NJ Dept. of Environmental Protection GIS digital data, but this secondary product has not been verified by NJDEP. For information on map content and accuracy, contact the NJMC-MERI GIS Department at merigis@njmeadowlands.gov or 201-460-4612.


Montvale Borough Critical Facilities Bergen County, NJ




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Moonachie Borough Critical Facilities Bergen County, NJ

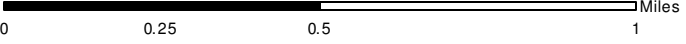










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New Jersey Meadowlands Commission
ENVIRONMENTAL SCIENCE CENTER 1421P JTC



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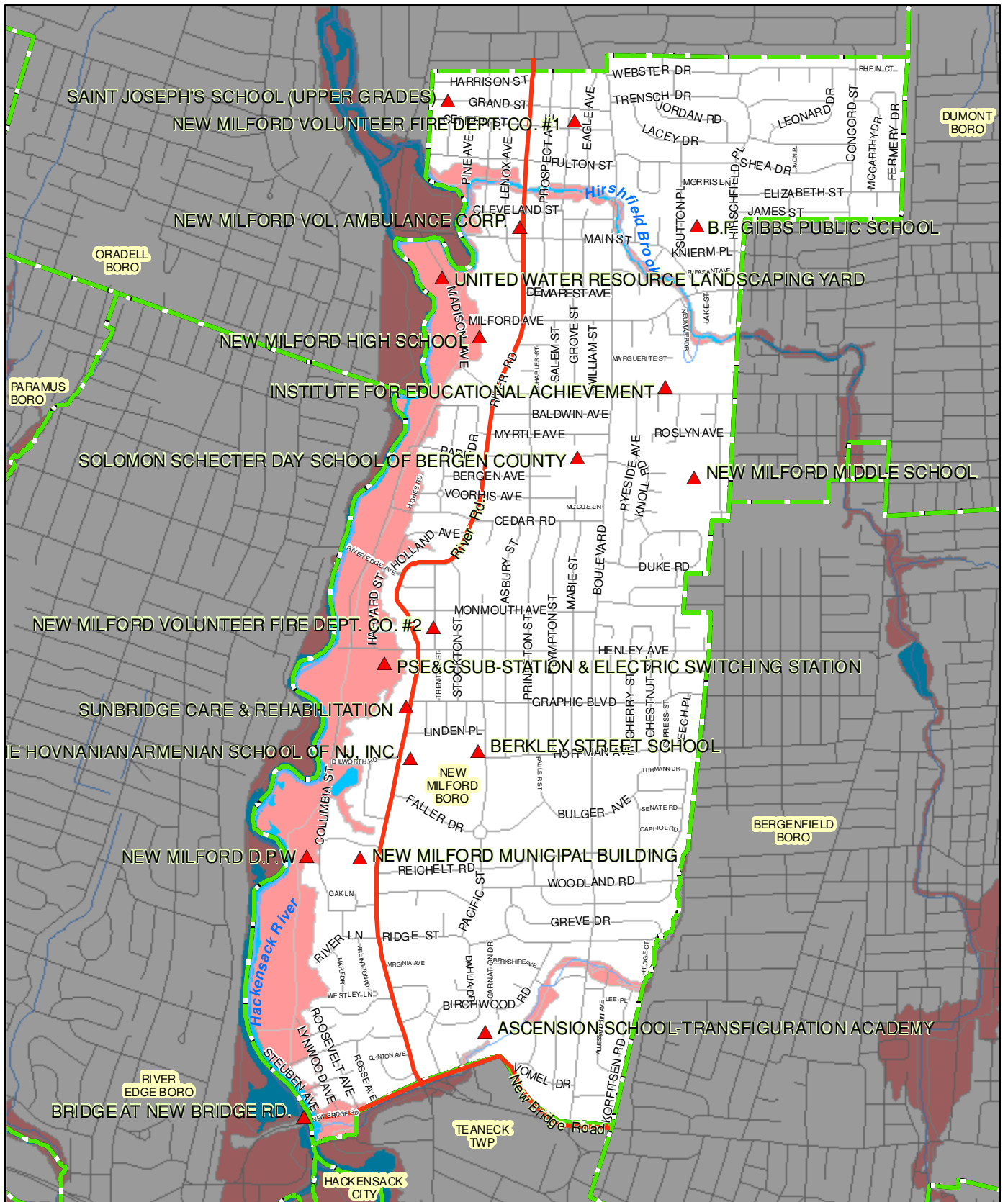



0 0.25 0.5 1 Miles

	Critical Facility		Roadway
	Water Bodies		Rivers, Streams
	Municipal Boundary		100 Year Flood Zone (FEMA Prelim FIRM 2014)


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New Milford Borough Critical Facilities Bergen County, NJ

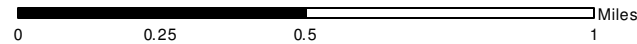




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New Jersey Meadowlands Commission
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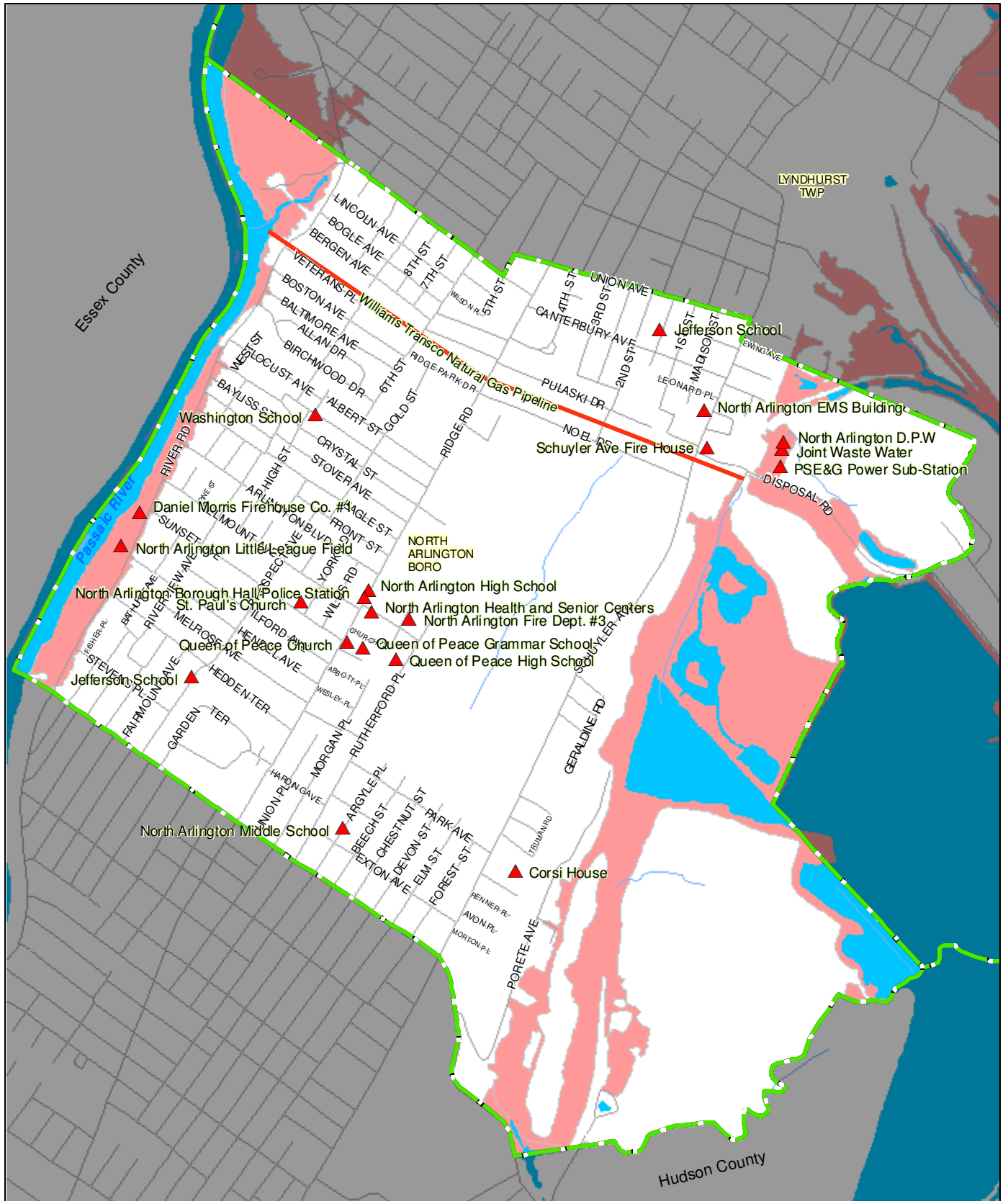



0 0.25 0.5 1 Miles

- ▲ Critical Facility
- Water Bodies
- Critical Feature
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)


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North Arlington Borough Critical Facilities Bergen County, NJ

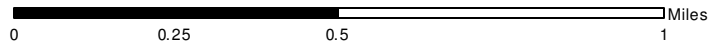




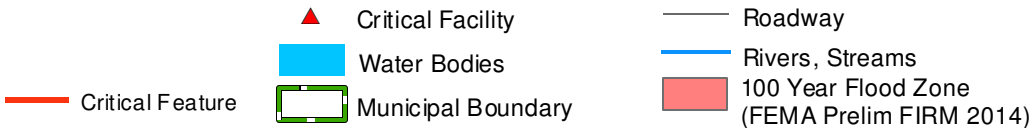
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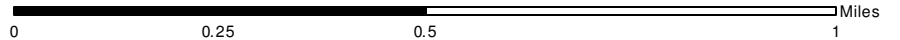
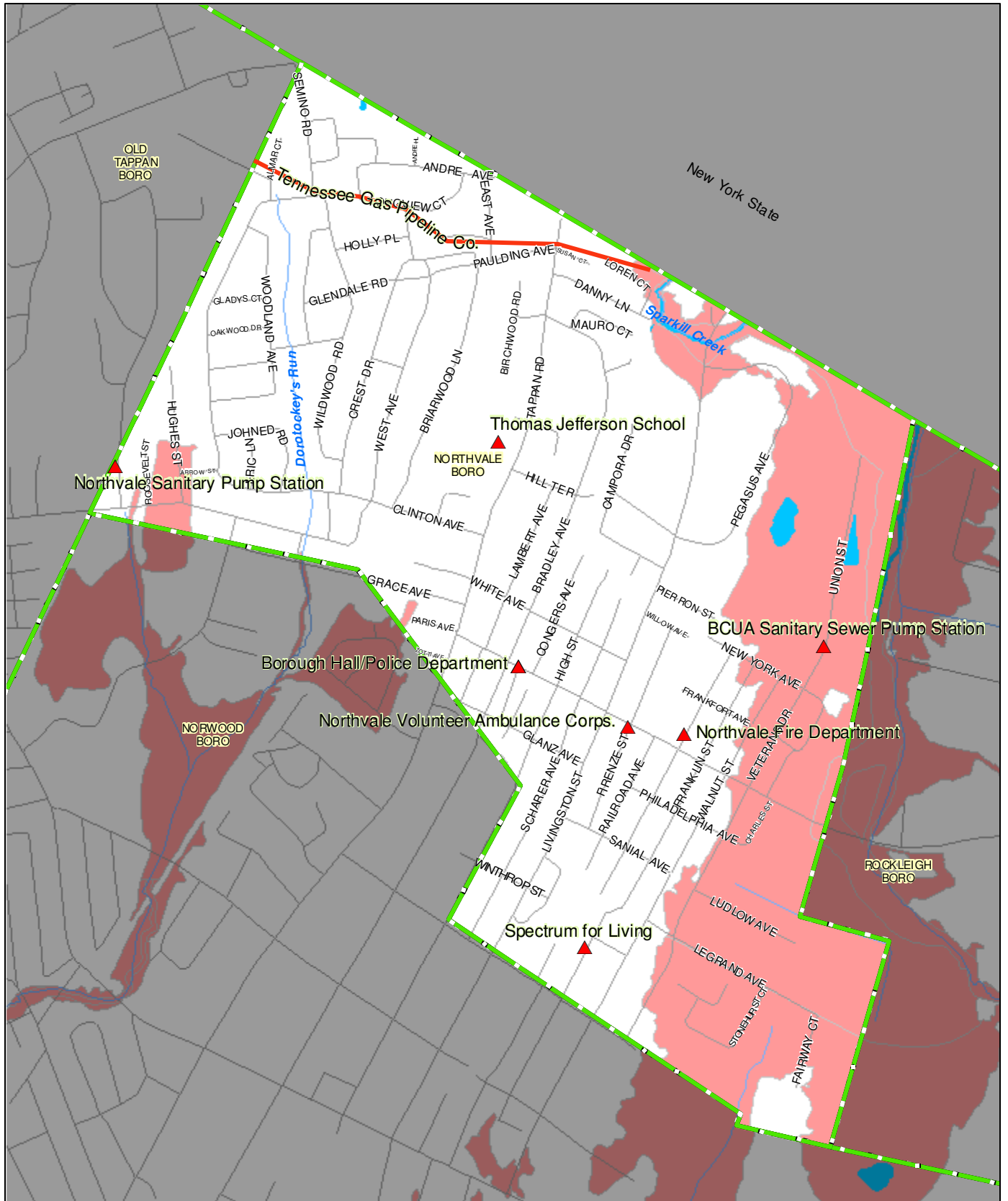
0 0.25 0.5 1 Miles



- ▲ Critical Facility
- Water Bodies
- Critical Feature
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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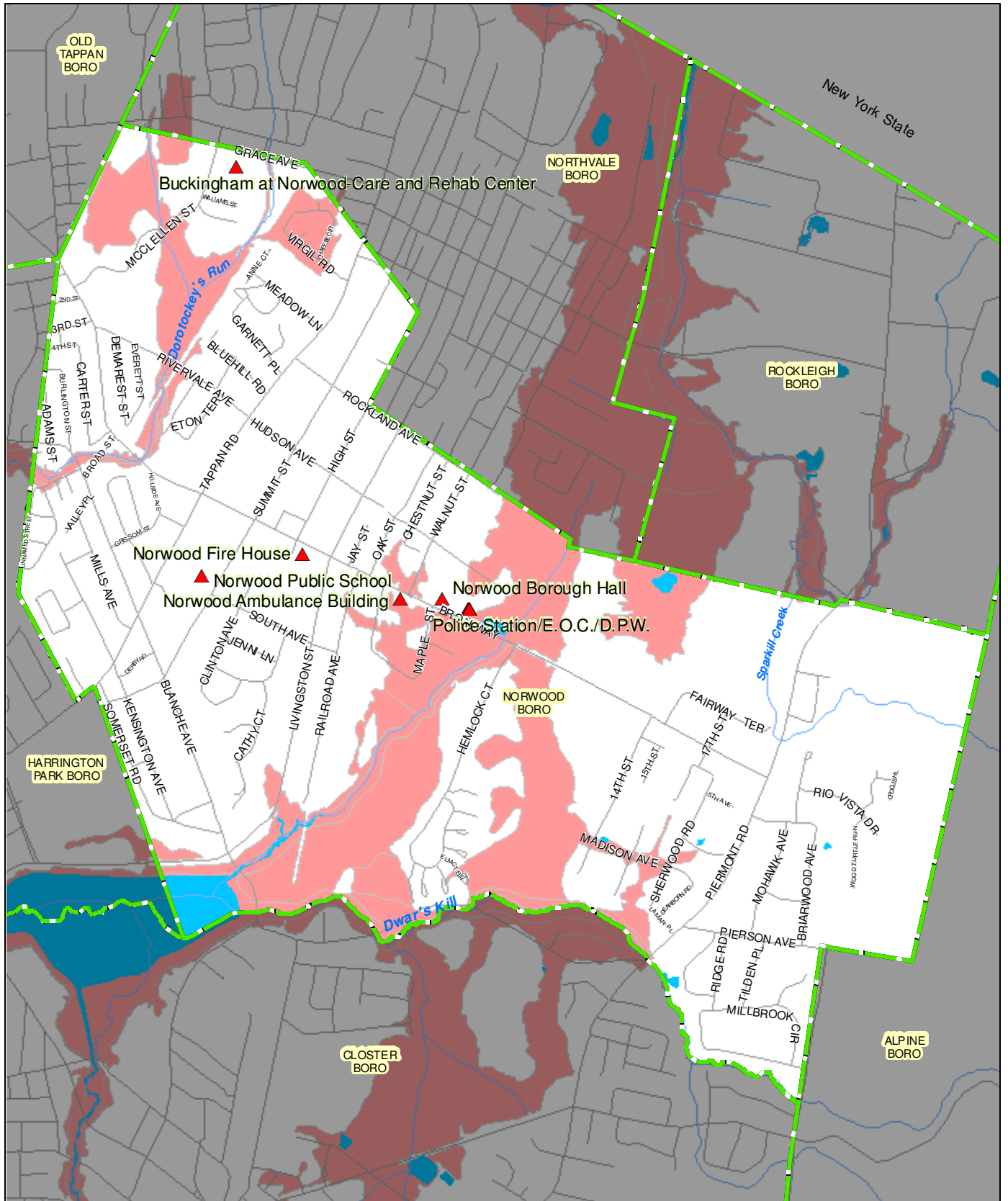
Northvale Borough Critical Facilities Bergen County, NJ



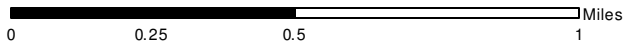
- | | |
|--------------------|---|
| Critical Facility | Roadway |
| Water Bodies | Rivers, Streams |
| Critical Feature | 100 Year Flood Zone (FEMA Prelim FIRM 2014) |
| Municipal Boundary | |

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Norwood Borough Critical Facilities Bergen County, NJ



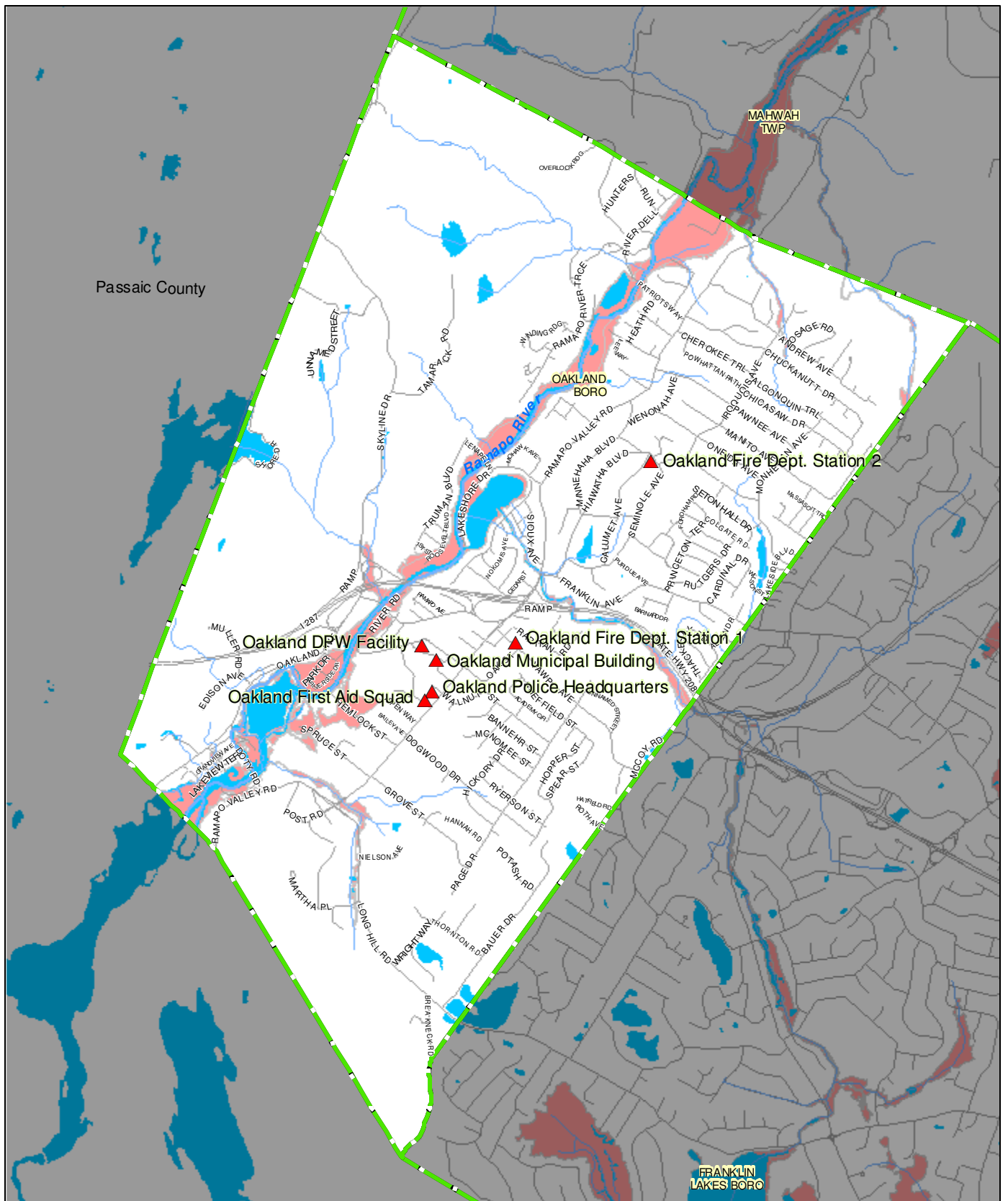
New Jersey Meadowlands Commission
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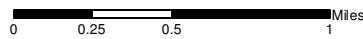
- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Oakland Borough Critical Facilities Bergen County, NJ



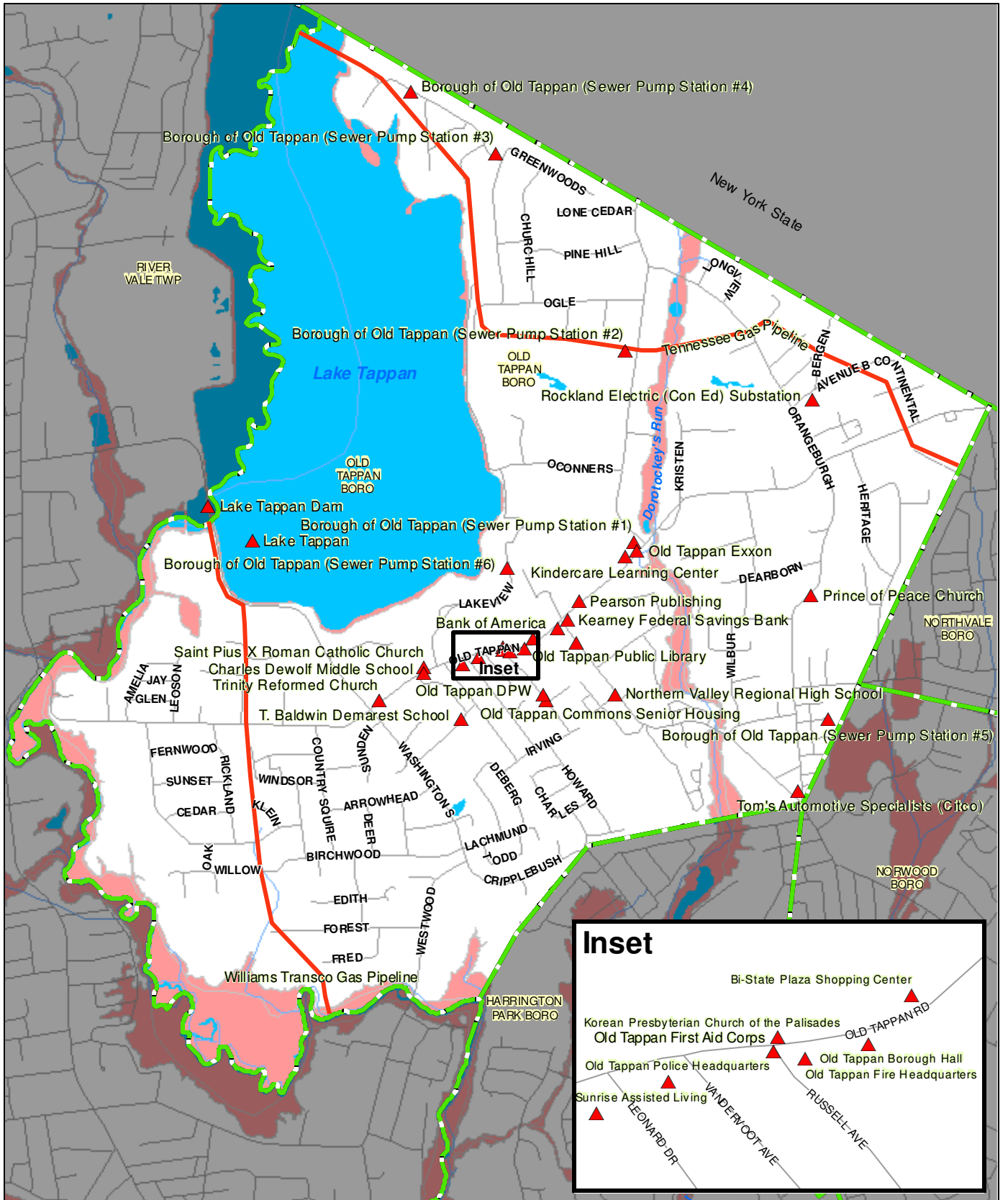
New Jersey Meadowlands Commission
ENVIRONMENTAL RESEARCH CENTER




- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)


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Old Tappan Borough Critical Facilities Bergen County, NJ

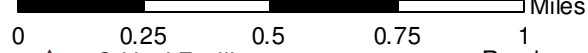





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0 0.25 0.5 0.75 1 Miles


 Critical Facility


 Roadway

 Water Bodies

 Rivers, Streams

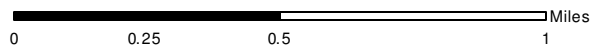
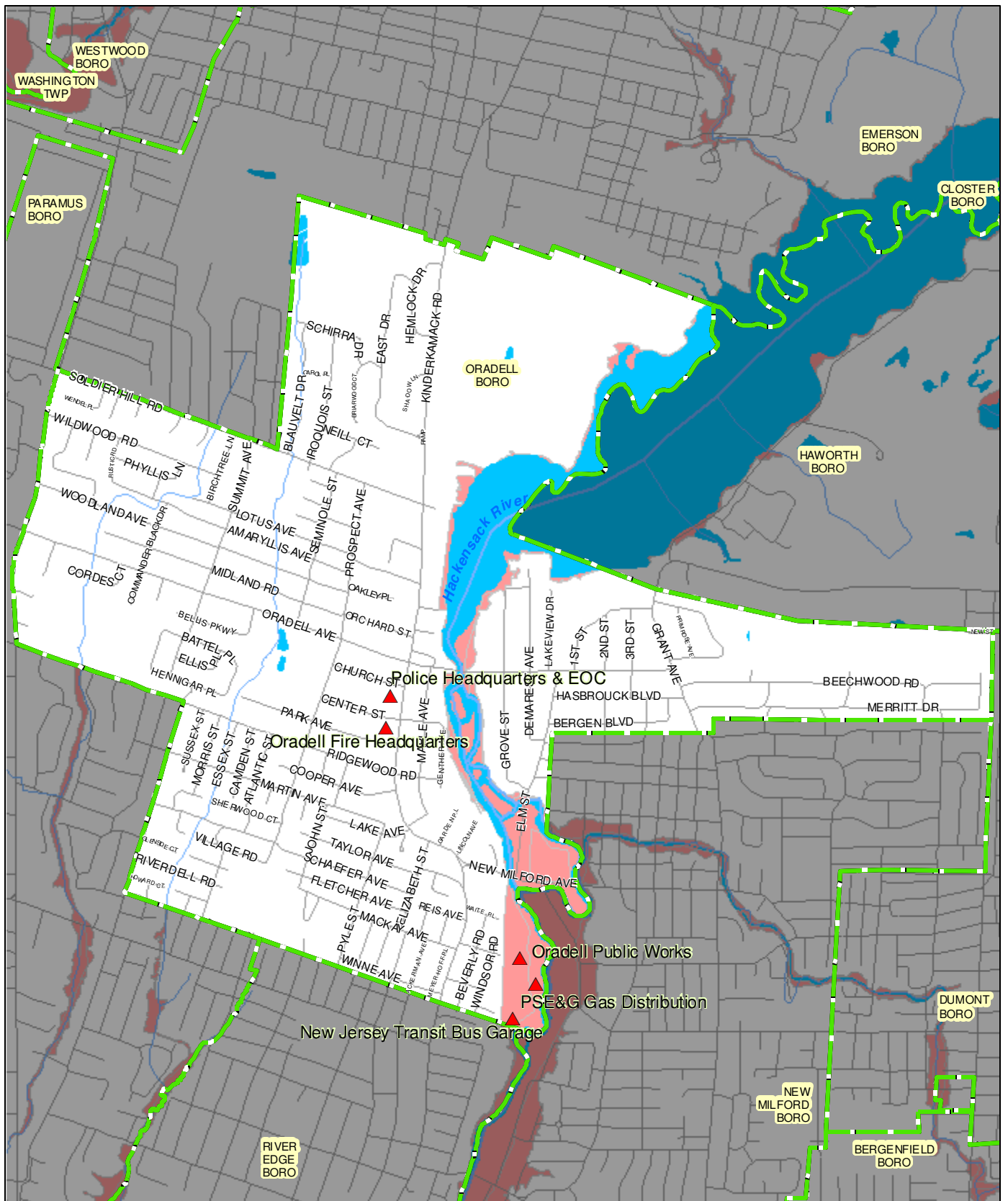
 Critical Feature

 Municipal Boundary

 100 Year Flood Zone
(FEMA Prelim FIRM 2014)

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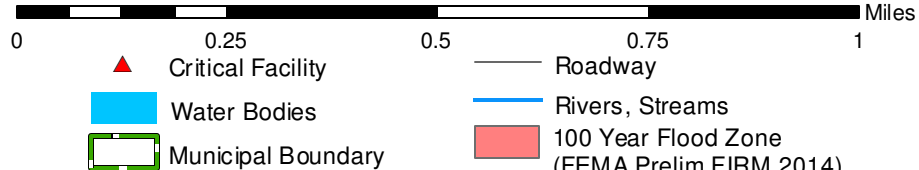
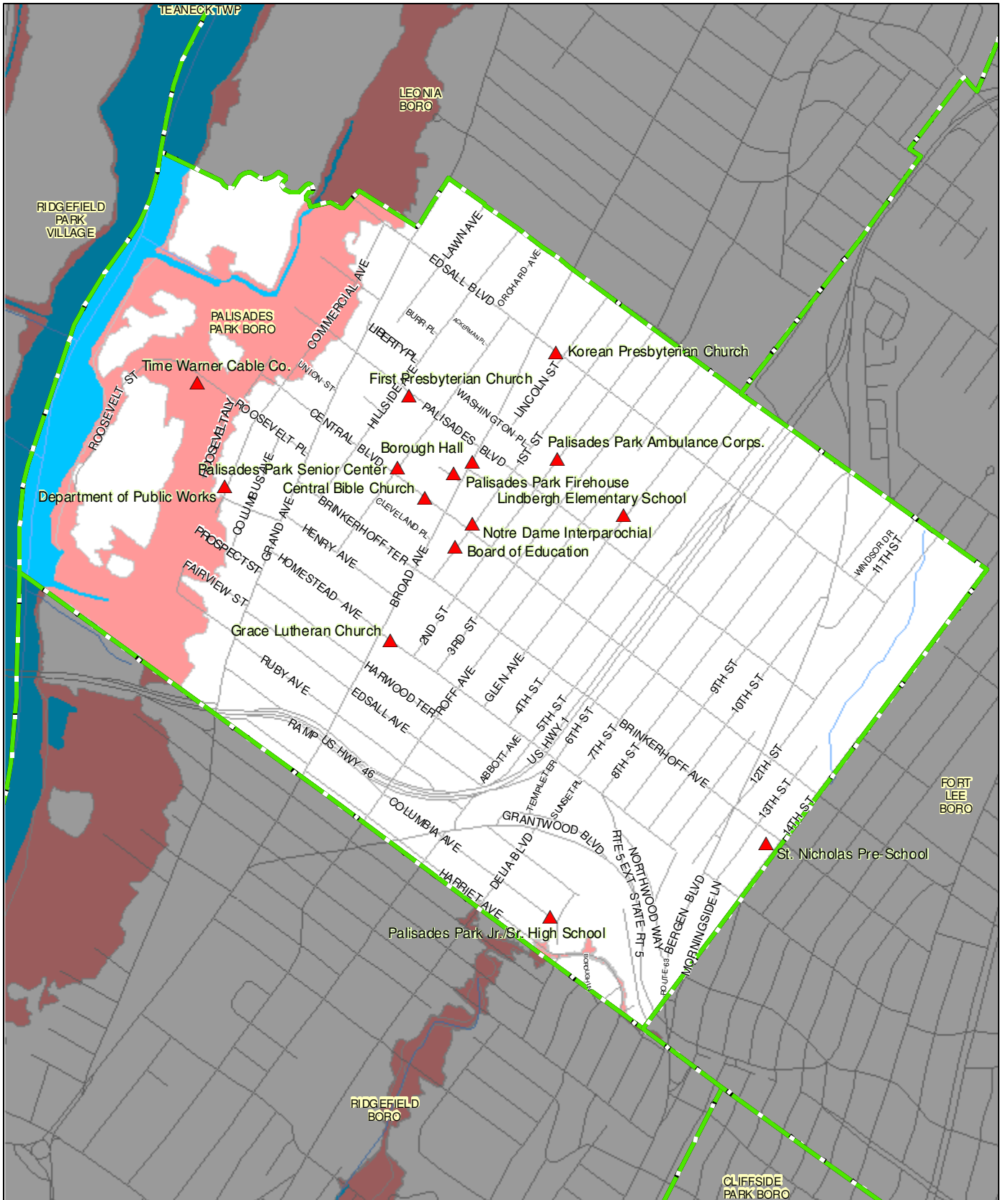
Oradell Borough Critical Facilities Bergen County, NJ



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

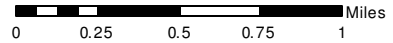
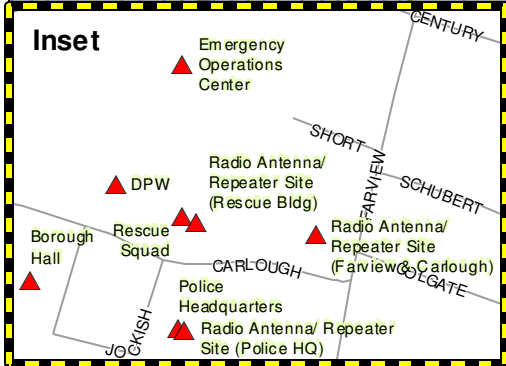
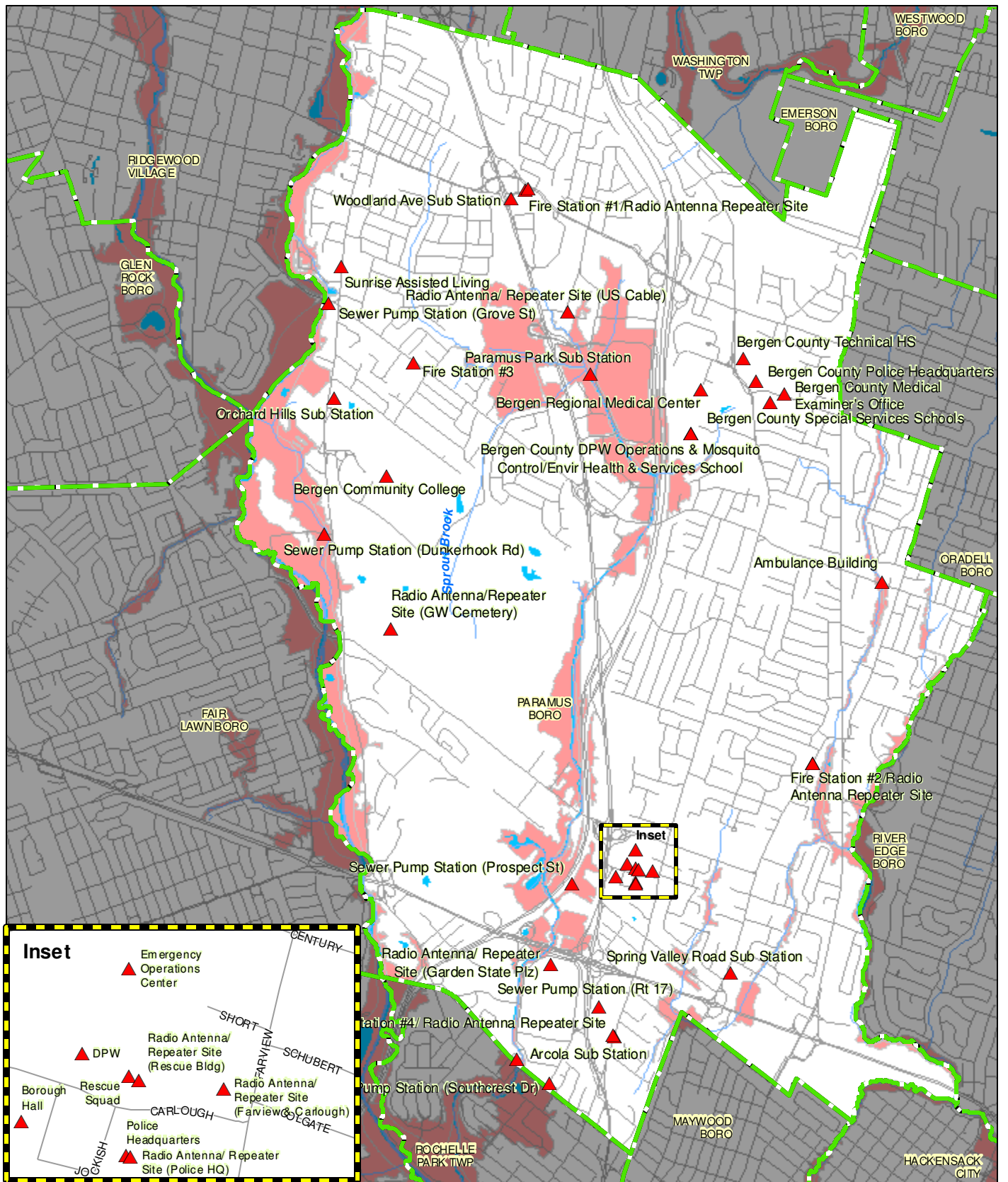
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Palisades Park Borough Critical Facilities Bergen County, NJ



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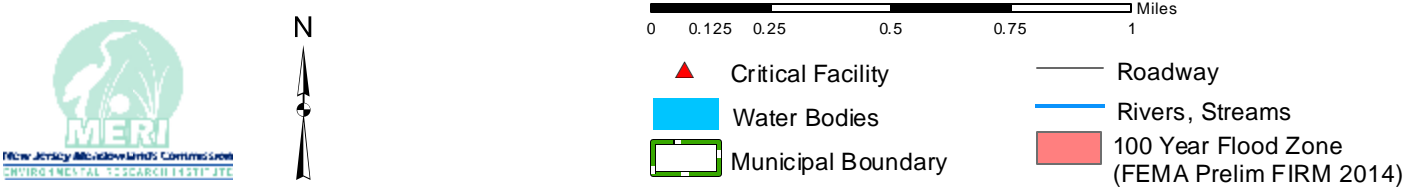
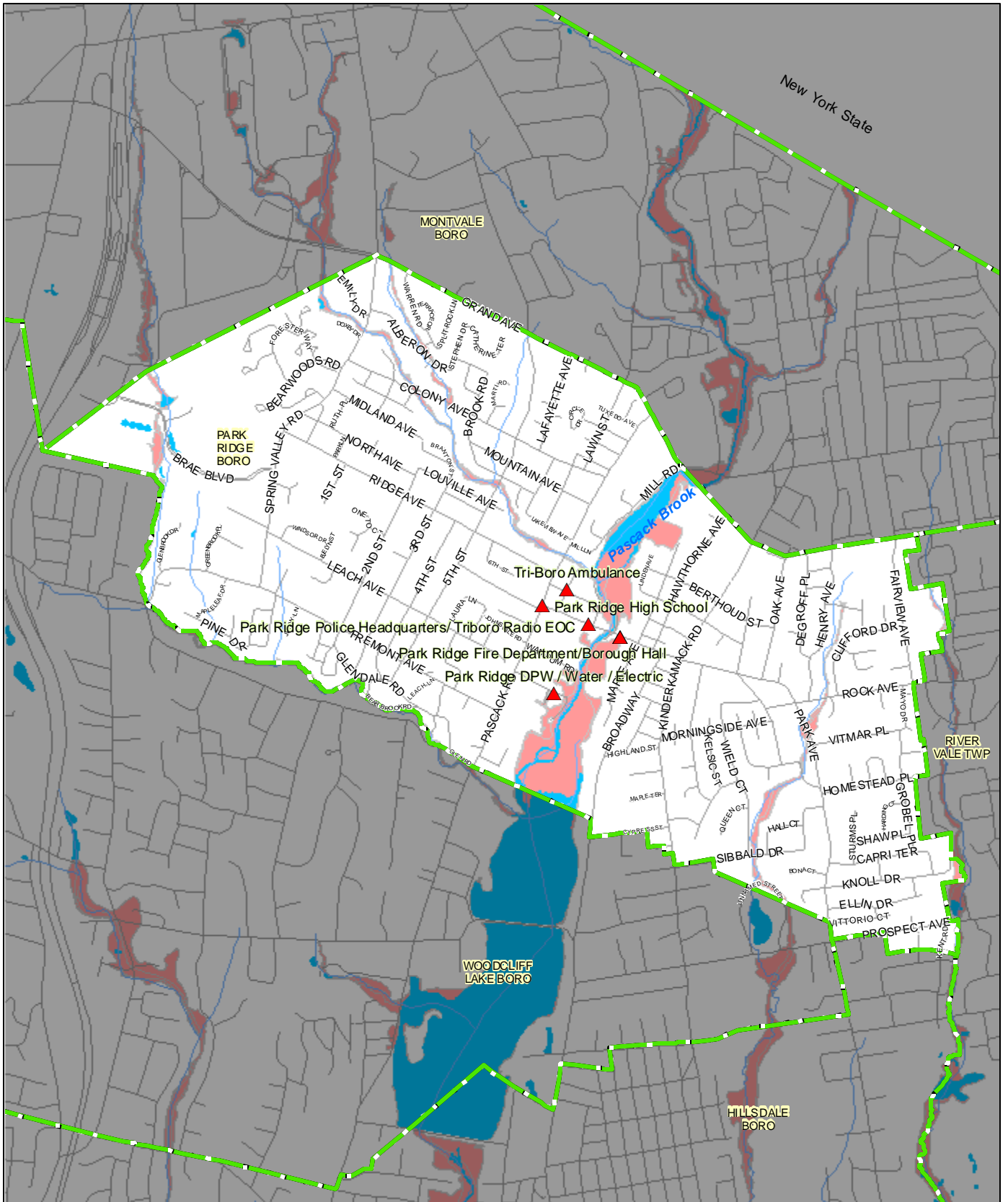
Paramus Borough Critical Facilities Bergen County, NJ



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

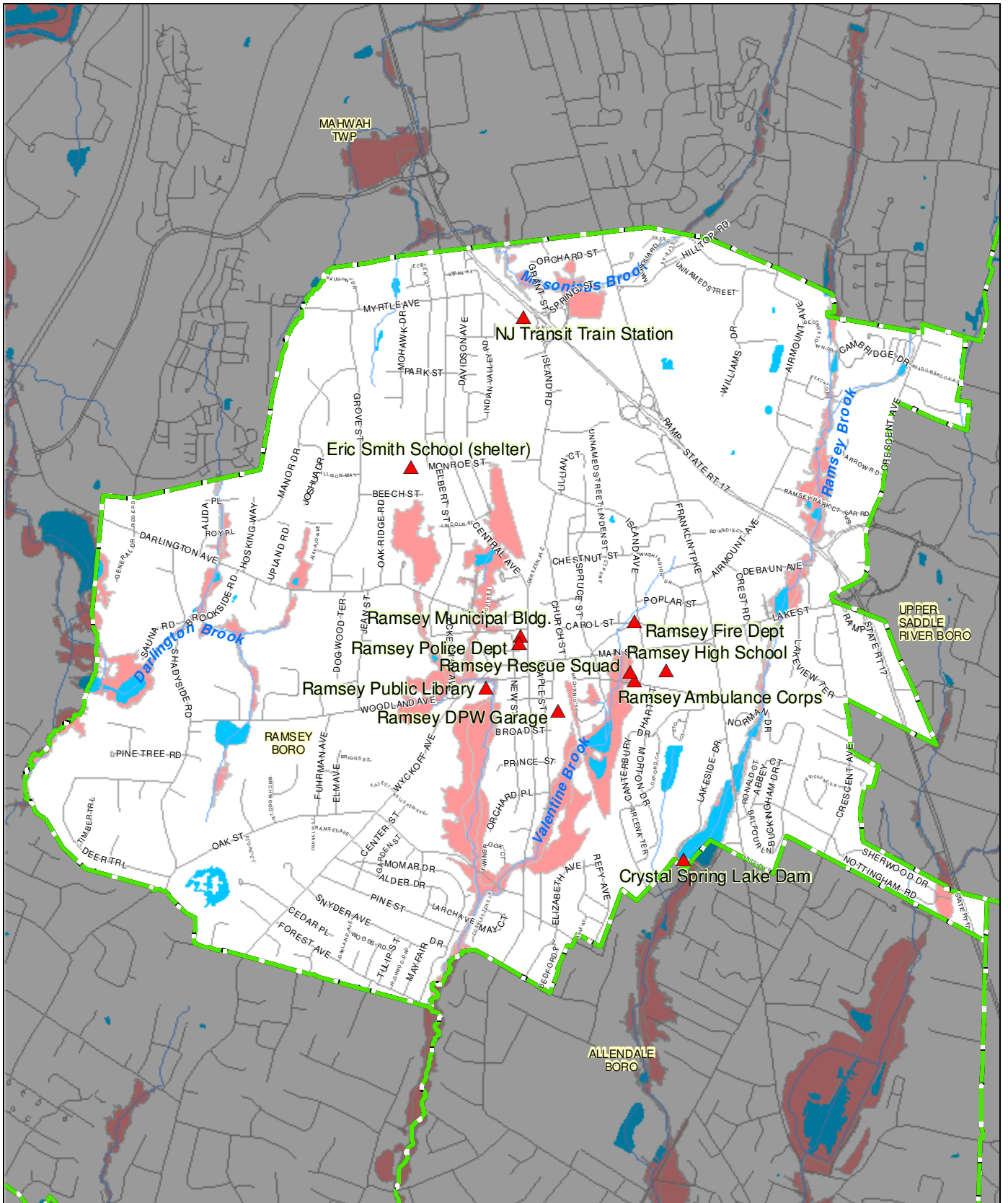
This map was developed in part using NJ Dept. of Environmental Protection GIS digital data, but this secondary product has not been verified by NJDEP. For information on map content and accuracy, contact the NJMC-MERI GIS Department at merigis@njmeadowlands.gov or 201-460-4612.

Park Ridge Borough Critical Facilities Bergen County, NJ

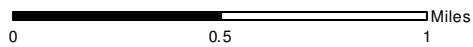


This map was developed in part using NJ Dept. of Environmental Protection GIS digital data, but this secondary product has not been verified by NJDEP. For information on map content and accuracy, contact the NJMC-MERI GIS Department at merigis@njmeadowlands.gov or 201-460-4612.

Ramsey Borough Critical Facilities Bergen County, NJ



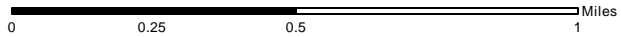
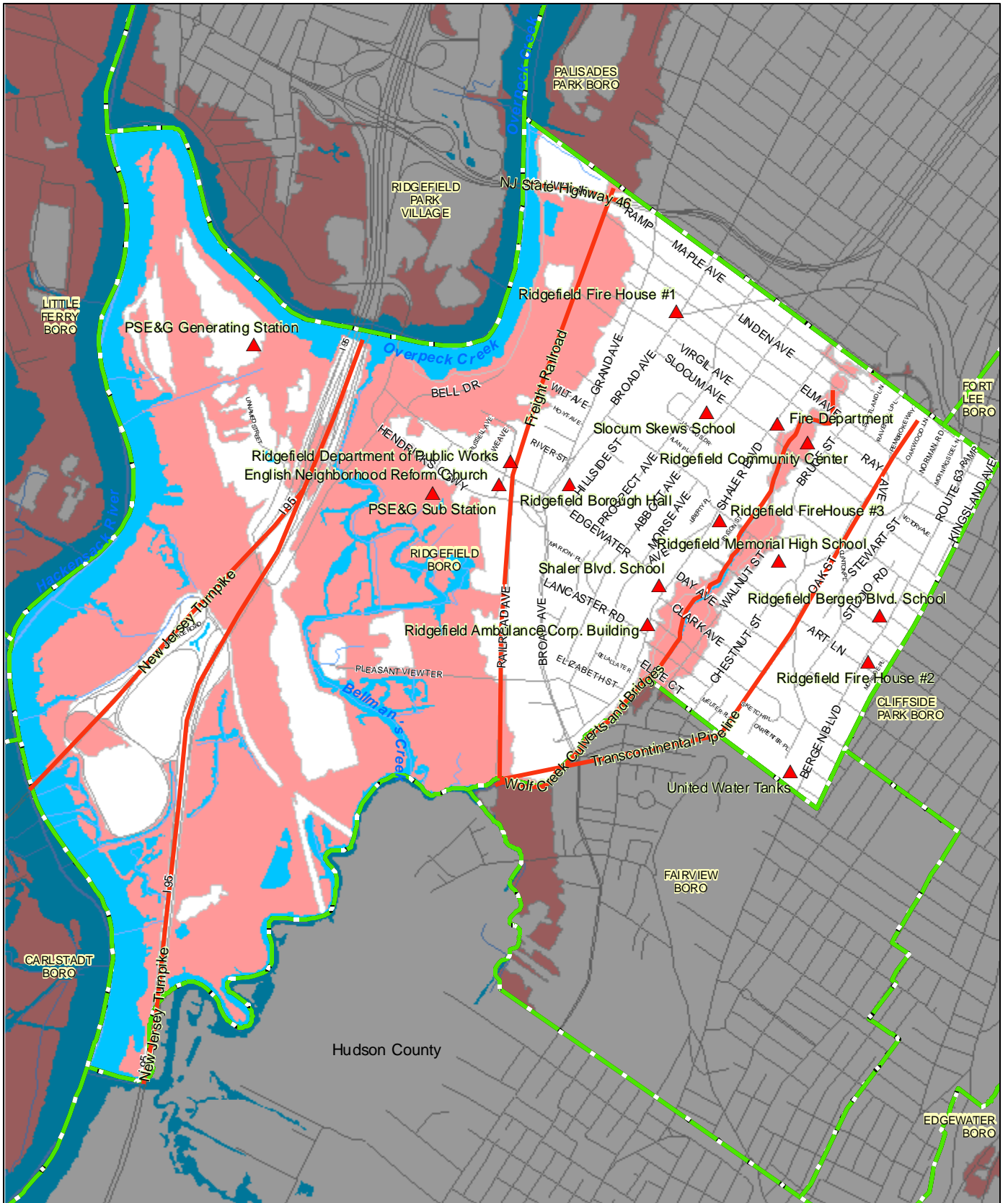
New Jersey Meadowlands Commission
CMVRO-14657-14-232GARCH145171 JTC



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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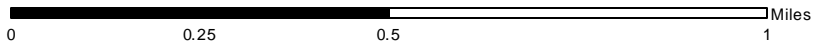
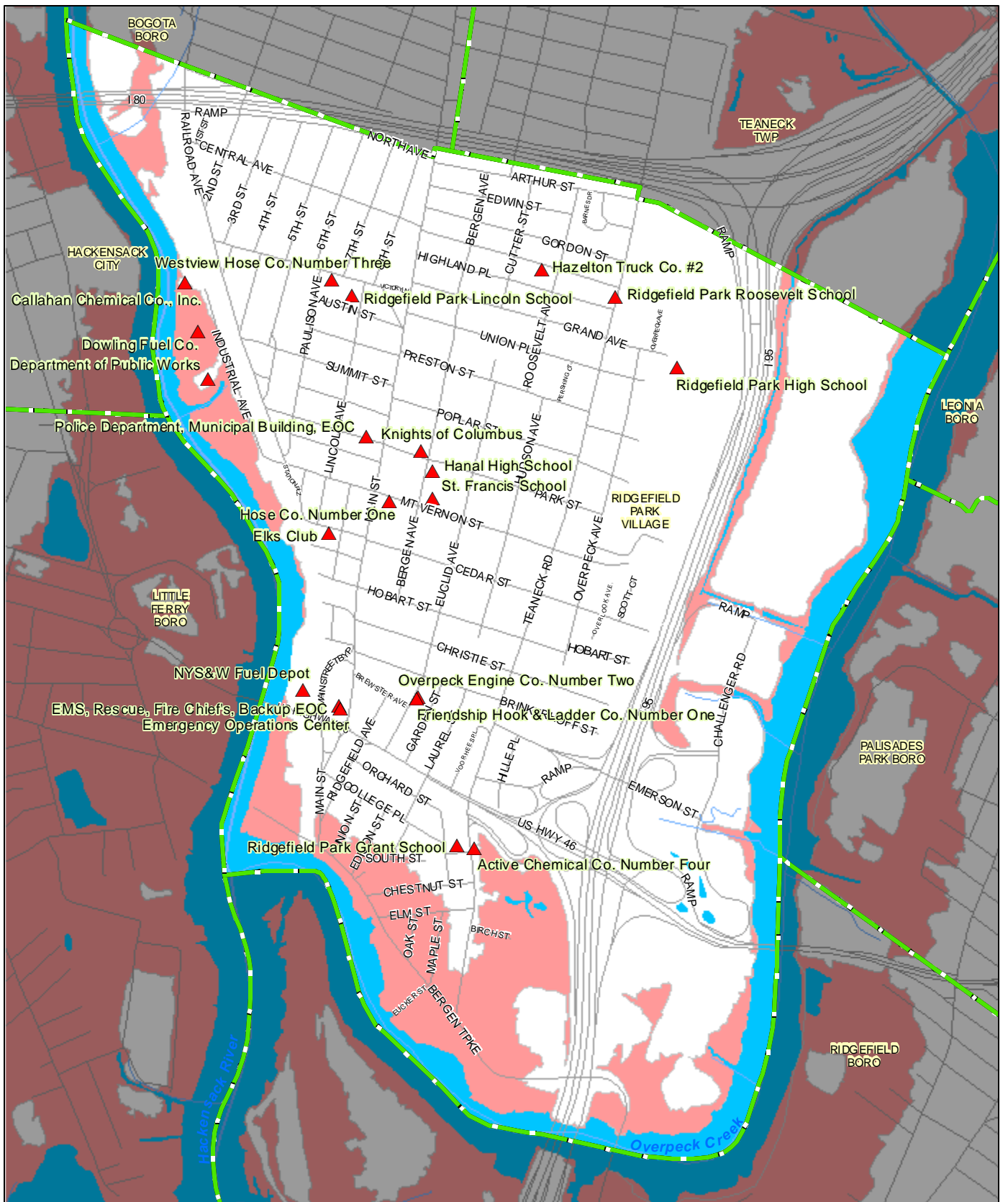
Ridgefield Borough Critical Facilities Bergen County, NJ



- ▲ Critical Facility
- Water Bodies
- Critical Feature
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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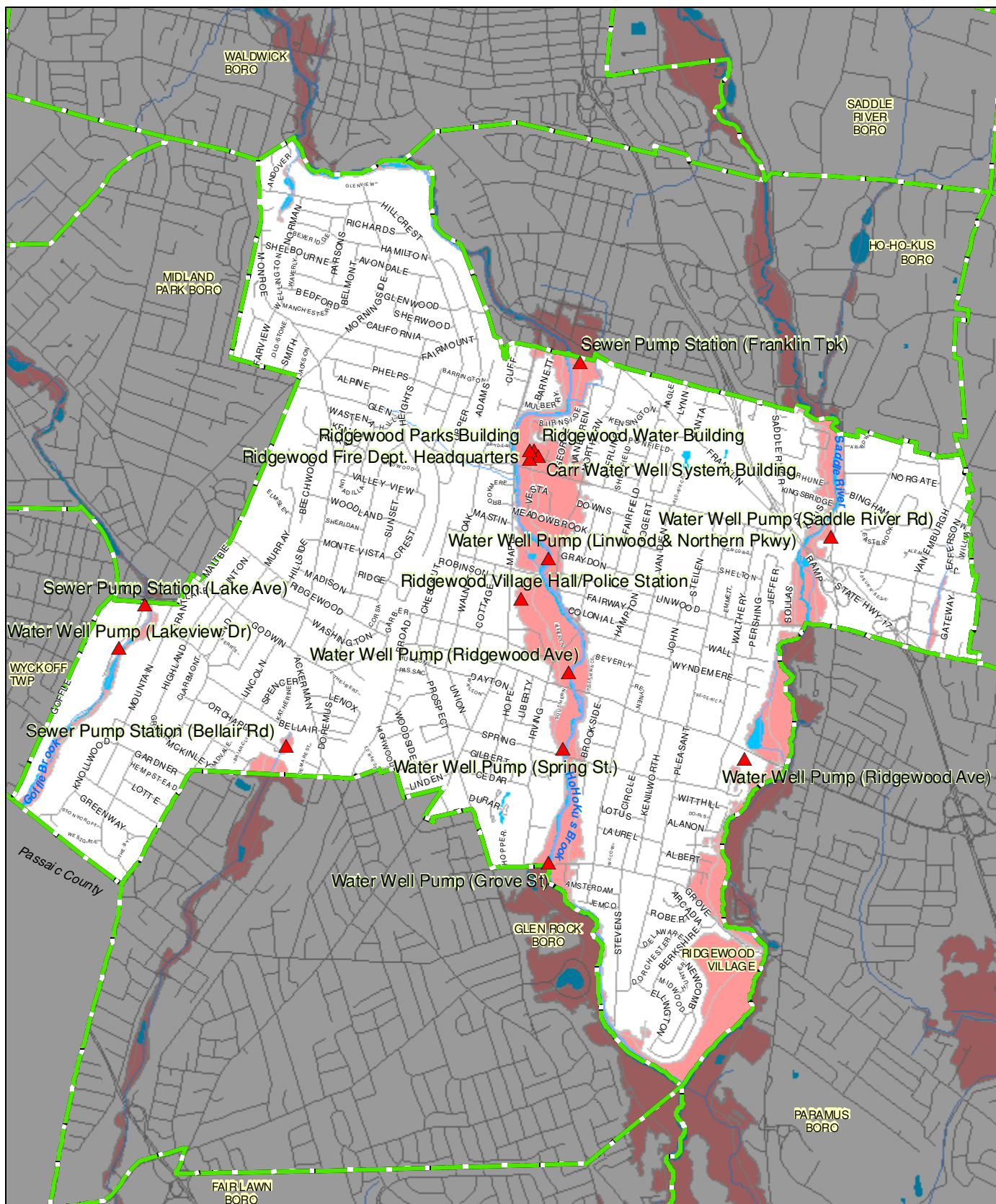
Ridgefield Park Village Critical Facilities Bergen County, NJ




- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Ridgewood Village Critical Facilities Bergen County, NJ



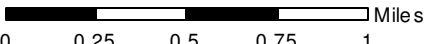


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New Jersey Meadowlands Commission
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0 0.25 0.5 0.75 1 Miles



▲ Critical Facility

■ Water Bodies

▭ Municipal Boundary

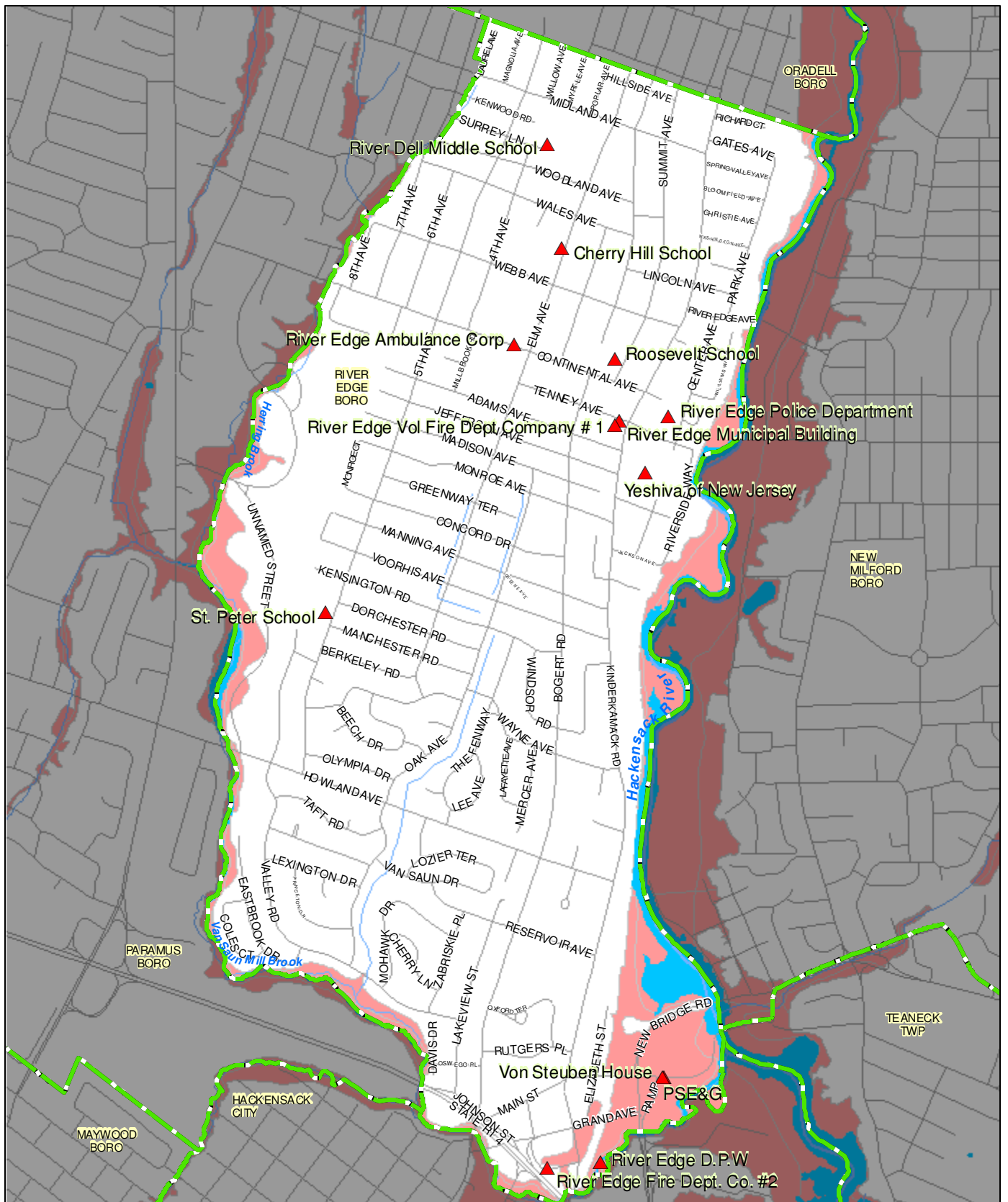
— Roadway

— Rivers, Streams

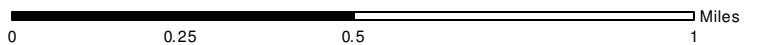
■ 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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River Edge Borough Critical Facilities Bergen County, NJ



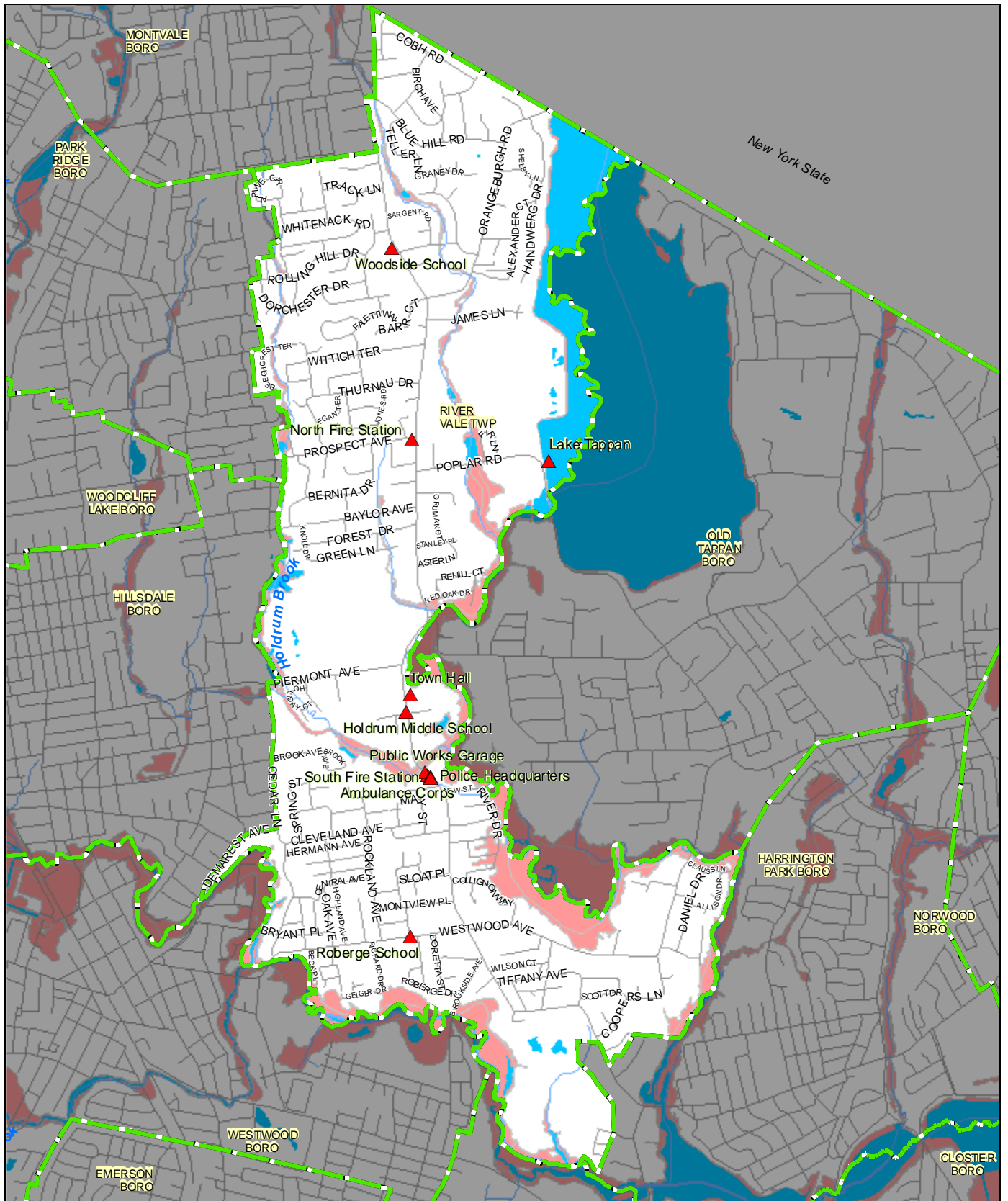
New Jersey Meadowlands Commission
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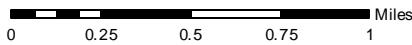
- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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River Vale Borough Critical Facilities Bergen County, NJ



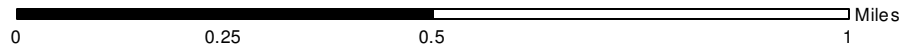
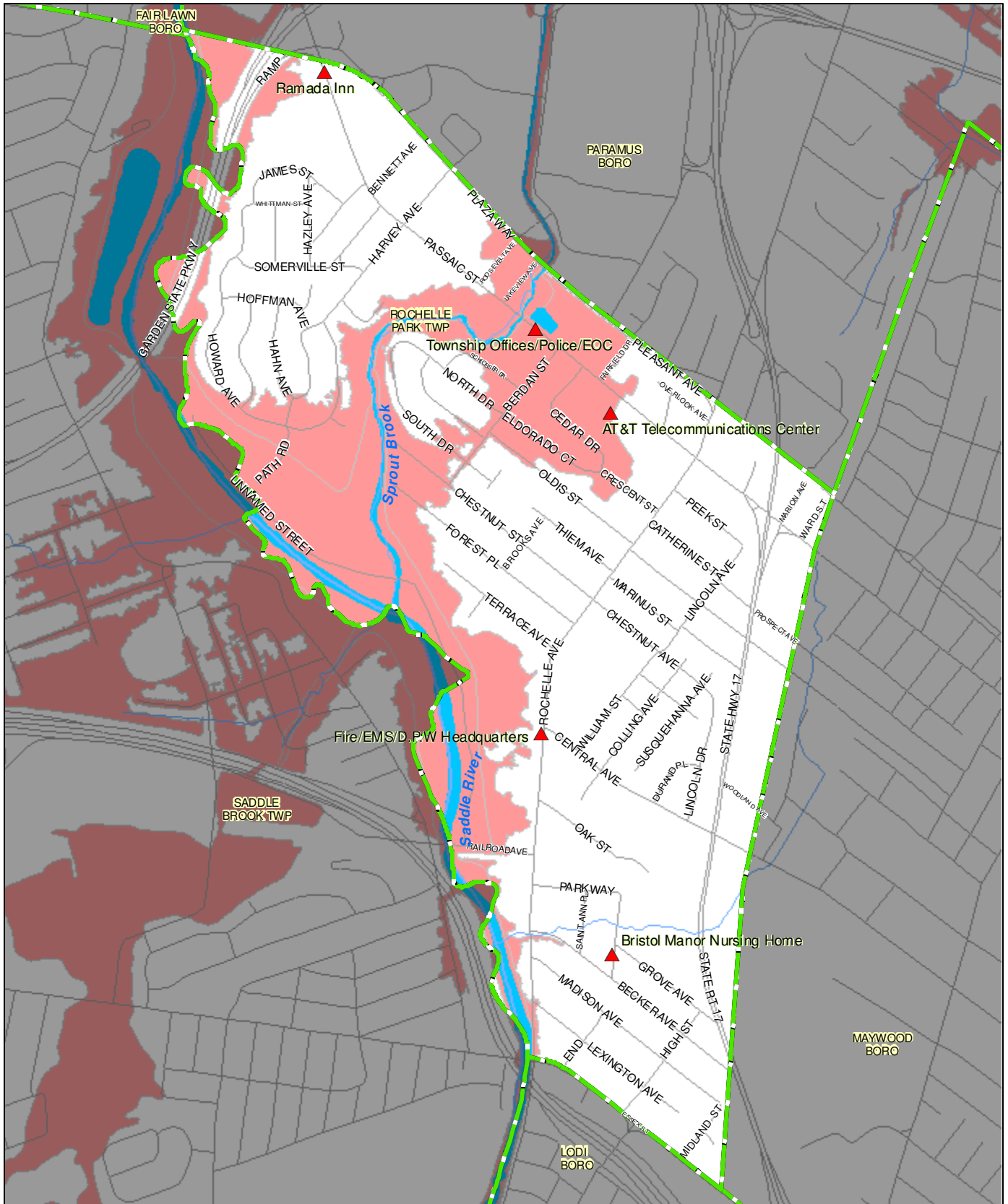
New Jersey Meadowlands Commission
 20170116MPCAL 133CARCH 1431171E



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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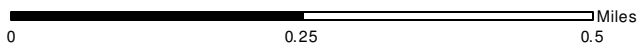
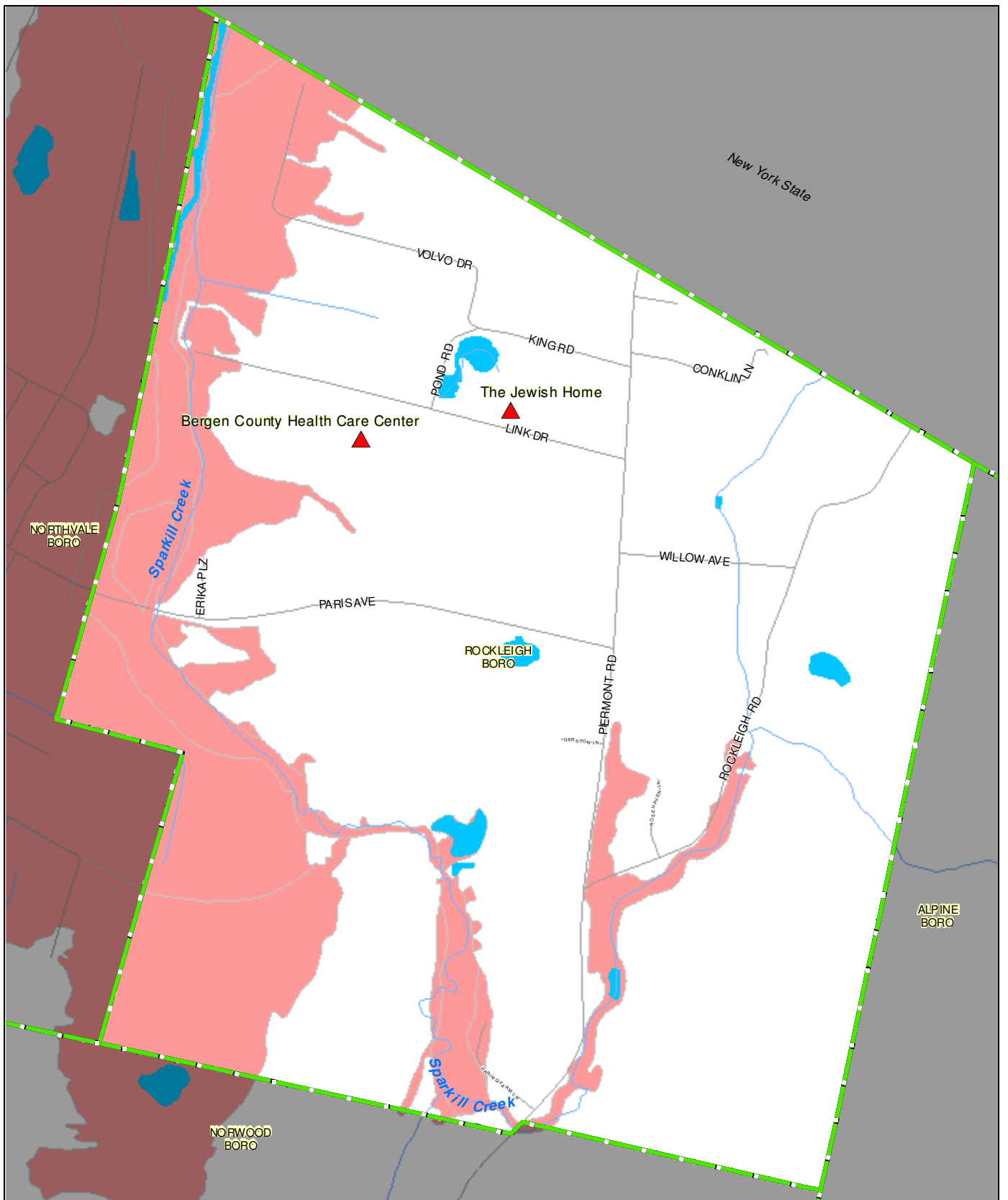
Rochelle Park Township Critical Facilities Bergen County, NJ



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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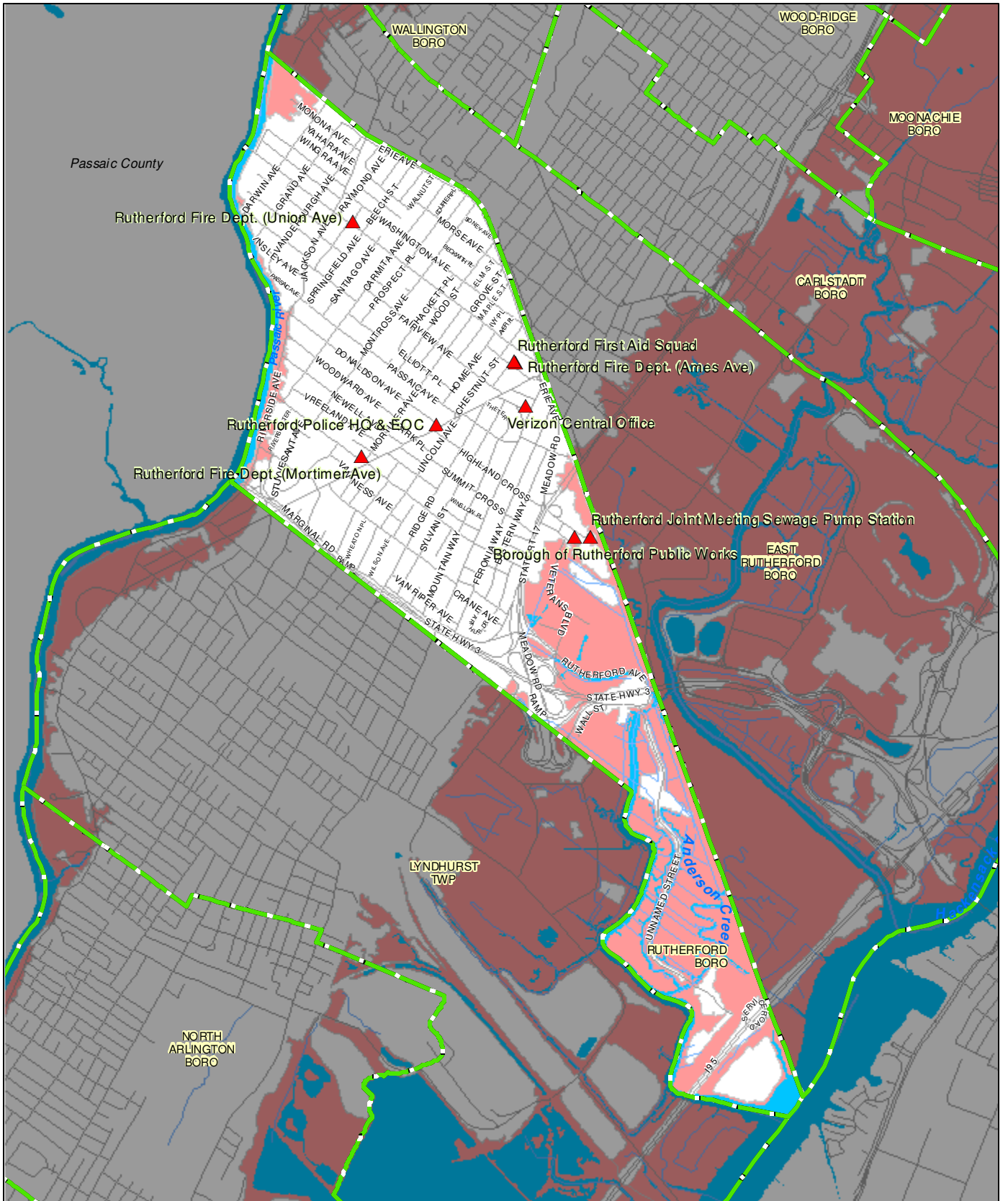
Rockleigh Borough Critical Facilities Bergen County, NJ



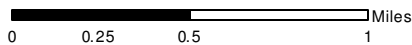
- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Rutherford Borough Critical Facilities Bergen County, NJ



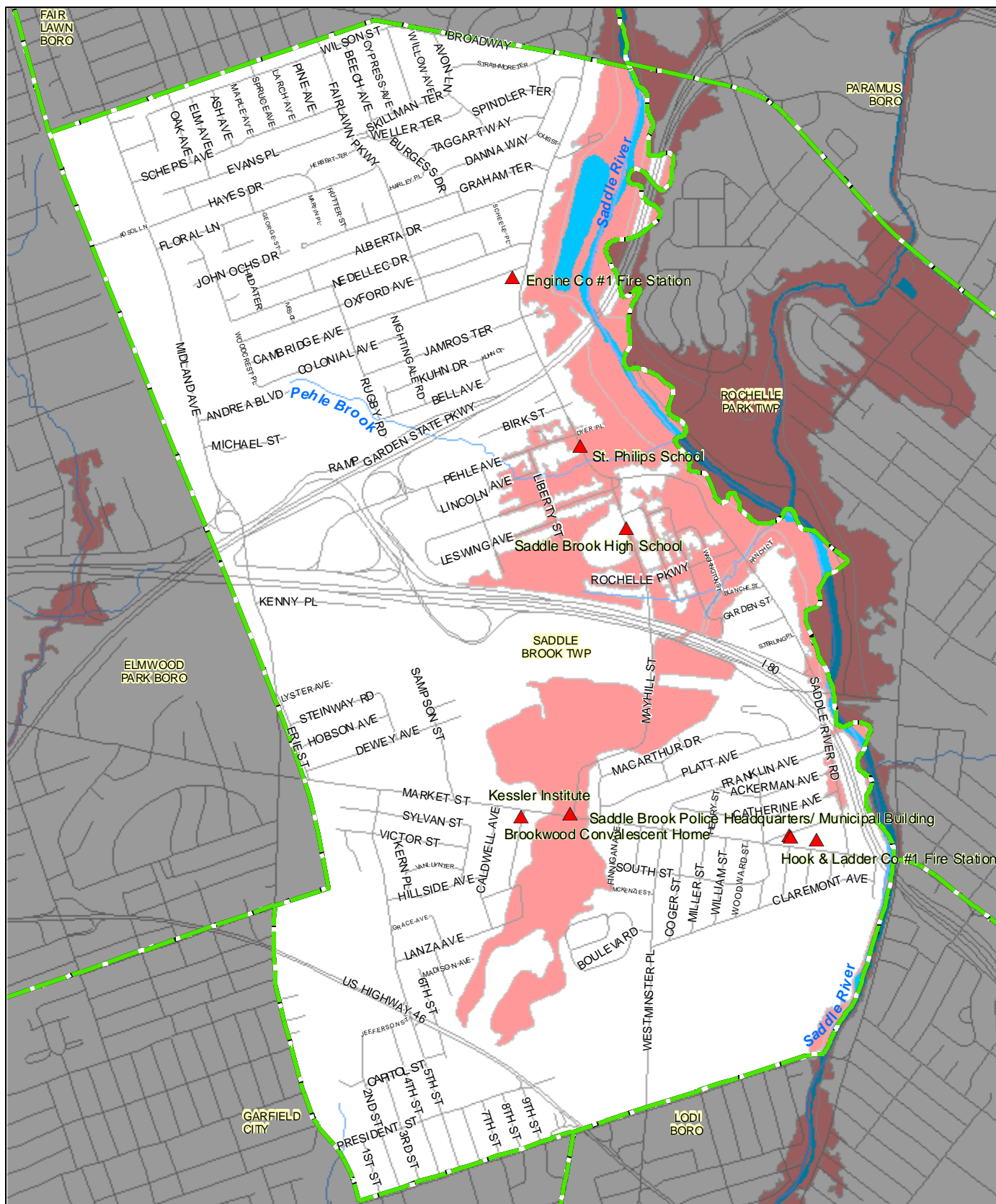
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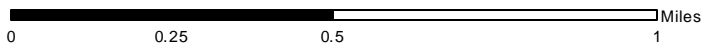
- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Saddle Brook Township Critical Facilities Bergen County, NJ



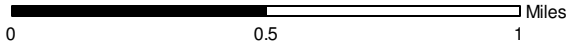
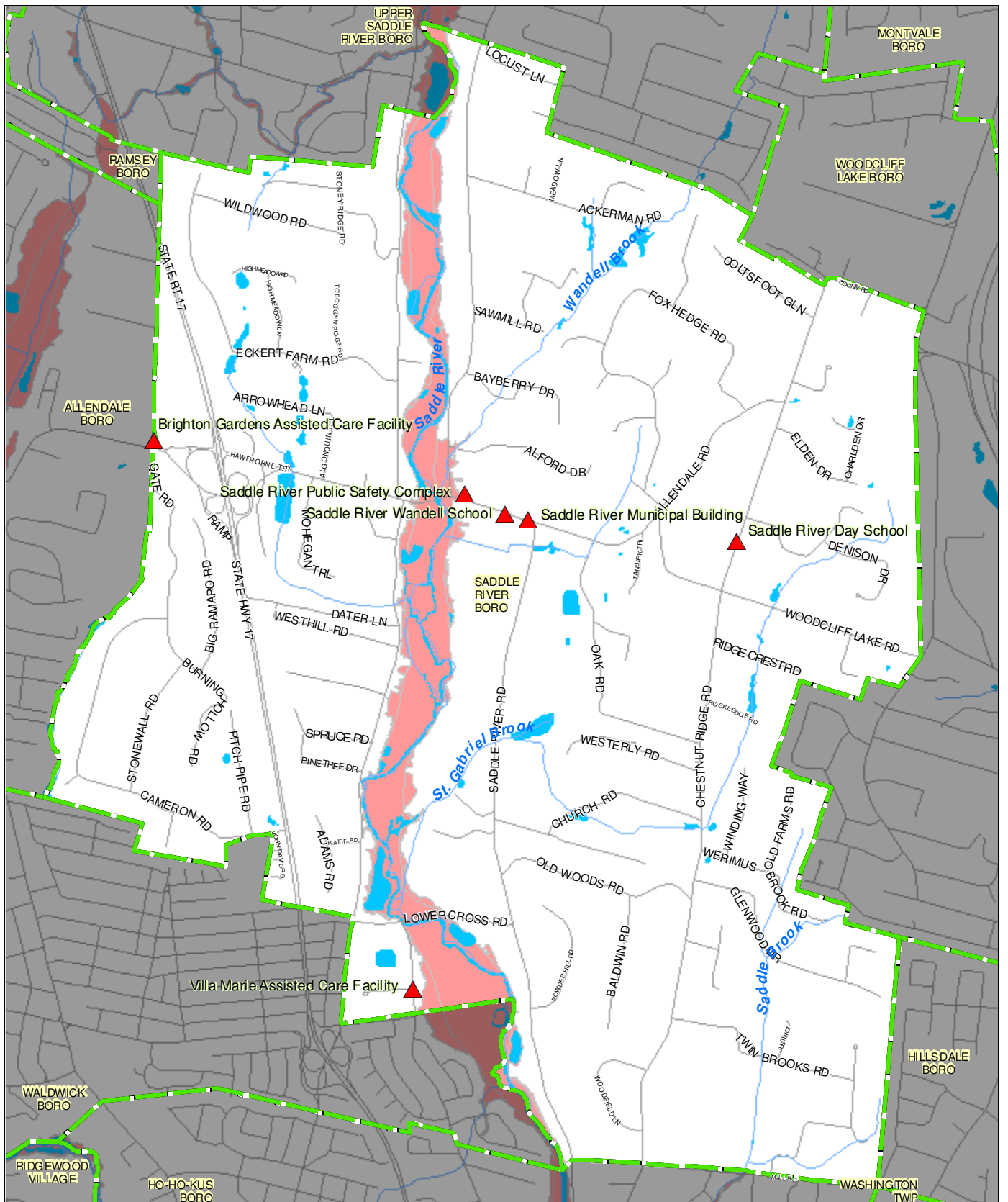
New Jersey Meadowlands Commission
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- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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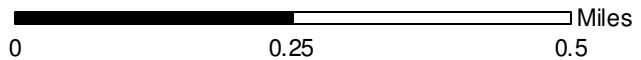
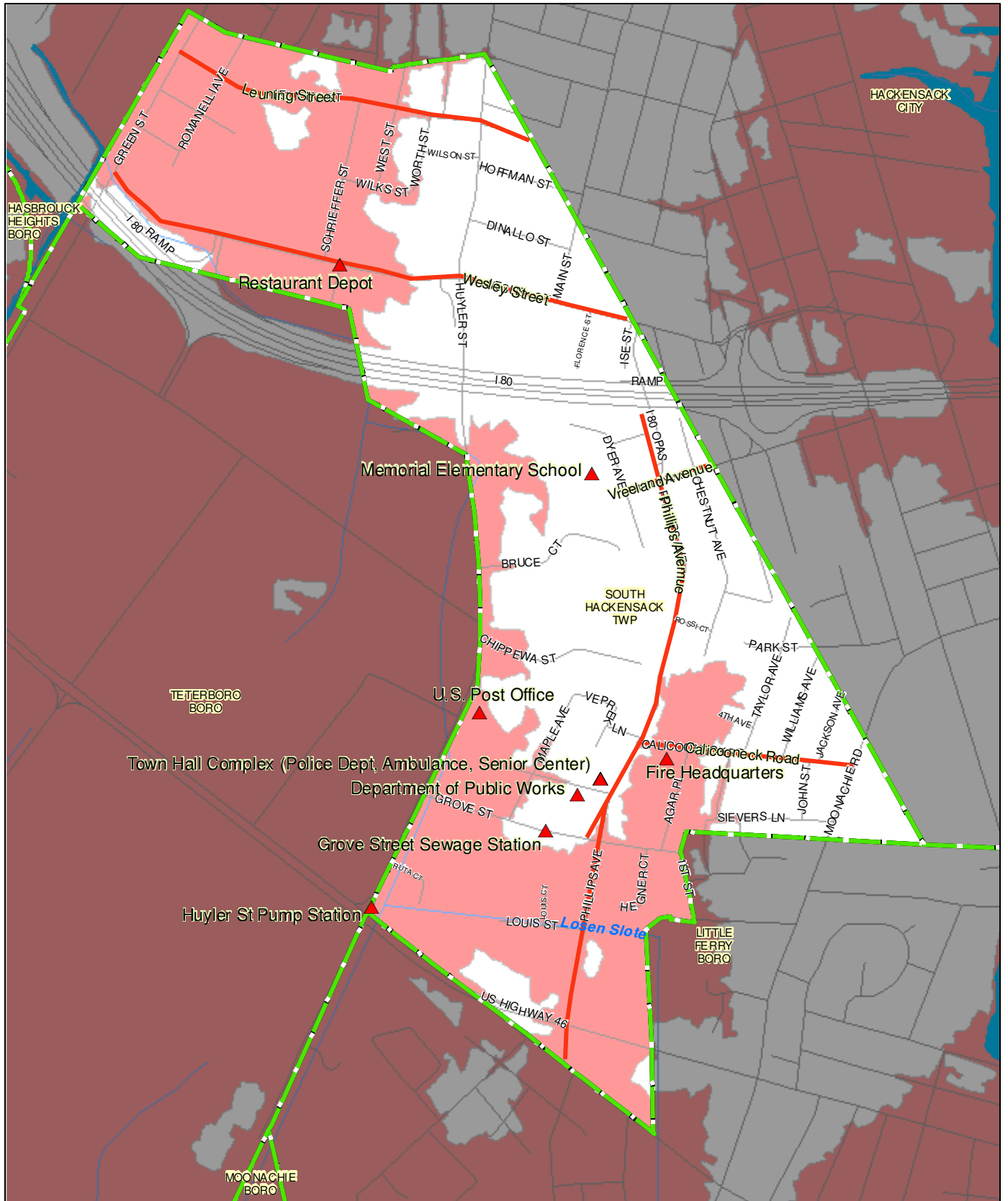
Saddle River Borough Critical Facilities Bergen County, NJ



- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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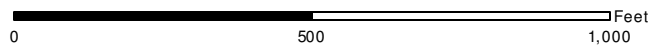
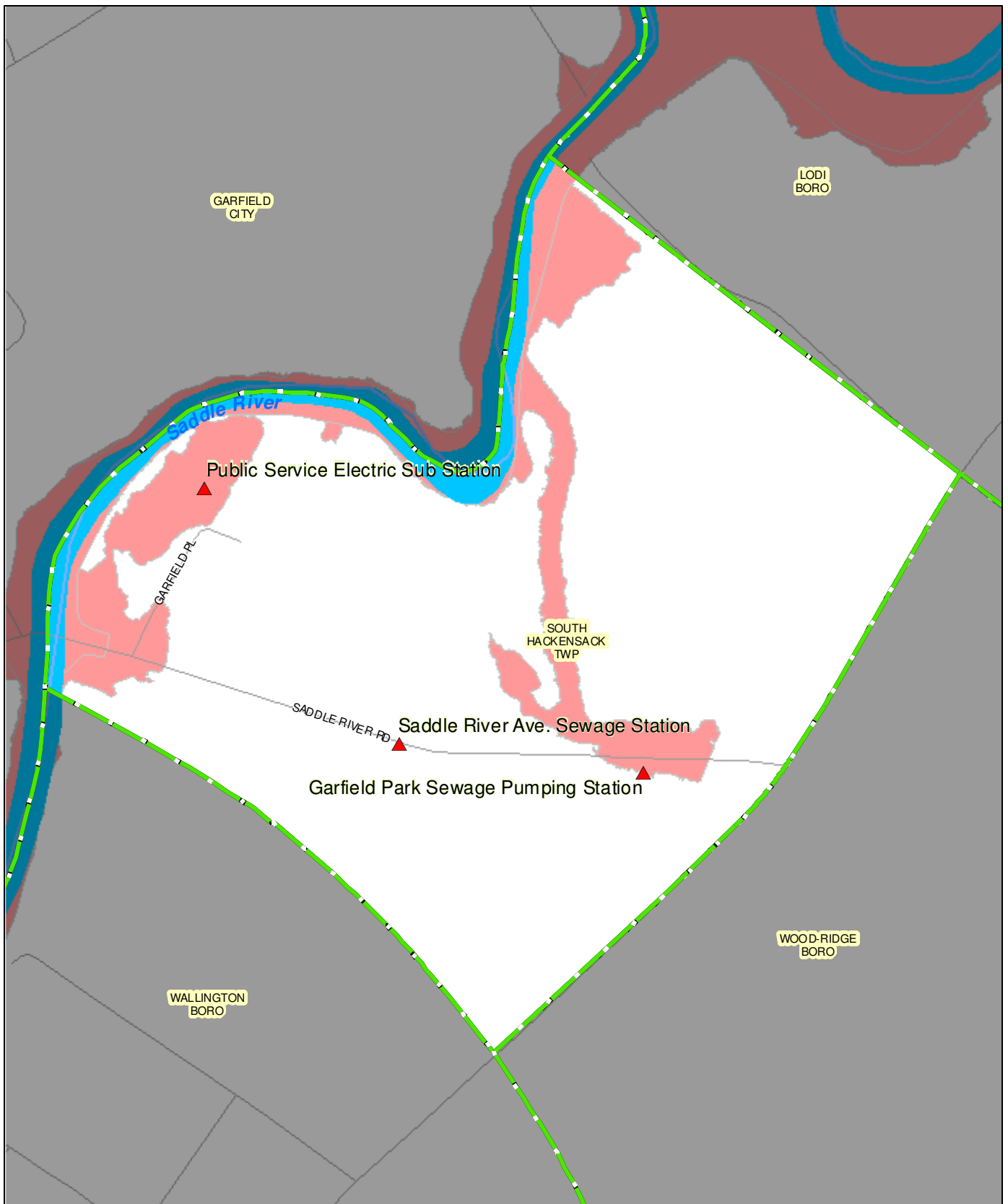
South Hackensack Township Critical Facilities Bergen County, NJ



- ▲ Critical Facility
- Water Bodies
- Critical Feature
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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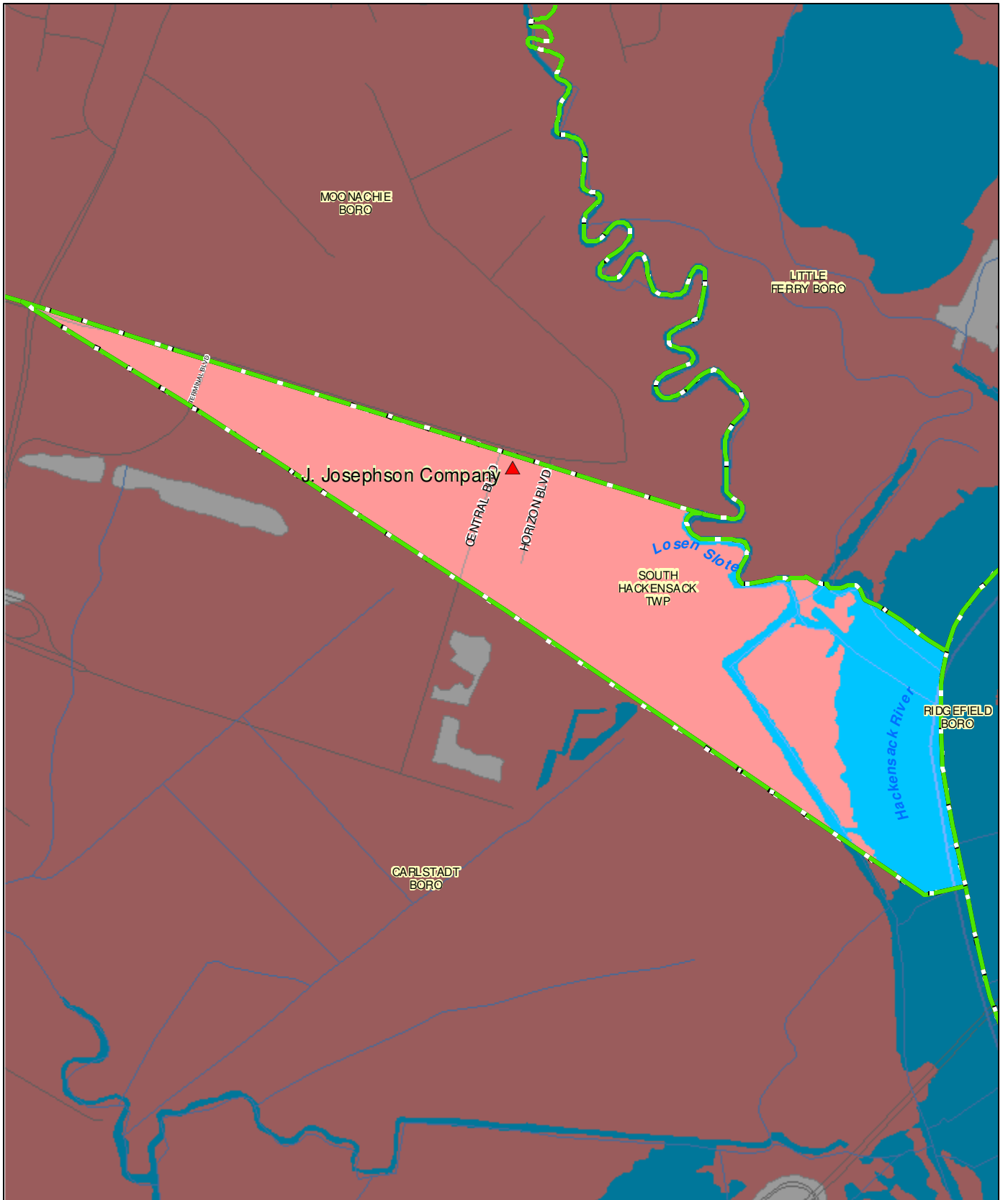
South Hackensack Township Critical Facilities Bergen County, NJ



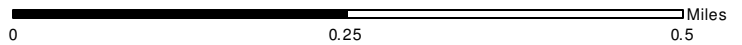
- Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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South Hackensack Township Critical Facilities Bergen County, NJ



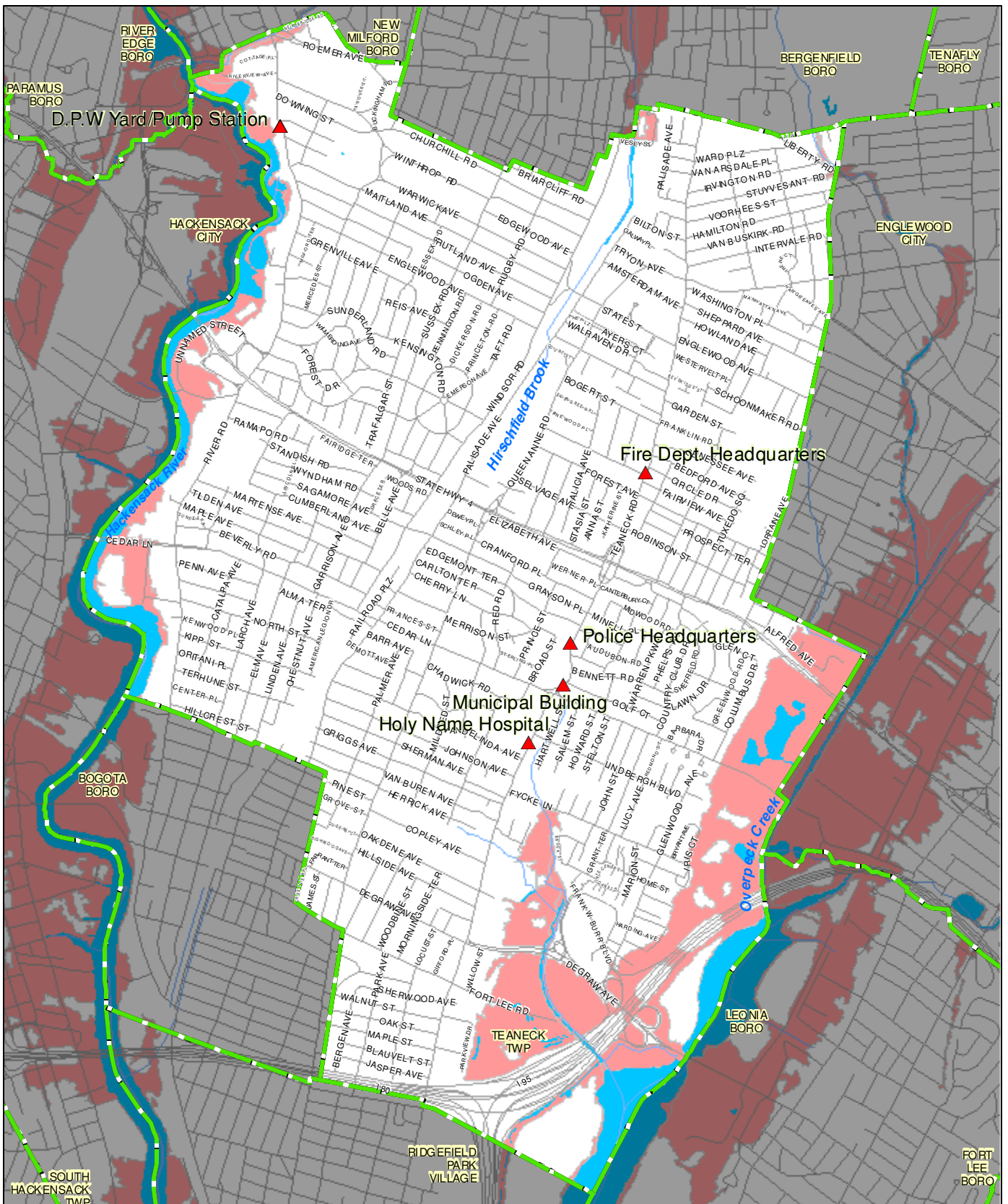
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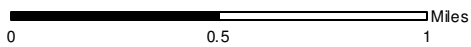
- | | |
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| Critical Facility | Roadway |
| Water Bodies | Rivers, Streams |
| Municipal Boundary | 100 Year Flood Zone
(FEMA Prelim FIRM 2014) |

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Teaneck Township Critical Facilities Bergen County, NJ



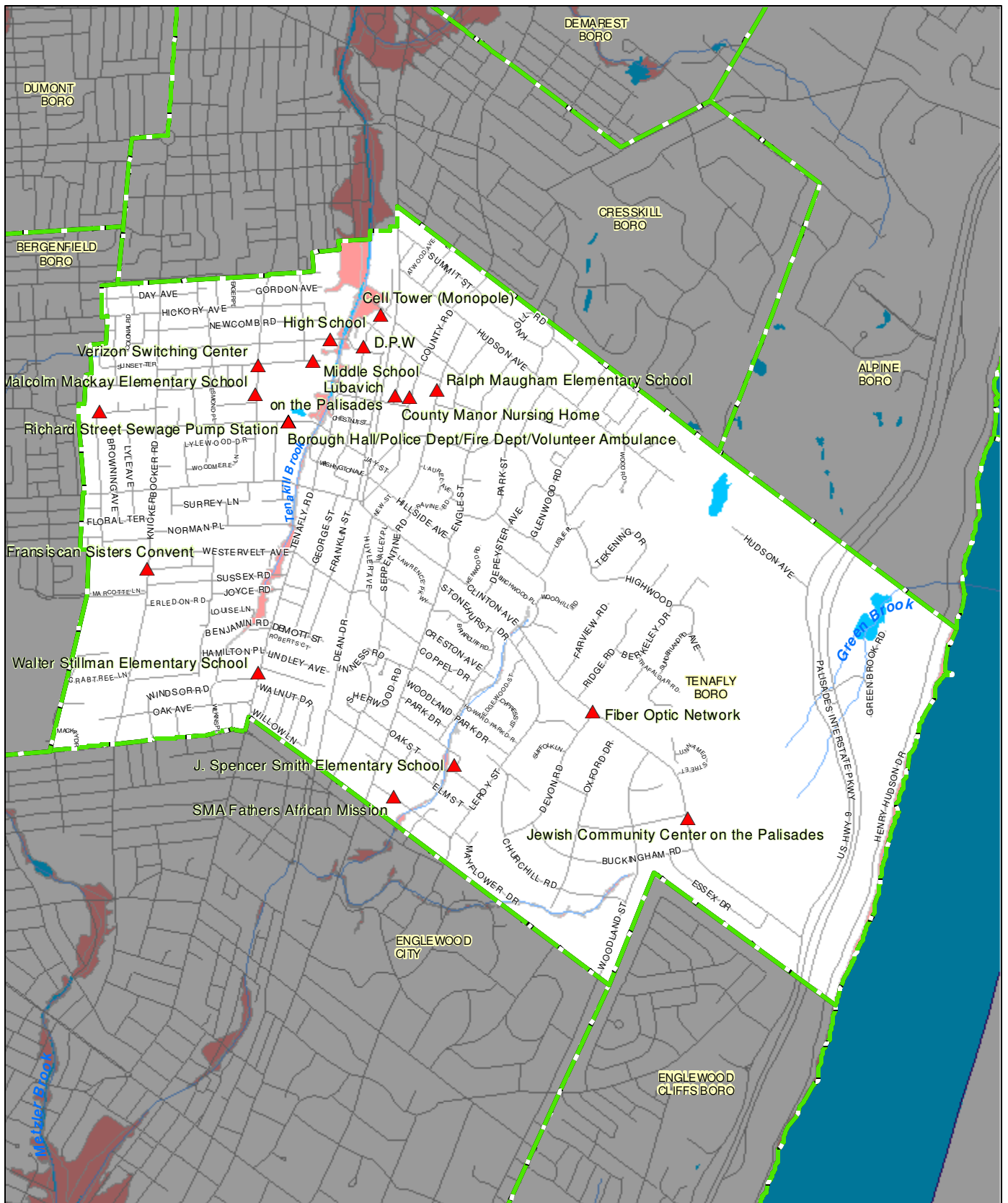
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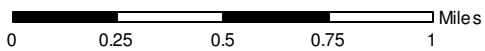
- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRN 2014)

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Tenafly Borough Critical Facilities Bergen County, NJ



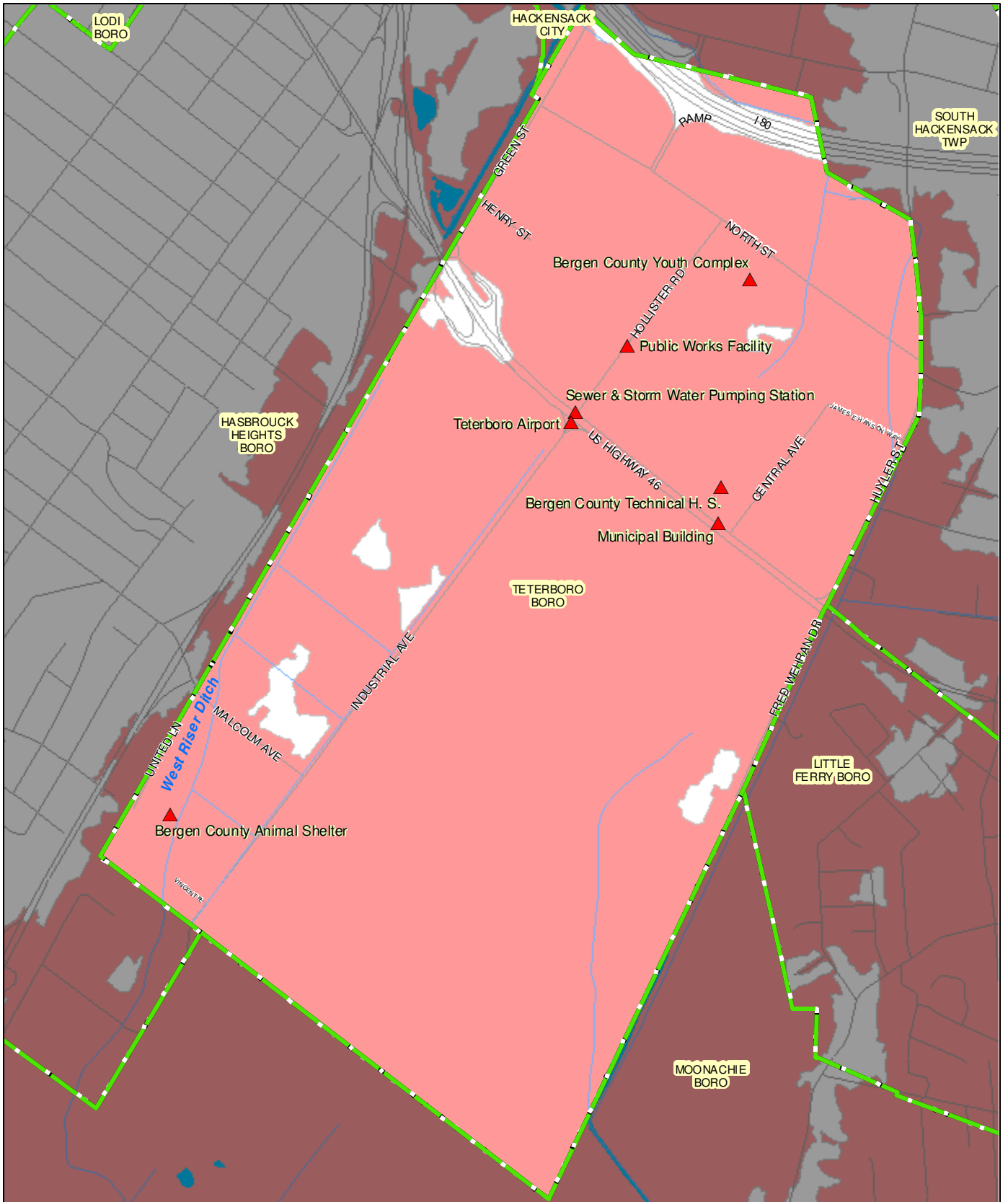
New Jersey Meadowlands Commission
ENVIRONMENTAL SCIENCE CENTER 14517 JTC



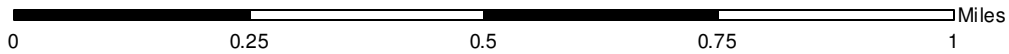
- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)







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Teterboro Borough Critical Facilities Bergen County, NJ



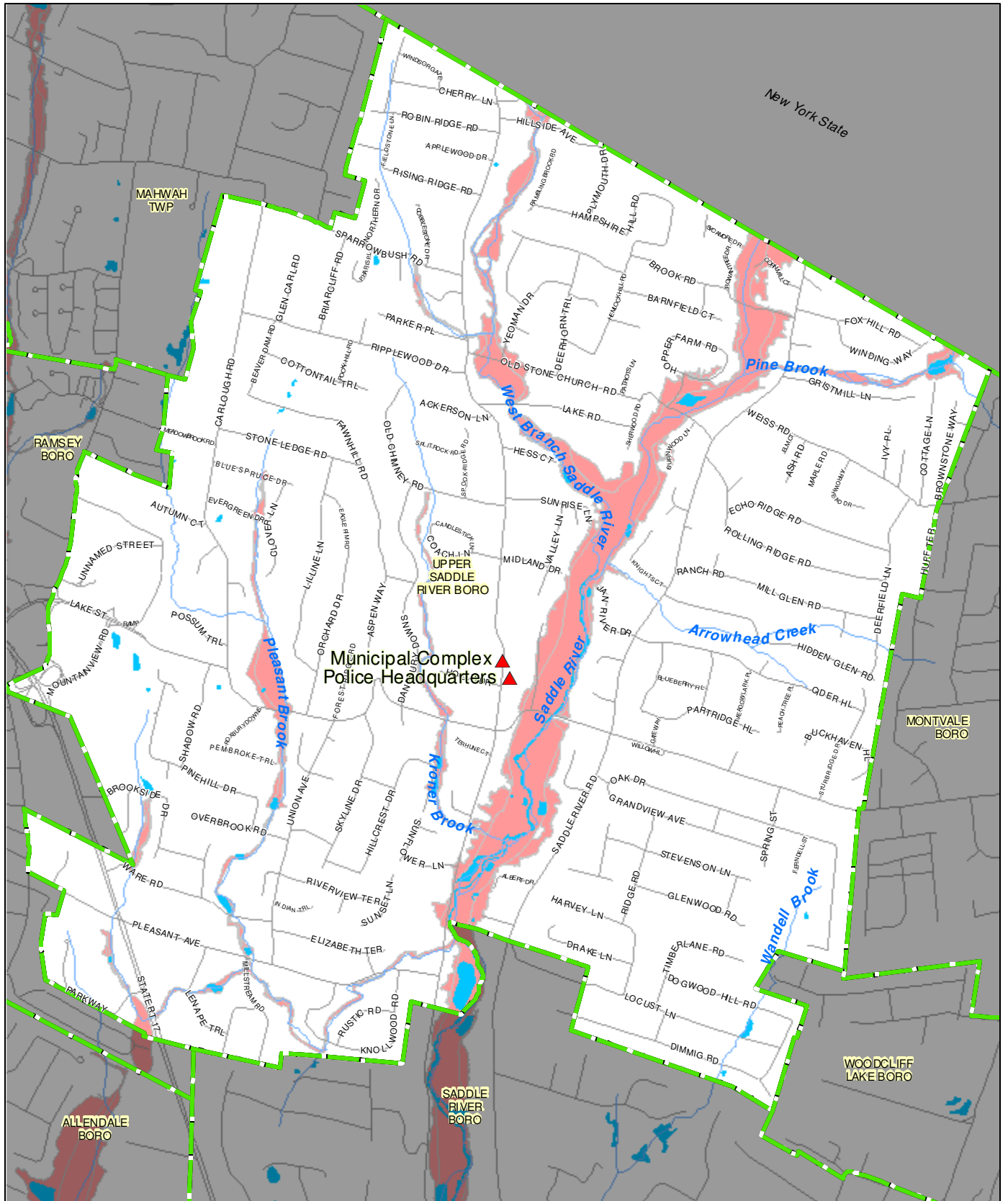
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|--|---|
|  Critical Facility |  Roadway |
|  Water Bodies |  Rivers, Streams |
|  Municipal Boundary |  100 Year Flood Zone (FEMA Prelim FIRM 2014) |

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Upper Saddle River Borough Critical Facilities Bergen County, NJ



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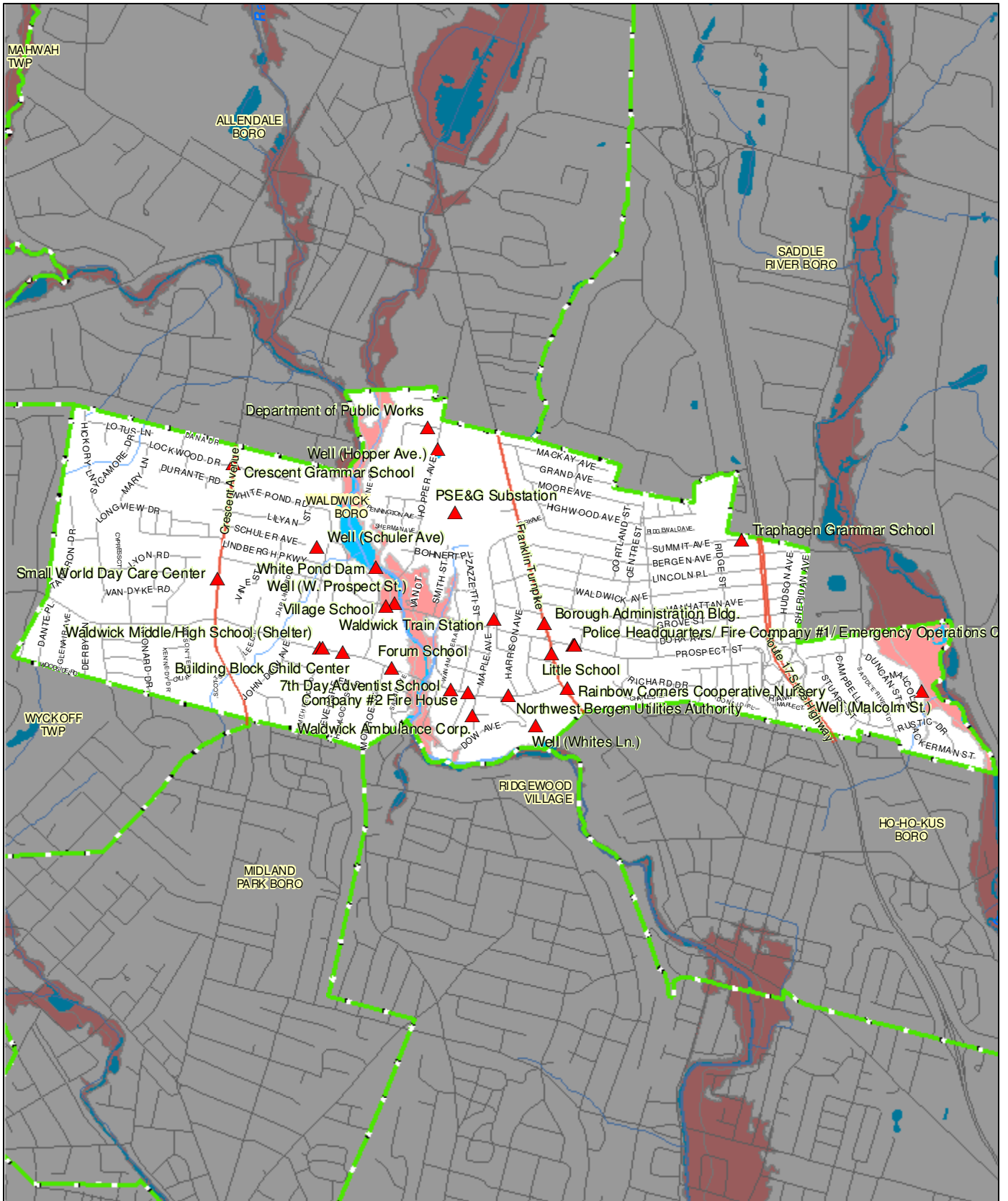



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- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)


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Waldwick Borough Critical Facilities Bergen County, NJ

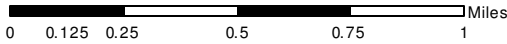





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 Critical Facility

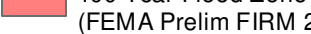
 Water Bodies

 Critical Feature

 Municipal Boundary

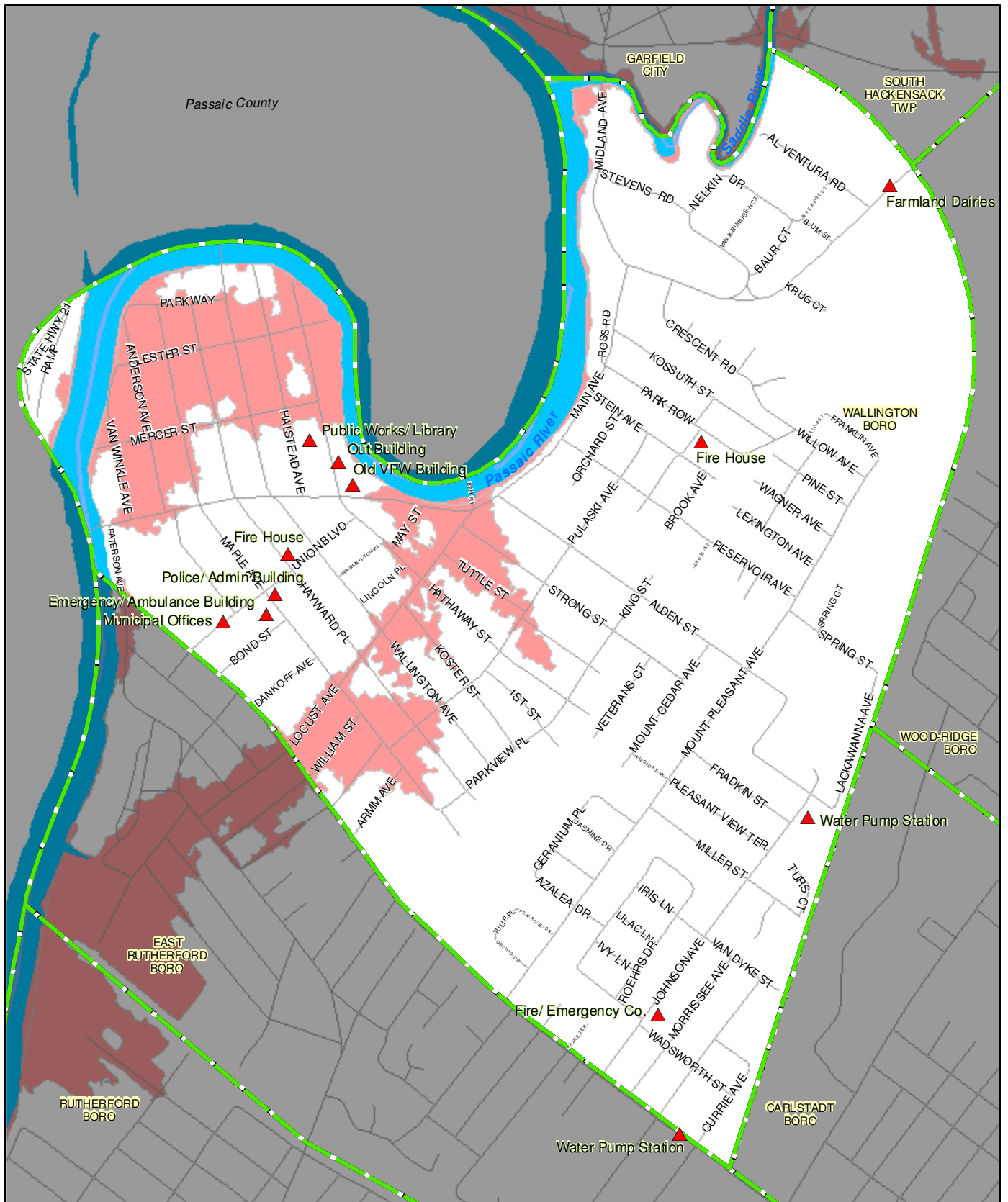
 Roadway

 Rivers, Streams

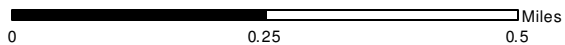
 100 Year Flood Zone
(FEMA Prelim FIRM 2014)

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Wallington Borough Critical Facilities Bergen County, NJ



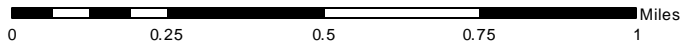
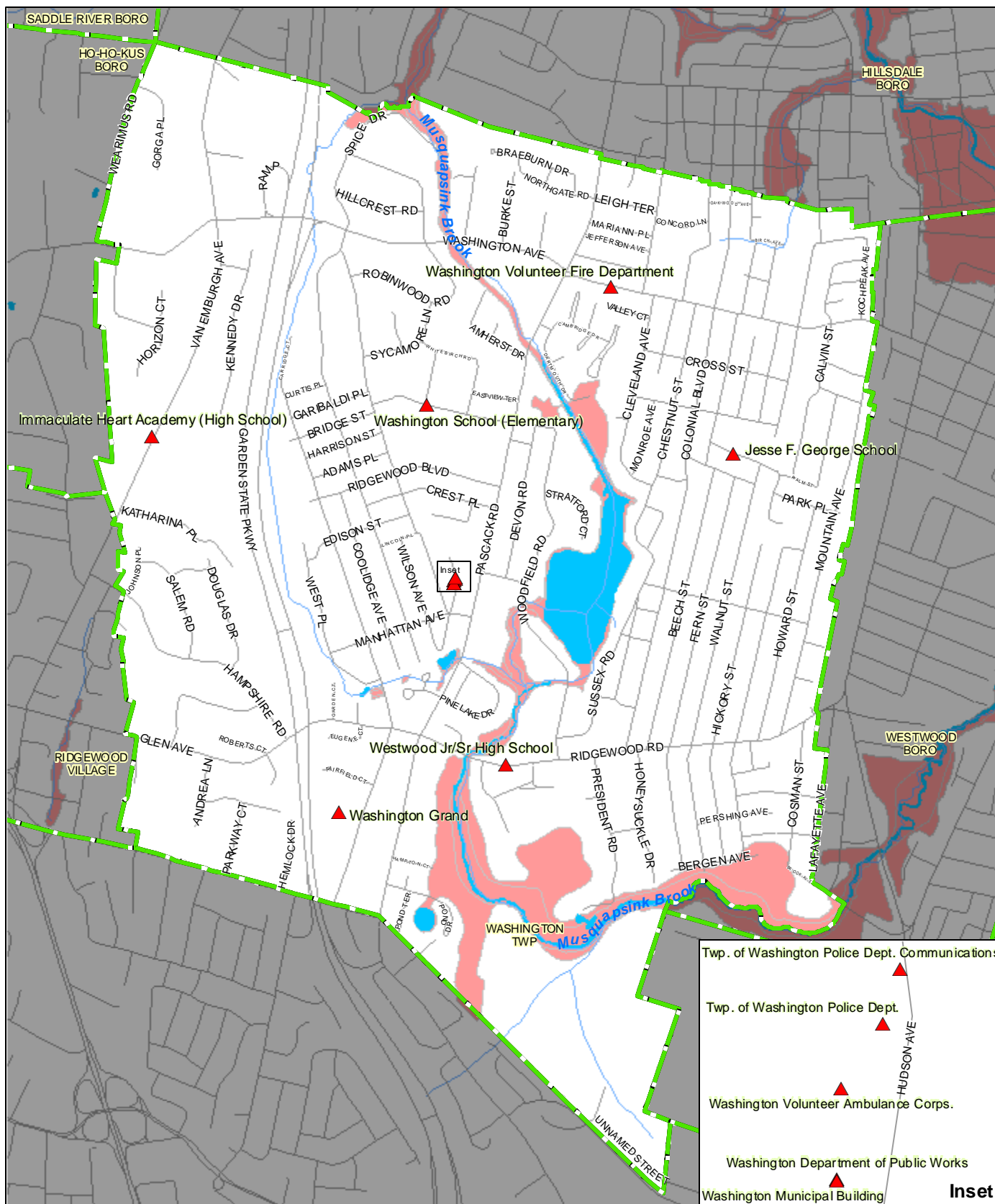
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- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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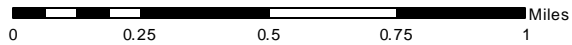
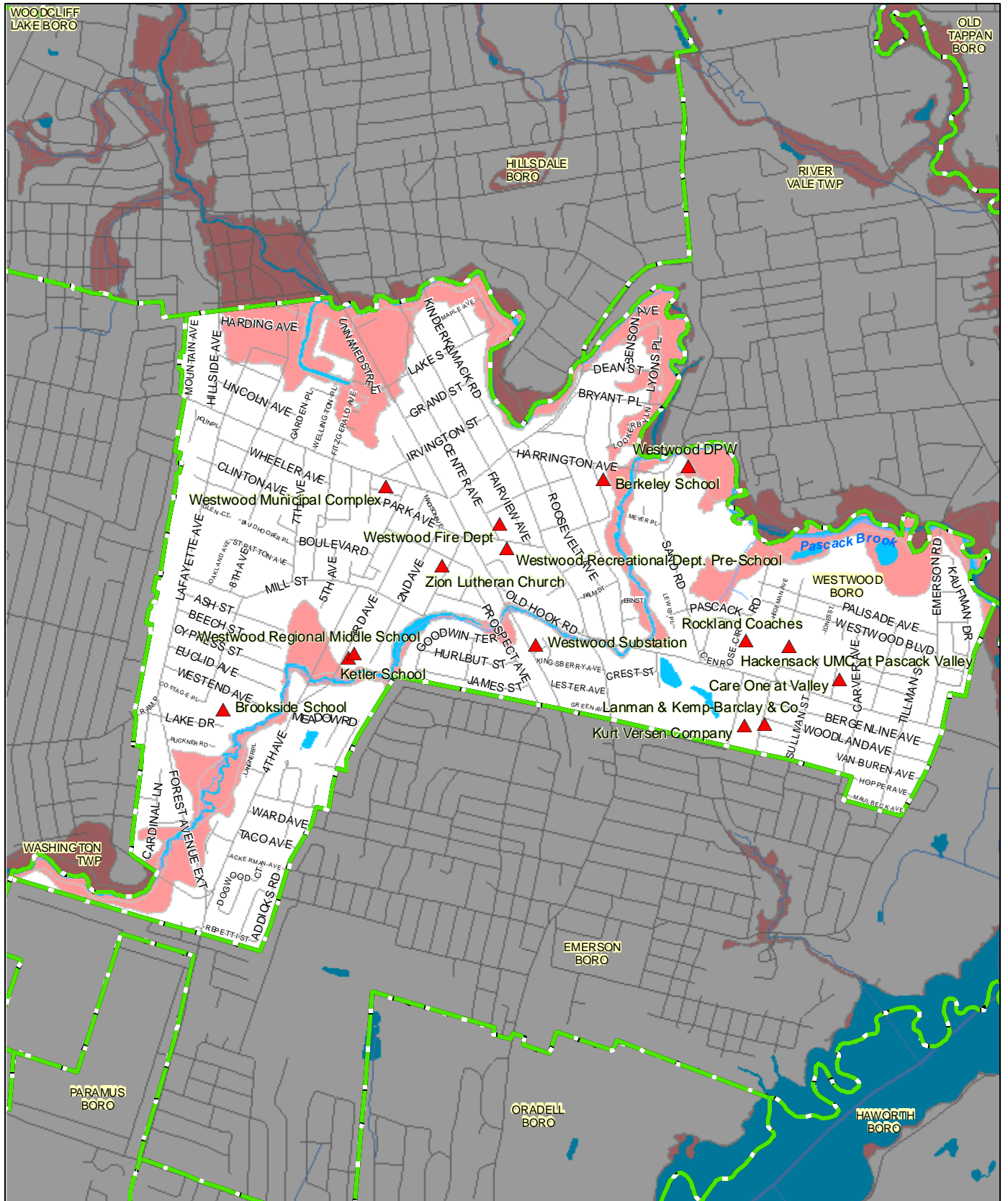
Washington Township Critical Facilities Bergen County, NJ



- ▲ Critical Facility
- Roadway
- Water Bodies
- Rivers, Streams
- Municipal Boundary
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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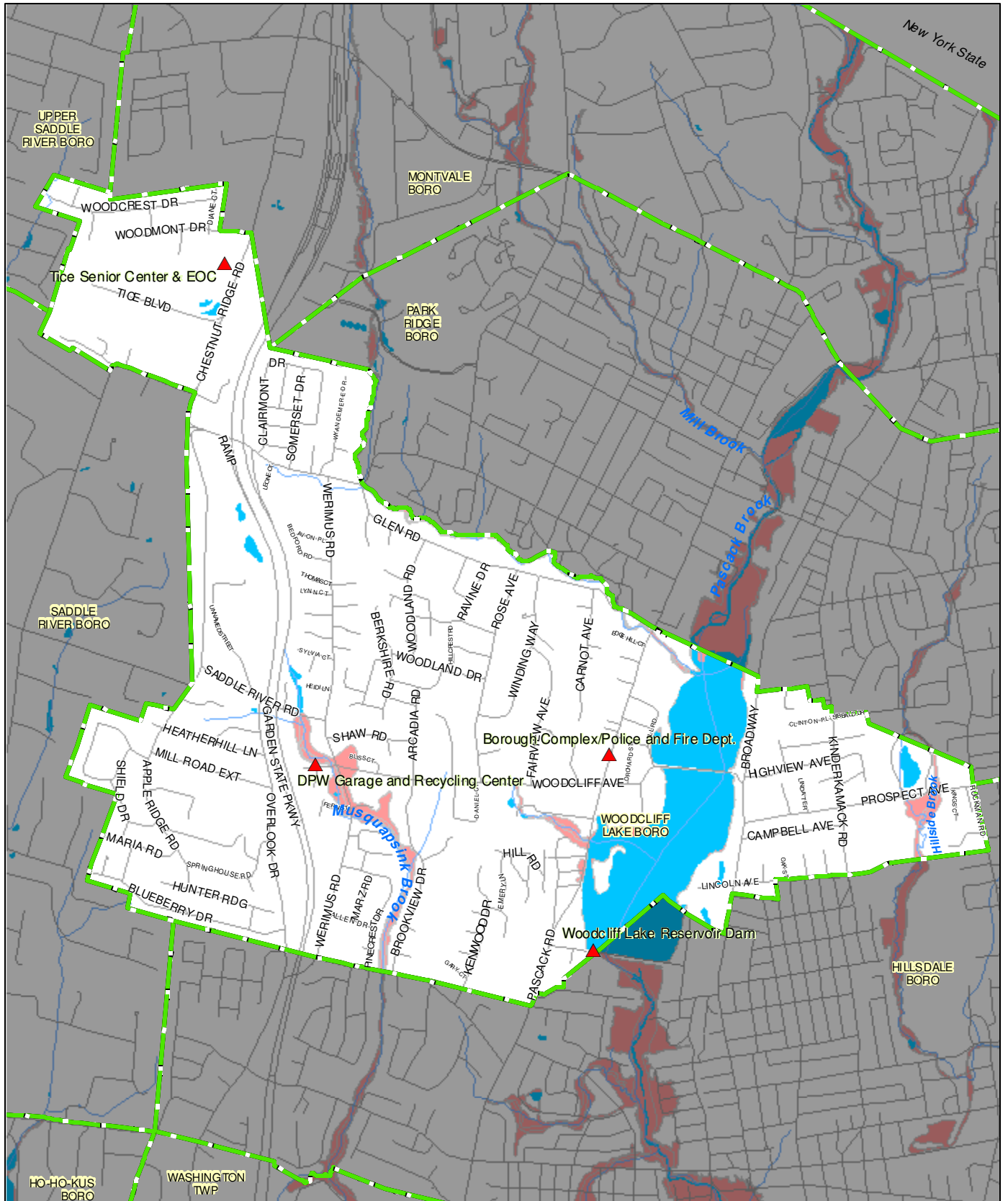
Westwood Borough Critical Facilities Bergen County, NJ




- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)


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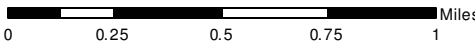
Woodcliff Lake Borough Critical Facilities Bergen County, NJ





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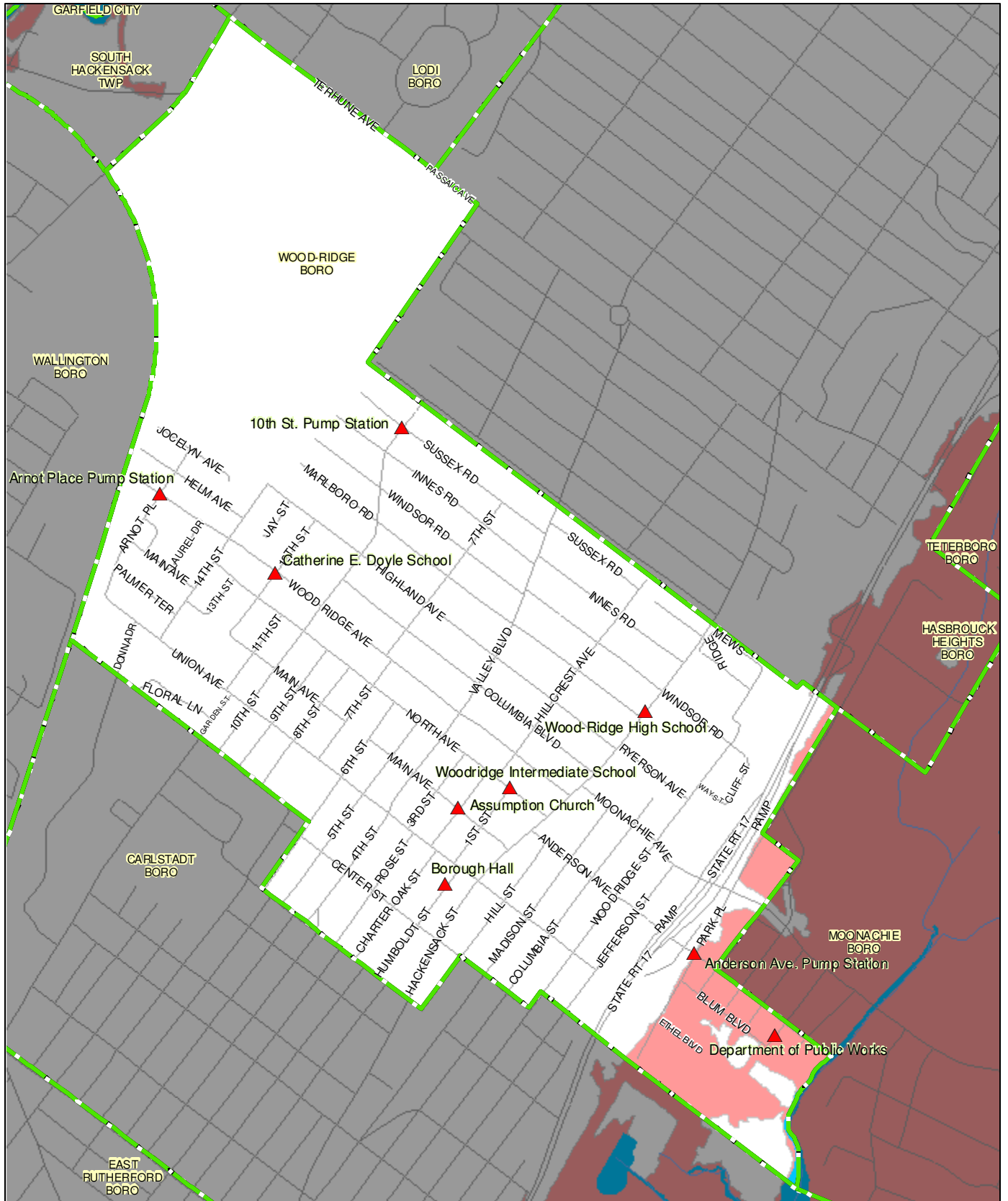


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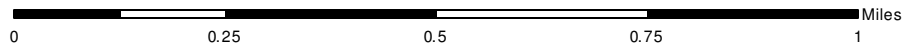
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Wood-Ridge Borough Critical Facilities Bergen County, NJ



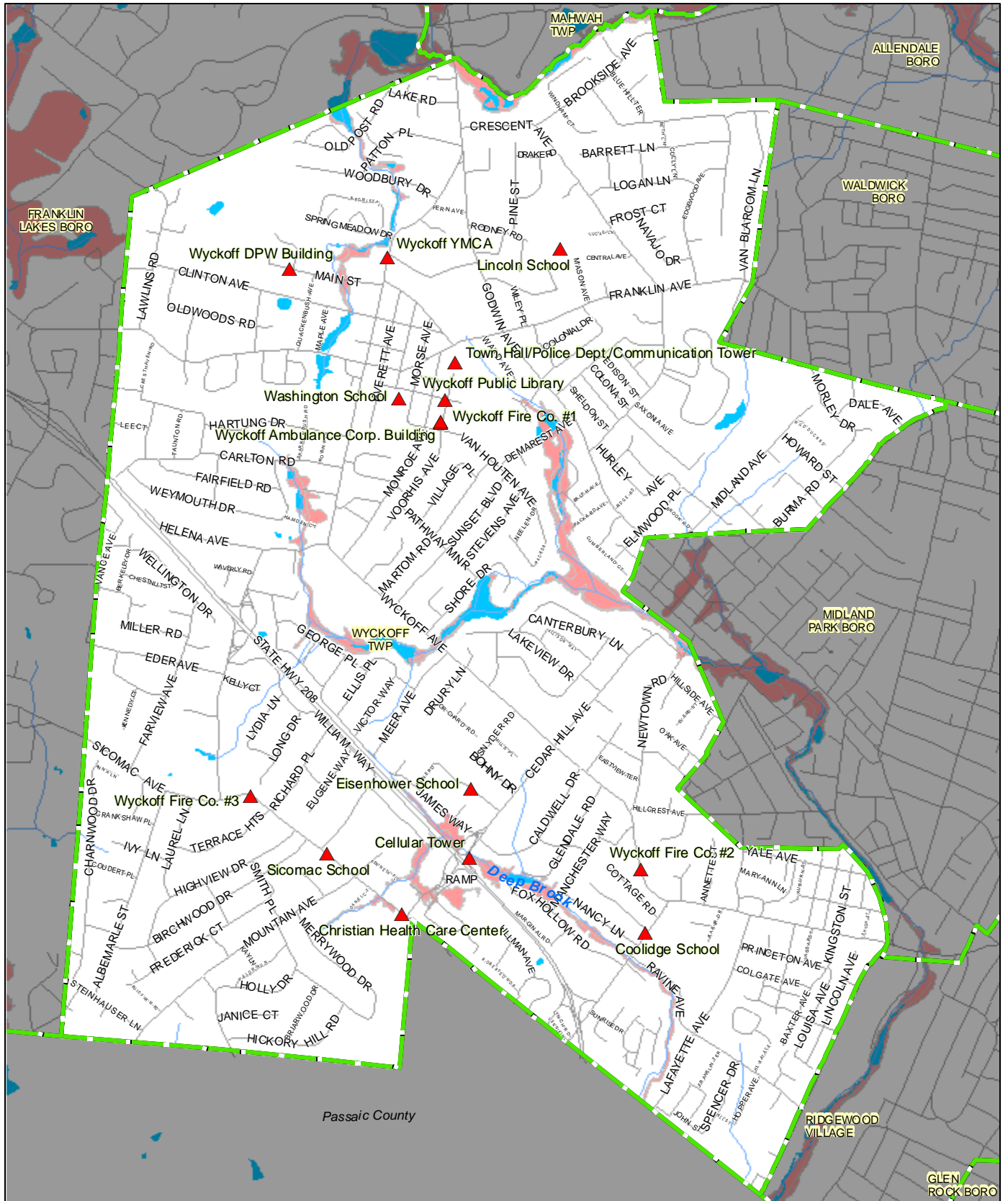
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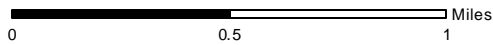
- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Wyckoff Township Critical Facilities Bergen County, NJ



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- ▲ Critical Facility
- Water Bodies
- Municipal Boundary
- Roadway
- Rivers, Streams
- 100 Year Flood Zone (FEMA Prelim FIRM 2014)

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Appendix D: Bergen County Critical Facility Table

Assessing Vulnerability: Identifying Critical Facilities

This Plan contains extensive information regarding the critical facilities identified by the 70 Bergen County municipalities. A detailed discussion of all critical facilities in each municipality, and to the degree to which each is vulnerable to the natural hazards identified in this plan, is included in the Plan Appendices.

Identified critical facilities may include structures such as:

- municipal buildings;
- police and fire stations;
- rescue squads;
- emergency operation centers ;
- shelters;
- schools;
- hospitals;
- transportation systems;
- utilities (power plants, substations, power lines, gas lines);
- oil facilities;
- hazardous material facilities;
- dams;
- communication networks;
- public works;
- detention centers;
- water supplies;
- wastewater facilities;
- roads and bridges;
- airports;
- rail terminals; and
- nursing/care centers.

Critical facility information was provided by individual municipal OEM Coordinators, as well as the Bergen County Office of Emergency Management and the Bergen County Prosecutor's Office. Certain hazards that affect Bergen County are universal, meaning that there is no separation of shared risk; each Bergen County municipality is equally as vulnerable to the occurrence of certain hazards. These universal hazards include high winds, drought, earthquake, and winter storm. Other hazards are geographic in nature, meaning that certain locations are more at risk to certain hazards. These hazards include flooding, storm surge, landslide and wildfire. The critical facilities that are vulnerable to these "geographic" hazards are detailed in the discussion of each hazard found in this section.

A description of all critical facilities and their vulnerability by municipality as well as maps identifying the critical facilities for each Bergen County municipality are included in **Appendix B** and **Appendix C**, respectively. **Appendix E** contains summary maps of the county that depict the critical facilities in the municipalities and their vulnerability to the various natural hazards described in this plan.

This Plan does not identify all existing structures within each municipality which may be vulnerable to the identified natural hazards. Additionally, it does not identify future buildings, infrastructure, or critical facilities that may be constructed which may be vulnerable to the identified natural hazards. The collection of such data does not qualify for mitigation funding and would need to be considered by the County as part of a future preparedness strategy.

Table D.1, Facility Vulnerability Assessment: Ranking Factors contains the rankings used for each hazard, detailed by municipality.

Table D.1: Facility Vulnerability Assessment: Ranking Factors

Vulnerability to Flooding	
0	Structure is known to not be located in a flood plain or flood prone area
1	Structure is in a floodplain or flood prone area but has no prior history of flood damage
2	Structure is in a floodplain or flood prone area and has experienced some limited flood damage in the past
3	Structure is in a floodplain or flood prone area and has experienced significant flood damage or the property is an NFIP repetitive loss property
Vulnerability to Storm Surge	
0	Structure is known to not be located in a storm surge or tsunami inundation area
1	Structure is located in a storm surge area for a category 4 or 5 hurricane, or is located at the edge of a designated tsunami risk zone
2	Located in a storm surge zone for a Category 3 hurricane or is located just inside a designated tsunami risk zone, but has no prior damage
3	Located in a Category 1 or 2 hurricane surge zone, or well inside a designated tsunami risk zone, or has experienced prior surge/tsunami damage
Vulnerability to Drought	
0	The facility is served by a water supply that is known to be adequate under drought conditions
1	The facility is served by a water supply that is likely to fail under severe drought conditions
2	The facility is served by a water supply that is likely to fail under moderate drought conditions
3	Facility's water supply is predicted to fail under moderate drought conditions or significant water supply problems have been experienced
Subject to Winter Storm Disruption	
0	The facility would not suffer any damage or operational disruption from a winter storm
1	The facility could suffer some damage or minor operational disruption from a winter storm
2	The facility has suffered damages or significant operational disruption from past winter storms
3	Facility has suffered damages or significant disruption from past storms which has had serious community economic or health consequences
Subject to Earthquake	
0	The facility is not located in an area considered to have any significant risk of earthquake
1	In an area considered as low earthquake risk or has been constructed/ retrofitted to comply with the current earthquake building codes
2	In an area considered as moderate earthquake risk and has not been constructed/ retrofitted to comply with the current earthquake codes.
3	In an area considered as high earthquake risk and has not been constructed/ retrofitted to comply with the current earthquake codes

Subject to Landslide/Mudslide	
0	Facility is located on a site not considered vulnerable to landslide, erosion or avalanche
1	Facility is on sloping or waterside site with moderate vulnerable to landslide or erosion, and/or is near but not in an avalanche runout zone
2	On a sloping/waterside site with soils prone to landslide or erosion, and/or is in potential avalanche runout zone; with no history of damage
3	On a sloping or waterside site highly vulnerable to landslide or erosion, is in a predicted avalanche runout zone, or has history of such damage
Vulnerability to High Winds	
0	Facility is not vulnerable due to construction type, roof configuration & wall opening size or protection; no nearby trees
1	Wall opening size/lack of protection may cause window/door failure &/or with few nearby trees; essential external equipment is vulnerable
2	Vulnerable due to wall opening size/lack of protection, roof configuration, &/or several nearby trees; essential external equipment is vulnerable
3	Very likely to be damaged or destroyed in a high wind, because it is a mobile or fragile structure, or wall openings can be expected to fail
Vulnerability to Major Fire	
0	Meets the current fire code, has adequate separation from other structures and good access, and is not close to heavily vegetated areas
1	Meets the current code, is not close to heavily vegetated areas, but access and/or separation from nearby structures increase fire risk
2	Does not meet current fire code, is in/adjacent to large vegetated areas, and has inadequate access and/or separation from other structures
3	Does not meet the current code, is in/adjacent to vegetated areas, with access limitations/structure separation make fire suppression difficult
Vulnerable to Subsidence	
0	The facility is not located over geologic formations with any potential for subsidence and the site is in an area free of expansive soils.
1	Over formations with limited potential subsidence or expansive soils may be present, and there is no previous damage from these hazards
2	Over formations of known potential for subsidence or site is likely to have expansive soils, but there is no history of this type of damage
3	Over formations of known potential for subsidence or the site has expansive soils and there is a history in the area of this type of damage
Vulnerability to Hail Storms	
0	The construction of the facility has no surfaces or equipment that are likely to be damaged by large hail
1	The facility has equipment or surfaces that could be damaged by large hail, but operation of the facility would not be disrupted
2	The facility has equipment or surfaces that would be damaged by large hail, and operation of the facility may be disrupted
3	Facility's equipment/surfaces would be damaged by large hail, and operations would be disrupted, or, it has significant past hail damage

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Allendale									
Allendale DPW	1	2	0	0	0	0	1	0	4
Allendale Fire Department	1	1	0	0	0	0	1	0	3
Allendale Police Department	1	1	0	0	0	0	1	0	3
Allendale Volunteer Ambulance Corps	1	1	0	0	0	0	1	0	3
Allendale Water	1	2	0	0	0	0	1	0	4
Brookside School	2	3	0	0	0	0	2	0	7
Hillsdale School	2	1	0	0	0	0	1	0	4
Northern Highlands Regional High School	2	1	0	0	0	0	2	0	5
Alpine									
Alpine Department of Public Works	1	0	0	0	0	0	0	0	1
Alpine Fire Department	1	0	0	0	0	0	0	0	1
Alpine Public School	1	0	0	0	0	0	1	0	2
Alpine Tower Corporation	1	0	0	0	0	0	0	0	1
American Tower	1	0	0	0	0	0	0	0	1
Closter Dock Road-BC Route 502	0	0	0	0	0	0	1	0	1
Hillside Avenue-Route 6	0	0	0	0	0	0	1	0	1
Municipal Hall/ Police Dept./EOC	1	0	0	0	0	0	0	0	1
Public Water Storage Tank-5 million gallons	0	0	0	0	0	0	0	0	0
Public Water Storage Tank-9 million gallons	0	0	0	0	0	0	0	0	0
T-Mobile Cellular Tower	1	0	0	0	0	0	0	0	1
US Route 9W	0	0	0	0	0	0	1	0	1
Bergenfield									
Alert Fire Company	1	0	0	0	0	0	1	0	2
Bergenfield Borough Hall/ Police Dept.	0	0	0	0	0	0	1	0	1
Bergenfield Department of Public Works	0	0	0	0	0	0	1	0	1
Bergenfield High School	1	0	0	0	0	0	1	0	2
Bergenfield Municipal	0	2	0	0	0	0	0	0	2
Bergenfield Voc. Ambulance Corps	1	0	0	0	0	0	0	0	1
No. 2 Fire Company	1	0	0	0	0	0	1	0	2
Prospect Fire Company No. School	1	0	0	0	0	0	1	0	2

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Bogota									
Facility	0	2	2	0	0	0	1	0	5
Carlstadt									
Carlstadt Civic Center & Ambulance HQ	0	0	0	0	0	0	1	0	1
Carlstadt Presbyterian	0		0	0	0	0	1	1	2
Carlstadt Public Library	0	0	0	0	0	0	1	0	1
Carlstadt Public Works	1	2	0	0	0	0	1	0	4
Carlstadt Pump Station (Barell Ave)	0	2	3	0	0	1	1	0	7
Carlstadt Pump Station (Industrial Rd)	0	1	1	0	0	0	1	0	3
Carlstadt Town Hall	0	0	0	0	0	0	0	0	0
Carlstadt Turnverein Inc.	0	0	0	0	0	0	1	0	1
P S E &G Substation	0	2	0	0	0	0	1	0	3
Pumping Station 1 (Jony Drive)	0	1	3	0	0	0	1	2	7
Stop & Shop #831	1	0	0	1	0	0	2	0	4
Sun Chemical	1	0	0	0	1	0	1	0	3
The Carlstadt Public School	0	0	0	0	0	0	0	0	0
Williams Transcontinental Pipeline	0	1		0	0	0	0	0	1
Cliffside Park									
Cliffside Park Borough Hall	0	0	0	1	0	0	1	0	2
Cliffside Park DPW Annex	0	0	0	0	0	0	1	0	1
Cliffside Park									0
Cliffside Park High School	0	0	0	1	0	0	2	0	3
Cliffside Park Housing Authority	0	0	0	2	0	0	1	0	3
Cliffside Park Library	0	0	0	1	0	0	1	0	2
Epiphany Church	1	0	0	1	0	0	2	0	4
PS #3 (school)	0	0	0	1	0	0	1	0	2
PS #4 (School)	0	0	0	1	0	0	1	0	2
PS #5 (School)	0	0	0	1	0	0	1	0	2
PS #6 (School)	0	0	0	1	0	0	1	0	2
Verizon Sub-Station	1	0	0	1	0	0	1	0	3
Closter									
Closter Borough Hall	1	2	0	0	0	0	0	0	3
Closter DPW Headquarters	0	1	0	0	0	0	0	0	1
Closter EMS Headquarters	1	1	0	0	0	0	1	0	3
Closter Fire Headquarters	0	1	0	0	0	0	1	0	2

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Dumont Borough Hall	0	2	0	0	0	0	1	0	3
Dumont D.P.W Building	0	1	0	0	0	0	1	0	2
Dumont Fire Co. #1	0	0	0	0	0	0	1	0	1
Dumont Fire Co. #2	0	1	0	0	0	0	1	0	2
Dumont Fire Co. #3	0	0	0	0	0	0	1	0	1
Dumont High School	0	0	0	0	0	0	2	0	2
Dumont Independent Hose Co.	0	0	0	0	0	0	1	0	1
Dumont Police Department	0	2	0	0	0	0	1	0	3
Dumont Volunteer Ambulance Corp.	0	3	0	0	0	0	1	0	4
Grant School	0	0	0	0	0	0	2	0	2
Honiss School	0	0	0	0	0	0	2	0	2
Lincoln School	0	0	0	0	0	0	2	0	2
PSE&G Dumont Substation	0	0	0	0	0	0	1	0	1
Pump Station (1st St)	0	0	0	0	0	0	0	0	0
Pump Station (2nd St)	0	0	0	0	0	0	0	0	0
Pump Station (Concord St)	0	0	0	0	0	0	1	0	1
Pump Station (Layfayette)	1	0	0	0	0	0	1	0	2
Pump Station (White Beeches Dr)	0	2	0	0	0	0	1	0	3
Selzer School	0	0	0	0	0	0	2	0	2
St. Mary's Senior Residence Inc. .	0	0	0	0	0	0	0	0	0
Verizon Central Office	0	2	0	0	0	0	2	0	4
East Rutherford									
Alfred S. Faust Intermediate School	1	1	1	0	1	0	1	1	6
Boiling Springs Gardens	1	0	0	0	1	0	1	1	4
Continental Airlines Arena	0	0	0	0	1	0	1	0	2
East Rutherford Building Department	1	0	0	0	1	0	1	1	4
East Rutherford Department of Public Works	1	2	2	0	1	0	1	0	7
East Rutherford Fire Department-Grove St.	1	0	0	0	1	0	1	0	3
East Rutherford Fire Department-Station #13	1	0	0	0	1	0	1	1	4
East Rutherford Fire Dept.-Carlton Hill Firehouse	1	2	1	0	1	0	1	1	7
East Rutherford Municipal Building	1	0	0	0	1	0	1	1	4

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
East Rutherford Police Headquarters	1	0	0	0	1	0	1	1	4
East Rutherford Sewage Authority Lift Station	0	1	2	0	1	0	0	0	4
East Rutherford Sewage Authority Pump Station	1	1	1	0	1	0	1	0	5
Federal Reserve Bank	0	1	2	0	1	0	1	0	5
Giants Stadium	0	0	0	0	1	0	1	0	2
Henry P. Becton Regional High School	1	1	1	0	1	0	1	0	5
McKenzie School	1	1	0	0	1	0	1	1	5
Meadowlands Racetrack	0	0	0	0	1	0	1	0	2
NJSEA Fire Station	1	0	0	0	1	0	1	1	4
PSE&G Substation	1	0	0	0	1	0	1	0	3
PSE&G Switching Station	0	1	0	0	1	0	1	0	3
St. Joseph's Church School	1	0	0	0	1	0	1	1	4
Williams Gas Pipeline Valve Station	0	1	2	0	1	0	1	0	5
Edgewater									
American Legion Hall	0	0	0	0	1	0	1	0	2
Colony Community Center	1	0	0	0	1	1	1	1	5
Comfort Inn Motel	1	2	0	0	1	0	1	1	6
DPW Annex	1	2	0	0	1	0	1	1	6
Duane Reed Pharmacy	0	1	0	0	1	0	1	0	3
Edgewater Boro Hall and Police Dept.	1	2	0	0	1	0	1	1	6
Edgewater Community	0	0	0	0	1	0	1	1	3
Edgewater D.P.W	1	2	0	0	1	0	1	1	6
Edgewater Fire Department	0	1	0	0	0	0	0	0	1
Edgewater Library	0	1	0	0	1	0	1	1	4
Edgewater Multi-Plex	1	2	0	0	1	0	1	1	6
Edgewater Municipal	0	1	0	0	1	0	1	1	4
Edgewater Pathmark/Pharmacy	1	1	0	0	1	0	1	1	5
Edgewater Post Office	1	0	0	0	0	0	1	1	3
Edgewater Senior Center	1	1	0	0	1	0	1	1	5
Edgewater Senior Center	1	0	0	0	1	1	1	1	5
Edgewater Volunteer 1st Aide Squad	0	2	0	0	1	0	1	1	5
Edgewater Volunteer Fire Dept. Co. #1	0	0	0	0	1	0	1	0	2

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Edgewater Water Pollution Control Facility	0	2	2	0	3	0	1	1	9
EVG School	1	1	0	0	1	0	1	1	5
George Washington School	0	2	0	0	1	0	1	0	4
Grand Cove Marina	0	1	0	0	1	0	1	0	3
Hess Oil	0	1	0	0	1	0	1	0	3
Holy Rosary Church	0	1	0	0	1	0	1	1	4
Lord's Grace Church	1	0	0	0	1	0	1	1	4
Mitsuwa	1	1	0	0	1	0	1	1	5
Montessori School	1	0	0	0	1	0	1	1	4
Palisade Learning Center	1	2	0	1	0	0	1	1	6
Prime Time Learning Center	1	1	0	0	1	0	1	1	5
Sewer Plant #3	1	2	0	0	1	0	1	1	6
Sunrise Assisted Living	1	2	0	0	1	0	1	1	6
Transco Gas Pipeline	0	0	0	0	2	0	0	1	3
Waterford Towers	1	2	0	0	1	0	1	1	6
Elmwood Park									
Elmwood Park 16th Avenue School	0	0	0	0	0	0	1	0	1
Elmwood Park DPW Building/Yard	0	0	0	0	0	0	1	0	1
Elmwood Park Fire Co. #1	0	0	0	0	0	0	1	0	1
Elmwood Park Fire Co. #2	0	0	0	0	0	0	1	0	1
Elmwood Park Fire Co. #3	0	0	0	0	0	0	1	0	1
Elmwood Park Fire Co. #4	0	0	0	0	0	0	1	0	1
Elmwood Park Gantner Avenue School	0	0	0	0	0	0	1	0	1
Elmwood Park Gilbert Ave School	0	0	0	0	0	0	1	0	1
Elmwood Park Jewish	0	0	0	0	0	0	1	0	1
Elmwood Park Memorial High School	0	0	0	0	0	0	1	0	1
Elmwood Park Police Department / Boro Hall	0	0	0	0	0	0	1	0	1
Elmwood Park Recreation Center	0	0	0	0	0	0	1	0	1
Elmwood Park Volunteer Ambulance Corp	0	0	0	0	0	0	1	0	1
Elmwood Park Water Distribution Center	0	1	0	0	0	0	1	1	3
New Jersey Believers Church	0	0	0	0	0	0	1	0	1
Presbyterian Church	0	0	0	0	0	0	1	0	1

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Prime Energy Co-Generation	0	1	0	0	0	0	1	0	2
Sewer Pumping Station (Parkview Ave)	0	1	0	0	0	0	0	0	1
Sewer Pumping Station (Martha Ave)	0	1	0	0	0	0	0	0	1
Sewer Pumping Station (Market St)	0	0	0	0	0	0	0	0	0
Sewer Pumping Station (River Dr)	0	1	0	0	0	0	0	0	1
St. Leo Church & School	0	0	0	0	0	0	1	0	1
Emerson									
Armenian Home	2	0	0	0	1	0	1	1	5
Assumption Academy	1	0	0	0	0	0	1	1	3
Emeritus at Emerson	1	0	0	0	1	0	1	1	4
Emerson Borough Hall/Police Station/EOC	1	0	0	0	0	0	1	0	2
Emerson Dept. of Public Works	1	0	0	0	0	0	1	1	3
Emerson Fire House	1	0	0	0	0	0	1	0	2
Emerson Health Care	1	0	0	0	2	0	1	0	4
Emerson Jr. & Sr. High	1	0	0	0	0	0	2	0	3
Memorial School	1	0	0	0	0	0	2	0	3
Public Service Gas Metering Station	1	0	0	0	1	0	1	0	3
Villano Elementary School	2	0	0	0	0	0	2	1	5
Englewood									
Ability School	1	0	0	0	0	0	1	0	2
Actor Funds Nursing Home	1	0	0	0	0	0	1	0	2
Bergen Family Center	1	0	0	0	0	0	1	0	2
Buckley's Drug Store & Company	1	0	0	0	0	0	1	0	2
City of Englewood Public Library	1	0	0	0	0	0	1	0	2
Cleveland Elementary	1	0	0	0	0	0	1	0	2
Communications Center	1	0	0	0	0	0	1	0	2
Department of Public Works	1	0	0	0	0	0	1	0	2
Donal Quarles Elementary School	1	0	0	0	0	0	1	0	2
Dr. John Grieco Elementary School	1	0	0	0	0	0	1	0	2
Dwight Englewood School	1	0	0	0	0	0	1	0	2

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Dwight Englewood School Communication Tower	1	0	0	0	0	0	1	0	2
Dwight Morrow High School/ Englewood	1	0	0	0	0	0	1	0	2
E. A. G. L. E. Initiative Alternative	1	0	0	0	0	0	1	0	2
Elisabeth Morrow School	1	0	0	0	0	0	1	0	2
Emergency Operations	1	0	0	0	0	0	1	0	2
Englewood City Hall	1	0	0	0	0	0	1	0	2
Englewood Field Club	1	0	0	0	0	0	0	0	1
Englewood Fire Dept.	1	0	0	0	0	0	1	0	2
Englewood Hospital	1	0	0	0	0	0	1	0	2
Englewood Hospital Communications Tower	1	0	0	0	0	0	1	0	2
Englewood Hospital Emergency Medical Services HQ	1	0	0	0	0	0	1	0	2
Englewood on the Palisades Charter School	1	0	0	0	0	0	1	0	2
Englewood Police Dept.	1	0	0	0	0	0	1	0	2
Englewood Police HQ Communication Towers	1	0	0	0	0	0	1	0	2
Englewood Volunteer Ambulance Corps HQ	1	0	0	0	0	0	1	0	2
Genesis Healthcare-Englemoor Center	0	0	0	0	0	0	1	0	1
Health Department	1	0	0	0	0	0	1	0	2
Helicopter Landing Site (Garrity Field)	1	0	0	0	0	0	1	0	2
Helicopter Landing Site (Mackay Field)	1	0	0	0	0	0	1	0	2
Infant Senior Sharing Project	1	0	0	0	0	0	1	0	2
Janis E. Dismus Middle	1	0	0	0	0	0	1	0	2
John T Wright Ice Arena	1	0	0	0	0	0	1	0	2
Kid Nation Daycare &	1	0	0	0	0	0	1	0	2
Liberty Pharmacy	1	0	0	0	0	0	1	0	2
Lincoln Elementary School	1	0	0	0	0	0	0	0	1
Metropolitan Medical Associates	0	0	0	0	0	0	0	0	0
Montessori Early Learning Center	1	0	0	0	0	0	1	0	2
Moriah School	1	0	0	0	0	0	1	0	2
Municipal Court	1	0	0	0	0	0	1	0	2

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Pastor Pharmacy	1	0	0	0	0	0	1	0	2
Primary Shelter- Janis E Dismus Middle School	1	0	0	0	0	0	1	0	2
PSEG Sub Station	1	0	0	0	0	0	1	0	2
Pump Station (Cedar Ln)	1	0	0	0	0	0	1	0	2
Pump Station (Mackay Park)	1	0	0	0	0	0	1	0	2
Pump Station (Morris Park)	1	0	0	0	0	0	1	0	2
Pump Station (W Sheffield Ave)	1	0	0	0	0	0	1	0	2
Rite Aid Pharmacy	1	0	0	0	0	0	1	0	2
Route 4	1	1	0	0	0	0	1	0	3
Route 95	1	1	0	0	0	0	1	0	3
Russell Major Liberty School	1	0	0	0	0	0	1	0	2
Saddle Acres Day-care	0	0	0	0	0	0	0	0	0
Shop Rite Pharmacy	1	2	0	0	0	0	1	0	4
US Post Office (Engle St)	1	0	0	0	0	0	1	0	2
US Post Office (Smith St)	1	0	0	0	0	0	1	0	2
Vincent K. Tibbs	1	0	0	0	0	0	1	0	2
Walgreens Pharmacy	1	0	0	0	0	0	1	0	2
Westside Infant Day-care	1	0	0	0	0	0	1	0	2
Winton White Stadium	0	0	0	0	0	0	0	0	0
Englewood	1	0	0	0	0	0	1	0	2
Englewood Cliffs									
Borough Hall Court and Police Facility	1	0	0	0	0	0	1	1	3
Citibank (Citigroup) NA	1	0	0	0	0	0	0	1	2
CNBC	0	0	0	1	0	0	1	0	2
Communication Tower	3	0	0	0	0	0	1	1	5
Department of Public Works	1	0	0	0	0	0	1	1	3
Englewood Cliffs Fire Dept.	1	0	0	0	0	0	1	1	3
Japanese Children's Society	0	0	0	0	0	0	1	0	1
North Cliffs School	0	0	0	1	0	0	1	0	2
PSEG Substation	1	0	0	0	0	0	1	1	3
Pump Station (Chestnut St)	1	1	0	0	0	0	1	1	4
Pump Station (Hollywood)	1	1	0	0	0	0	1	1	4
Pump Station (Jane Dr)	1	1	0	0	0	0	1	1	4
Pump Station (Lyncrest Rd)	1	1	0	0	0	0	1	1	4
Pump Station (Roberts Rd)	1	1	0	0	0	0	1	1	4
St. Michael's Villa	1	0	0	0	1	0	1	0	3
St. Peter's College	1	0	0	0	1	1	1	1	5
Unilever Best Foods	1	1	0	0	0	0	1	1	4
Unilever Best Foods NA	1	0	0	0	0	0	1	1	3
United Water Tower	2	0	0	0	0	0	1	0	3

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Upper School	0	0	0	1	0	0	1	0	2
Volunteer Ambulance Corps	1	0	0	0	0	0	1	1	3
Fair Lawn									
Board of Education Maintenance Facility	1	0	0	1	0	0	1	0	3
Broadway Train Station - Broadway	0	0	0	0	0	0	0	0	0
Fair Lawn Ambulance Corps	1	0	0	1	0	0	1	0	3
Fair Lawn Auxiliary Police/ PBA Bldg	1	0	0	1	0	0	1	0	3
Fair Lawn Cadmus House	1	0	0	1	0	0	1	0	3
Fair Lawn Community	1	0	0	1	0	0	1	0	3
Fair Lawn Community	1	0	0	1	0	0	1	0	3
Fair Lawn DPW Complex	1	2	0	1	0	0	1	0	5
Fair Lawn Fire Co #1	1	0	0	1	0	0	1	0	3
Fair Lawn Fire Co #3	0	0	0	1	0	0	1	0	2
Fair Lawn Fire Co #4	1	0	0	1	0	0	1	0	3
Fair Lawn Fire Company #2	1	0	0	1	0	0	1	0	3
Fair Lawn High School	1	0	0	1	0	0	1	0	3
Fair Lawn Memorial Pool	0	3	0	0	0	0	0	0	3
Fair Lawn Municipal Bldg/ Police Dept.	1	0	0	1	0	0	1	0	3
Fair Lawn Parks Bldg	1	2	0	1	0	0	1	0	5
Fair Lawn Public Library	1	0	1	1	0	0	1	0	4
Fair Lawn Rescue Squad	1	0	0	1	0	0	1	0	3
Fair Lawn Senior Center	1	0	1	1	0	0	1	0	4
Fair Lawn Sewer Facility (Brennan Ct.)	0	0	0	0	0	0	1	0	1
Fair Lawn Sewer Facility (Canger Pl.)	1	1	0	1	0	0	1	0	4
Fair Lawn Sewer Facility (Chittenden Rd.)	0	0	0	0	0	0	0	0	0
Fair Lawn Sewer Facility (Mandon Pl.)	0	0	0	0	0	0	0	0	0
Fair Lawn Sewer Facility (Plaza Rd.)	1	0	0	1	0	0	1	0	3
Fair Lawn Sewer Facility (River Rd.)	1	1	0	1	0	0	1	0	4
Fair Lawn Sewer Facility (Saddle River Rd.)	1	0	0	0	0	0	1	0	2
Fair Lawn Sewer Facility (Saddle River Rd.)	1	1	0	1	0	0	1	0	4

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Fair Lawn Walsh Pool	0	0	0	0	0	0	0	0	0
Fair Lawn Water Dept.	1	0	0	1	0	0	1	0	3
Fair Lawn Water Facility #28	0	0	0	0	0	0	1	0	1
Fair Lawn Water Facility #10	1	0	0	1	0	0	1	0	3
Fair Lawn Water Facility #11	1	0	0	1	0	0	0	0	2
Fair Lawn Water Facility #12	1	0	0	0	0	0	1	0	2
Fair Lawn Water Facility #14	1	0	0	1	0	0	1	0	3
Fair Lawn Water Facility #15	1	1	0	1	0	0	1	0	4
Fair Lawn Water Facility #16	0	1	0	1	0	0	1	0	3
Fair Lawn Water Facility #17	1	1	0	1	0	0	1	0	4
Fair Lawn Water Facility #19	1	1	1	0	0	0	1	0	4
Fair Lawn Water Facility #2	0	0	0	1	0	0	1	0	2
Fair Lawn Water Facility #25	1	0	0	0	0	0	1	0	2
Fair Lawn Water Facility #5	1	0	0	1	0	0	1	0	3
Fair Lawn Water Facility #7	0	0	0	1	0	0	1	0	2
Fair Lawn Water Facility #8	1	0	0	1	0	0	1	0	3
Fair Lawn Water Facility #9	1	0	0	0	0	0	1	0	2
Fair Lawn Water Facility (11th St.)	1	0	0	0	0	0	1	0	2
Fair Lawn Water Facility (Dunderhook Rd.)	0	0	0	1	0	0	1	0	2
Fair Lawn Water Facility (Wagaraw Rd.)	1	1	0	1	0	0	1	0	4
Fisher Scientific	1	0	0	1	0	0	1	0	3
Forrest School	1	0	0	1	0	0	1	0	3
Gordon Place Water Tower	0	0	0	0	0	0	0	0	0
Lyncrest School	1	0	0	1	0	0	1	0	3
Maple Glen Nursing Home	1	0	0	1	0	0	1	0	3
Medco Health Systems	1	0	0	1	0	0	1	0	3
Memorial Junior High School	1	3	0	1	0	0	2	0	7
Milnes School	1	0	0	1	0	0	1	0	3
Nabisco Kraft Foods	1	0	0	1	0	0	1	0	3
Parks & Recreation Garage	0	3	0	0	1	0	1	0	5
PSE&G Power Substation (Legion)	1	0	0	0	0	0	1	0	2
PSE&G Power Substation (Nevins Road)	1	0	0	0	0	0	1	0	2
PSE&G Power Substation (Warren Point)	1	0	0	0	0	0	1	0	2
Radburn School	1	0	0	1	0	0	1	0	3
Radburn Train Station (Pollitt Drive)	1	0	0	0	0	0	1	0	2
Saint Anne's Church	1	0	0	1	0	0	1	0	3

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Saint Anne's School	1	0	0	1	0	0	1	0	3
Thomas Jefferson Middle School	1	0	0	1	1	0	1	0	4
Valley Hospital Renal Care Center	1	0	0	1	0	0	1	0	3
Warren Point School	1	0	0	1	0	0	1	0	3
Well House	0	2	0	0	1	0	0	0	3
Westmoreland School	1	0	0	1	0	0	1	0	3
Pipeline	0	0	0	0	0	0	1	0	1
Fairview									
Department of Public Works	0	2	0	1	0	0	1	1	5
Fairview Police Department/ Municipal Co.	1	0	0	1	0	0	1	1	4
P S E & G Transformer	0	0	0	0	0	0	0	0	0
Public Work Facility	0	0	0	0	0	0	1	0	1
Sedore Ave Firehouse	1	0	0	0	0	0	1	0	2
United Water Holding Tank	0	0	0	0	0	0	0	0	0
Walker St. Firehouse	0	0	0	0	0	0	1	1	2
Fort Lee									
12th St. Pump Station	0	0	0	0	1	0	0	0	1
505 North Ave.	1	0	0	0	1	0	0	0	2
Advent Lutheran Church	1	0	0	0	1	0	1	0	3
Ambulance Corp.	0	0	0	0	0	0	1	0	1
Bluff Rd. Pump Station	0	0	0	0	1	1	1	0	3
Board of Education	1	0	0	0	1	0	1	0	3
Church of Good Shepherd	1	0	0	0	1	0	0	0	2
D.P.W	0	0	0	0	1	0	0	0	1
Firehouse #1	0	0	0	0	0	0	1	0	1
Firehouse #2	0	0	0	0	1	0	3	0	4
Firehouse #3	0	0	0	0	0	0	0	0	0
Firehouse #4	0	0	0	0	1	0	1	0	2
Fort Lee Borough Hall	1	0	0	0	1	0	0	0	2
Fort Lee Community Center	0	0	0	0	0	0	0	0	0
Fort Lee High School	0	0	0	0	1	0	0	0	1
Fort Lee Historical Park	0	0	0	0	1	1	0	0	2
Fort Lee Parking Authority	0	0	1	0	1	0	0	0	2
Fort Lee Range	0	0	0	0	0	0	0	0	0
George Washington Bridge	0	0	0	0	1	0	1	0	2
Health Department	1	0	0	0	0	0	0	0	1
Holy Trinity Church & School	0	0	0	0	1	0	1	0	2
Jewish Community Center	0	0	0	0	1	0	0	0	1
Judge Moore House	1	0	0	0	1	0	1	0	3

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Lewis F. Cole Middle School	1	0	0	0	1	1	1	0	4
Madonna Chapel	1	0	0	0	1	0	1	0	3
Modonna Church & School	0	0	0	0	1	0	1	0	2
New Synagogue of Fort Lee	0	0	0	0	1	0	1	0	2
OEM Office	0	0	0	0	1	0	0	0	1
Park & Recreation Office	1	0	0	0	1	0	0	0	2
Police Department	1	0	0	0	1	0	1	0	3
Port Authority	0	0	0	0	1	0	0	0	1
Post Office	0	0	0	0	1	0	0	0	1
Post Office	0	0	0	0	1	0	1	0	2
PSEG Substation	1	0	0	0	1	0	1	1	4
Public Library	0	0	0	0	1	0	0	0	1
Public School #1	1	0	0	0	1	0	1	0	3
Public School #2	0	0	0	0	0	0	1	0	1
Public School #3	0	0	0	0	1	0	1	0	2
Public School #4	1	0	0	0	1	0	2	1	5
Pump Station (Valley St)	0	1	0	0	1	0	0	0	2
Pump Station (Horizon Rd)	0	0	0	0	1	0	0	0	1
Pump Station (Main St)	2	0	0	0	1	1	1	0	5
Pump Station (Palisades	1	0	0	0	1	1	1	0	4
Pump Station. (Stillwell Ave)	0	0	0	0	1	0	0	0	1
Recreation Center	1	1	0	0	1	0	1	0	4
Senior Citizens Center	0	0	0	0	1	0	0	0	1
Senior Housing/Malcolm Towers	1	0	0	0	1	0	1	0	3
Verizon Substation	0	0	0	0	1	0	0	0	1
Youth Center	0	0	0	0	1	0	0	0	1
Franklin Lakes									
Becton Dickinson and Co.	0	0	0	0	0	0	1	1	2
Colonial Road School	0	0	0	1	2	0	1	0	4
Emergency Operations	2	0	0	0	0	0	3	0	5
Franklin Ave Firehouse	2	0	0	0	0	0	3	0	5
Franklin Ave Middle School	0	0	0	1	2	0	1	0	4
Franklin Lakes Borough Hall	2	2	0	0	0	0	3	0	7
Franklin Lakes DPW	1	0	0	1	2	0	0	0	4
Franklin Lakes Police Dept.	2	0	0	1	2	0	3	0	8
Franklin Lakes Public Library	1	0	0	0	0	0	2	0	3
Franklin Lakes Road	2	0	0	0	0	0	3	0	5
Franklin Lakes Volunteer Ambulance Bldg.	0	0	0	0	1	0	1	1	3
Haledon Dam	2	0	0	0	0	0	3	0	5
High Mountain Road School	0	0	0	0	0	0	0	0	0
Medco Health Solutions	1	0	0	1	1	0	1	0	4

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
New Concepts For Living	1	0	0	0	0	1	1	1	4
Pre K - Holy Trinity School Annex	1	0	0	0	0	0	1	0	2
Pre School Annex	0	0	0	0	0	0	1	0	1
Public School #10	0	0	0	0	0	0	1	0	1
Public School #4	0	0	0	0	0	0	1	0	1
Public School #5	0	0	0	0	0	0	1	0	1
Public School #6	0	0	0	0	0	0	1	0	1
Public School #7	0	0	0	0	0	0	1	0	1
Public School #8	0	0	0	0	0	0	1	0	1
Public School Annex 4	0	0	0	0	0	0	1	0	1
Public Service Electric Sub-Station	2	2	3	0	0	0	0	0	7
Susana's Day Care	1	0	0	0	0	0	1	1	3
YMCA/Bright Beginnings Day Care Center	0	0	0	0	0	0	0	0	0
Glen Rock									
Municipal Complex	1	0	0	0	0	0	1	1	3
Ridgewood Pollution Plant	1	2	0	0	0	0	1	1	5
Hackensack									
Bergen County Community College-Ciarco Learning	1	0	0	0	1	0	1	0	3
Bergen County Academies	1	2	0	0	1	0	1	0	5
Bergen County Administrative Building	1	2	0	0	1	0	1	0	5
Bergen County Central Municipal Court	1	1	0	0	1	0	1	0	4
Bergen County Conklin Youth Center	0	1	0	0	1	0	0	0	2
Bergen County Dept. of Public Works	0	1	0	0	0	0	1	0	2
Bergen County Housing, Health & Human Services	0	2	0	0	1	0	0	0	3
Bergen County Jail & BCI Building	0	2	0	0	1	0	0	0	3
Bergen County Justice	1	1	0	0	1	0	1	0	4
Bergen County Maintenance Garage & Fueling Storage	0	1	0	0	1	0	1	0	3
Bergen County Police-Patrol Unit	1	2	0	0	0	1	1	0	5
Bergen County Probation	1	1	0	0	1	0	1	1	5

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
New Bergen County Agency Building	0	1	0	0	1	0	1	0	3
Ever Ready Oil	0	1	0	0	0	0	1	0	2
Hackensack Dept. of Public Works	0	1	0	0	0	0	1	0	2
PSE&G	0	2	0	0	0	0	1	0	3
Public Service Sub Station	0	1	0	0	0	0	1	0	2
Regent Care	0	1	0	0	0	0	1	0	2
Senior Center & Addiction Rec. Program	0	1	0	0	0	0	1	0	2
Harrington Park									
Community Church (Shelter)	0	0	0	0	0	0	0	0	0
D.P.W Building	0	2	0	1	0	0	1	0	4
Fire & Ambulance Building	0	0	0	0	0	0	1	0	1
Harrington Park Municipal Building	0	2	0	0	0	0	1	0	3
Harrington Park Police	0	0	0	0	0	0	1	0	1
Harrington Park Public School (Shelter)	0	0	0	0	0	0	1	0	1
Our Lady of Victories Church (Shelter)	0	0	0	0	0	0	0	0	0
St. Andrews Church	0	0	0	0	0	0	1	0	1
Hasbrouck Heights									
Corpus Christi School	0	0	0	0	0	0	0	0	0
Euclid School	0	0	0	0	0	0	0	0	0
Franklin Sewage Pumping Station	0	1	0	0	0	0	0	0	1
Hasbrouck Heights D.P.W	0	2	1	0	0	0	0	0	3
Hasbrouck Heights Junior/Senior High School	0	0	0	0	0	0	0	0	0
Hasbrouck Heights Municipal Building (Shelter)	0	0	0	0	0	0	0	0	0
Hasbrouck Heights Public Safety Bldg.	0	0	0	0	0	0	0	0	0
Kathy Dunn Cultural Center	0	0	0	0	0	0	0	0	0
Lincoln School	0	0	0	0	0	0	0	0	0
Methodist Nursery School	0	0	0	0	0	0	0	0	0
New World Montessori	0	0	0	0	0	0	0	0	0
PSE&G Power Substation	0	1	0	0	0	0	0	0	1
Haworth									
Haworth Ambulance Corps	1	1	0	0	0	0	1	1	4
Haworth DPW Bldg. #1	0	1	0	0	0	0	1	1	3

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Haworth DPW Bldg. #2	0	1	0	0	0	0	1	1	3
Haworth Fire Station	1	0	0	0	1	0	1	0	3
Haworth Municipal Complex	1	3	0	1	1	0	1	1	8
Haworth School	0	0	0	0	0	0	1	0	1
United Water Treatment Facility and Reservoir	0	1	0	0	1	0	3	1	6
Hillsdale									
Hillsdale Dept. Public Works	0	3	0	1	0	0	1	0	5
PSE&G Electric Substation	0	1	0	0	1	0	1	0	3
Woodcliff Lake Dam	0	2	0	3	1	2	0	1	9
Ho-Ho-Kus									
Bogert Rd. Sewer Station	0	1	0	0	0	0	0	0	1
Bogert Rd. Well #2	0	2	0	0	0	0	2	0	4
Brewster Dams	0	1	0	0	0	0	0	0	1
Brookview Sewer Station	0	0	0	0	0	0	1	0	1
Cellular Tower and Shelter	1	0	0	0	0	0	1	0	2
Community Church and Shelter	1	1	0	0	0	0	2	0	4
DPW Facility	0	0	0	0	0	0	1	0	1
East Gate Sewer Station	0	0	0	0	0	0	1	0	1
ECLC School and Shelter	2	0	0	0	0	0	2	0	4
Emergency Landing Facility	0	1	0	0	0	0	0	0	1
Flood Monitoring Station	0	3	0	0	0	0	0	0	3
Hermitage	2	0	0	0	0	0	1	2	5
Ho-Ho-Kus Ambulance	2	1	0	0	0	0	1	0	4
Ho-Ho-Kus Borough Hall and Shelter	2	1	0	0	0	0	1	0	4
Ho-Ho-Kus Fire Dept.	2	1	0	0	0	0	2	0	5
Ho-Ho-Kus Inn	2	3	0	0	0	0	1	0	6
Ho-Ho-Kus Police Dept.	2	1	0	0	0	0	2	0	5
Ho-Ho-Kus Public School and Shelter	1	0	0	0	0	0	2	0	3
Ho-Ho-Kus Well #4	0	0	0	0	0	0	1	0	1
Hollywood Ave Well #1	0	1	0	0	0	0	0	0	1
Hollywood Ave. Well #5	0	0	0	0	0	0	1	0	1
Maple Ave Bridge	0	3	0	0	0	0	1	0	4
Mill Road Bridge	0	3	0	0	0	0	0	0	3
Northwest Bergen Pump Station	0	2	0	0	0	0	1	0	3
Phone Trunk Station	0	1	0	0	0	0	1	0	2
Radio Communications Facility	0	0	0	0	0	0	1	0	1

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Railroad viaduct	0	2	0	0	0	0	1	0	3
Sheridan Ave. Well #6	0	0	0	0	0	0	1	0	1
St. Bartholomew's Episcopal Church	1	0	0	0	0	0	1	0	2
Train Station & Fire Alarm Audio System	1	0	0	0	0	0	1	0	2
Verizon Switching Center	0	1	0	0	0	0	0	0	1
Water Storage System	0	0	0	0	1	0	1	0	2
Leonia									
Anna C. Scott School	0	0	0	0	0	0	1	0	1
Borough Hall	0	0	0	0	0	0	0	0	0
Leonia High School	0	1	0	0	0	0	1	0	2
Leonia Middle School	0	0	0	0	0	0	1	0	1
Leonia Recreation (Shelter)	0	0	0	0	0	0	0	0	0
Leonia Senior Housing	0	0	0	0	0	0	0	0	0
Public Safety Complex	0	0	0	0	0	0	0	0	0
St. John's School	0	0	0	0	0	0	1	0	1
Little Ferry									
Bergen County Utilities Authority	0	2	1	0	0	1	0	0	4
Depyster Creek Pump	1	2	1	0	1	1	1	1	8
Early Learners Child Center	0	1	1	0	0	0	1	1	4
Eckel Rd. Pump Station	0	2	2	0	0	0	1	0	5
Little Ferry D.P.W	2	2	2	0	0	0	1	0	7
Little Ferry Hook & Ladder Fire Dept.	0	3	1	0	1	0	1	1	7
Little Ferry Hose Co. Fire	1	2	2	0	0	0	1	0	6
Little Ferry Library	1	2	1	0	1	0	1	0	6
Little Ferry Municipal	1	2	2	0	0	0	1	0	6
Little Ferry Nursery School	1	1	1	0	0	0	1	1	5
Little Ferry Public Safety Building	1	3	2	0	0	0	1	0	7
Losen Slote Drain Station	0	2	2	0	0	0	1	2	7
Maiden Lane Drain Station	0	2	2	0	0	0	1	0	5
Main & Franklin St. Pump Station	0	2	2	0	0	0	1	0	5
Main St. Pump Station	0	2	2	0	0	1	1	0	6
Memorial School	1	2	2	0	0	0	1	1	7
Public Service Electric	0	2	1	0	0	0	1	0	4
Scientific Design	2	2	2	0	0	0	1	1	8
Scientific Design	2	2	2	0	0	0	1	1	8

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Township of Lyndhurst Senior Center	0	0	0	0	0	0	0	0	0
Township of Lyndhurst Town Hall	0	0	0	0	0	0	0	0	0
Mahwah									
Bergen County Public Safety Operations Center	0	0	0	0	1	0	0	0	1
1 M.G.T and Repeater Radio for SCADA System	1	0	0	0	1	0	1	0	3
3 M.G.T/ Tudor Rose Booster Station	1	0	0	0	1	0	1	0	3
Ambulance Co #4	1	0	0	0	2	0	1	0	4
Ambulance Corps Co #1	1	0	0	0	2	0	1	0	4
Betsy Ross School	1	0	0	1	2	0	1	0	5
Campgaw Tank	1	0	0	0	1	0	1	0	3
Deerhaven Rd	0	0	0	0	1	0	0	0	1
Dept. of Public Works/ DPW Garage	0	2	0	0	1	0	1	1	5
E. Crescent Ave Booster Station	1	0	0	0	1	0	1	0	3
East Slope Booster Station	1	0	0	0	1	0	1	0	3
Fire Co #2	1	0	0	0	2	0	1	0	4
Fire Co #3	1	1	0	0	2	0	1	1	6
Fire Co #4	1	0	0	0	2	0	1	0	4
Fire Co #5	1	0	0	0	2	0	1	0	4
Fire Company #1	0	0	0	0	2	0	1	1	4
Ford Well Field	1	0	0	0	1	0	1	0	3
Fyke Brook Lift Station	1	0	0	0	1	0	1	0	3
George Washington School	1	0	0	1	2	0	1	0	5
Glen Gray Rd	0	0	0	0	1	0	0	0	1
Halifax Road	0	0	0	0	1	0	0	0	1
Hearthstone Liftstation	1	0	0	0	1	0	1	0	3
International Crossroads	0	0	0	1	1	0	1	1	4
Joyce Kilmer School	1	0	0	1	2	0	1	1	6
Lenape Meadows School	1	0	0	0	1	0	1	1	4
Litchult Liftstation	1	0	0	0	1	0	1	0	3
Mahwah High School	1	0	0	1	2	0	1	2	7
Police Dept.	0	0	0	0	1	0	1	0	2
Public Works Garage	1	1	0	0	1	0	1	0	4
Ramapo College	1	0	0	1	0	0	1	0	3
Ramapo Ridge Middle	1	0	0	0	2	0	1	1	5
Ridge Gardens Lift Station	1	0	0	0	1	0	1	0	3

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Route 202 at Brook St.	0	0	0	0	1	0	0	0	1
Route 202 at Franklin Tpk.	0	0	0	0	1	0	0	0	1
Storage Tank/Booster	1	0	0	0	1	0	1	0	3
Stryker Orthopedics	0	0	0	1	0	0	1	0	2
Timber Creek	1	0	0	0	1	0	1	0	3
Town Hall	1	0	0	0	1	0	0	0	2
United States Liquidy Center	0	0	0	0	1	0	0	0	1
UPS Data Center	0	0	0	0	1	0	0	0	1
Well # 16	1	0	0	0	1	0	1	0	3
Well # 17	1	0	0	0	1	0	1	0	3
Well # 19	1	0	0	0	1	0	1	0	3
Westervelt Liftstation	1	0	0	0	1	0	1	0	3
Young Rd	0	0	0	0	1	0	0	0	1
Maywood									0
Maywood Center for Health and Rehabilitation	1	1	0	0	0	0	1	0	3
Senior Center	1	2	0	0	0	0	1	0	4
Midland Park									
Borough Hall/ Police Headquarters	1	0	0	0	0	0	1	0	2
D.P.W Garage	2	1	0	0	0	1	0	0	4
DEP Dam	0	1	0	1	0	1	0	0	3
DEP Dam (Godwin Ave)	0	1	0	0	0	1	0	0	2
Godwin School	1	0	0	0	0	0	1	1	3
Highland School	1	0	0	0	0	0	1	1	3
Kentshire Apartments	1	1	0	0	0	1	1	0	4
Midland Park Fire Dept.	0	1	1	0	0	0	1	0	3
Midland Park High School	1	0	0	0	0	0	1	0	2
Mill Gardens Assisted Living	1	0	0	0	0	0	1	0	2
MP Ambulance Corps	1	0	0	0	0	0	1	0	2
Verizon/ T-Mobile Cell	0	2	0	0	0	0	0	0	2
Verizon/ T-Mobile Cell	0	2	0	0	0	0	0	0	2
Towers	0	2	0	0	0	0	0	0	2
Montvale									
Orange/Rockland Electric Substation	0	1	0	0	1	0	1	0	3
Moonachie									0
Civic Center	1	3	1	0	0	0	1	0	6
Concord St. Pump Station	0	3	3	0	0	0	0	0	6
Crest Foam	0	3	3	0	0	0	1	0	7
Department of Public Works	0	2	1	0	0	0	1	0	4

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Buckingham at Norwood-Care and Rehab Center	0	1	0	0	0	0	1	0	2
Norwood Ambulance	0	1	0	0	0	0	1	0	2
Norwood Borough Hall	0	1	0	0	0	0	1	0	2
Norwood D.P.W	0	1	0	0	0	0	1	0	2
Norwood Fire House	1	0	0	0	0	0	1	1	3
Norwood Police Station	0	1	0	0	0	0	1	0	2
Norwood Police Station-EOC	0	1	0	0	0	0	1	0	2
Norwood Public School	0	1	0	0	0	0	1	0	2
Oakland									
Oakland DPW Facility	0	0	0	0	0	0	0	0	0
Oakland Fire Dept. Station 1	0	0	0	0	0	0	0	0	0
Oakland Fire Dept. Station 2	0	0	0	0	0	0	0	0	0
Oakland First Aid Squad	0	0	0	0	0	0	0	0	0
Oakland Municipal Building	0	0	0	0	0	0	0	0	0
Headquarters	0	0	0	0	0	0	0	0	0
Old Tappan									
Bank of America	1	0	0	1	1	0	1	0	4
Bi-State Plaza Shopping	1	0	0	1	1	0	2	1	6
Borough of Old Tappan (Sewer Pump Station #1)	0	2	0	0	1	0	1	0	4
Borough of Old Tappan (Sewer Pump Station #2)	0	0	0	0	1	0	1	0	2
Borough of Old Tappan (Sewer Pump Station #3)	0	0	0	0	1	0	1	0	2
Borough of Old Tappan (Sewer Pump Station #4)	0	0	0	0	1	0	1	0	2
Borough of Old Tappan (Sewer Pump Station #5)	0	0	0	0	1	0	1	0	2
Borough of Old Tappan (Sewer Pump Station #6)	0	0	0	0	1	0	1	0	2
Charles Dewolf Middle	1	0	0	1	1	0	2	0	5
Kearney Federal Savings	1	0	0	1	1	0	1	0	4
Kindercare Learning Center	1	0	0	1	1	0	1	0	4
Korean Presbyterian Church of the Palisades	1	0	0	1	1	0	1	1	5
Lake Tappan	0	2	0	1	1	1	1	0	6
Lake Tappan Dam	1	1	0	1	1	1	1	0	6
Northern Valley Regional High School	1	0	0	1	1	0	2	0	5
Old Tappan Borough Hall	1	1	0	1	1	0	1	0	5

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Old Tappan Commons Senior Housing	1	0	0	1	1	0	1	1	5
Old Tappan DPW	1	0	0	1	1	0	1	1	5
Old Tappan Exxon	1	1	0	1	1	0	1	1	6
Old Tappan Fire	1	0	0	1	1	0	1	1	5
Old Tappan First Aid Corps	1	0	0	1	1	0	1	1	5
Old Tappan Police Headquarters	2	0	0	1	1	0	2	1	7
Old Tappan Public Library	1	0	0	1	1	0	1	1	5
Pearson Publishing	1	0	0	1	1	0	1	0	4
Prince of Peace Church	1	0	0	1	1	0	1	1	5
Rockland Electric (Con Ed) Substation	2	0	0	0	1	0	2	1	6
Saint Pius X Roman Catholic Church	1	0	0	1	1	0	1	1	5
Sunrise Assisted Living	2	0	0	2	0	0	1	1	6
T. Baldwin Demarest School	1	0	0	1	1	0	1	0	4
Tennessee Gas Pipeline	1	1	0	0	1	1	1	0	5
Tom's Automotive Specialists (Citco)	1	0	0	1	1	0	1	1	5
Trinity Reformed Church	1	0	0	1	1	0	1	1	5
Pipeline	1	1	0	0	1	1	1	0	5
Oradell									
New Jersey Transit Bus	0	3	2	0	3	0	0	0	8
Oradell Fire Headquarters	1	0	0	0	0	0	1	0	2
Oradell Public Works	0	3	0	0	0	0	1	0	4
Police Headquarters & EOC	1	0	0	0	0	0	2	0	3
PSE&G Gas Distribution	0	3	0	0	0	0	2	0	5
Palisades Park									
Board of Education	0	0	0	1	0	0	1	0	2
Borough Hall	0	0	0	1	0	0	1	0	2
Central Bible Church	0	0	0	1	0	0	1	0	2
Department of Public Works	0	1	0	1	0	0	1	0	3
First Presbyterian Church	0	0	0	1	0	0	1	0	2
Grace Lutheran Church	0	0	0	1	0	0	1	0	2
Korean Presbyterian Church	0	0	0	1	0	0	1	0	2
Lindbergh Elementary	0	0	0	1	0	0	1	0	2
Notre Dame Interparochial	0	0	0	1	0	0	1	0	2
Palisades Park Ambulance Corps.	0	0	0	1	0	0	1	0	2
Palisades Park Firehouse	0	0	0	1	0	0	1	0	2

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Radio Antenna/ Repeater Site (Rescue Bldg)	0	0	0	0	0	0	0	0	0
Radio Antenna/ Repeater Site (US Cable)	1	1	0	0	0	0	0	0	2
Radio Antenna/Repeater Site (GW Cemetery)	1	0	0	0	0	0	0	0	1
Radio Antenna/Repeater Site (PFD #1)	1	0	0	0	0	0	0	0	1
Radio Antenna/Repeater Site (PFD #4)	1	0	0	0	0	0	0	0	1
Radio/Antenna/Repeater (PFD #2)	1	0	0	0	0	0	0	0	1
Rescue Squad	1	0	0	1	0	0	1	0	3
Sewer Pump Station (Dunkerhook Road)	0	2	0	0	0	0	0	0	2
Sewer Pump Station (Grove Street)	0	2	0	0	0	0	0	0	2
Sewer Pump Station (Prospect Street)	0	0	0	0	0	0	0	0	0
Sewer Pump Station (Route 17)	0	0	0	0	0	0	0	0	0
Sewer Pump Station (Southcrest Drive)	0	2	0	0	0	0	0	0	2
Spring Valley Road Power Sub Station	1	1	0	0	0	0	1	1	4
Sunrise Assisted Living	0	0	0	1	1	0	1	0	3
Woodland Ave Power Sub Station	1	1	0	0	0	0	1	1	4
Park Ridge									
Borough Hall	1	3	0	0	0	0	1	0	5
Park Ridge DPW / Water / Electric	0	2	0	0	1	0	0	0	3
Park Ridge Fire Department	0	2	0	0	1	0	1	0	4
Park Ridge High School	0	0	0	0	1	0	0	0	1
Park Ridge Police Headquarters/ Triboro Radio EOC	0	1	0	0	1	0	0	0	2
Tri-Boro Ambulance	2	1	0	0	1	0	2	0	6
Ramsey									
Crystal Spring Lake Dam	3	3	0	0	3	3	1	0	13
Eric Smith School (shelter)	1	0	0	0	1	0	1	0	3
NJ Transit Train Station	0	0	0	0	1	0	1	1	3

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Ramsey Ambulance Corps	1	0	0	1	1	0	1	0	4
Ramsey DPW Garage	1	0	0	0	2	0	1	0	4
Ramsey Fire Dept.	1	0	0	0	1	0	1	0	3
Ramsey High School	1	0	0	0	1	0	1	0	3
Ramsey Municipal Bldg.	2	0	0	0	2	0	1	1	6
Ramsey Police Dept.	1	0	0	0	2	0	1	0	4
Ramsey Public Library	1	1	0	0	1	0	1	1	5
Ramsey Rescue Squad	1	0	0	0	1	0	1	0	3
Ridgefield									
English Neighborhood Reform Church	0	1	0	0	0	0	1	0	2
Freight Railroad	0	1	0	0	0	0	1	0	2
New Jersey Turnpike	0	0	0	0	0	0	1	1	2
NJ State Highway 46	0	0	0	0	0	0	1	1	2
PSE&G Generating Station	0	1	0	0	0	0	0	0	1
PSE&G Sub Station	0	1	0	0	0	0	0	0	1
Ridgefield Ambulance Corp. Building	0	1	0	0	0	0	1	0	2
Ridgefield Bergen Blvd.	0	0	0	0	0	0	1	0	1
Ridgefield Borough Hall	1	0	0	0	0	0	1	0	2
Ridgefield Community	1	2	0	0	0	0	1	0	4
Ridgefield Department of Public Works	0	1	0	0	0	0	1	0	2
Ridgefield Fire House #1	0	0	0	0	0	0	1	0	1
Ridgefield Fire House #2	0	0	0	0	0	0	1	0	1
Ridgefield FireHouse #3	0	2	0	0	0	0	1	0	3
Ridgefield Memorial High School	0	0	0	0	0	0	1	0	1
Shaler Blvd. School	0	0	0	0	0	0	1	0	1
Slocum Skews School	0	0	0	0	0	0	1	0	1
Transcontinental Pipeline	0	0	0	0	0	0	0	0	0
United Water Tanks	0	0	0	0	0	0	0	0	0
Wolf Creek Culverts and Bridges	0	2	0	0	0	3	1	0	6
Ridgefield Park									
Active Chemical Co. Number Four	2	0	0	0	0	0	1	1	4
Callahan Chemical Co., Inc.	2	1	0	0	0	0	1	0	4
Department of Public Works	1	1	0	0	0	0	1	0	3
Dowling Fuel Co.	2	1	0	0	0	0	1	0	4
Elks Club	1	0	0	0	0	0	1	0	2
Emergency Operations	1	0	0	0	0	0	1	0	2

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
EMS, Rescue, Fire Chief's, Backup EOC	1	0	0	0	0	0	1	1	3
Friendship Hook & Ladder Co. Number One	2	0	0	0	0	0	1	1	4
Hanal High School	1	0	0	0	0	0	1	0	2
Hazelton Truck Co. #2	2	0	0	0	0	0	1	1	4
Hose Co. Number One	2	0	0	0	0	0	1	1	4
Knights of Columbus	1	0	0	0	0	0	1	0	2
NYS&W Fuel Depot	3	1	0	0	0	0	1	2	7
Overpeck Engine Co. Number Two	2	0	0	0	0	0	1	1	4
Police Department, Municipal Building, EOC	1	0	0	0	0	0	1	0	2
Ridgefield Park Grant School	1	0	0	0	0	0	1	0	2
Ridgefield Park High School	1	1	0	0	0	0	1	0	3
Ridgefield Park Lincoln	1	0	0	0	0	0	1	0	2
Ridgefield Park Roosevelt School	1	0	0	0	0	0	1	0	2
St. Francis School	1	0	0	0	0	0	1	0	2
Westview Hose Co. Number Three	2	0	0	0	0	0	1	1	4
Ridgewood									
Carr Water Well System Building	0	2	0	0	0	0	1	0	3
Ridgewood Fire Dept. Headquarters	0	1	0	0	0	0	1	0	2
Ridgewood Parks Building	0	1	0	0	0	0	1	0	2
Ridgewood Village Hall/Police Station	0	3	0	0	0	0	1	0	4
Ridgewood Water Building	0	1	0	0	0	0	1	0	2
Sewer Pump Station (Bellair Rd)	0	1	0	0	0	0	0	0	1
Sewer Pump Station (Franklin Tpk)	0	1	0	0	0	0	0	0	1
Sewer Pump Station (Lake Ave)	0	1	0	0	0	0	0	0	1
Water Well Pump (Grove St)	0	2	0	0	0	0	0	0	2
Water Well Pump (Lakeview Dr)	0	2	0	0	0	0	0	0	2
Water Well Pump (Linwood & Northern Pkwy)	0	2	0	0	0	0	0	0	2

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Bergen County Health Care Center	1	1	0	0	1	0	1	0	4
The Jewish Home	0	0	0	0	0	0	0	0	0
Rutherford									
Borough of Rutherford Public Works	1	2	2	0	0	0	1	0	6
Rutherford Fire Dept. (Ames Ave)	1	0	0	0	0	0	0	0	1
Rutherford Fire Dept. (Mortimer Ave)	1	0	0	0	0	0	0	0	1
Rutherford Fire Dept. (Union Ave)	1	0	0	0	0	0	0	0	1
Rutherford First Aid Squad	0	0	0	0	0	0	0	0	0
Rutherford Joint Meeting Sewage Pump Station	0	0	0	0	1	0	0	0	1
Rutherford Police HQ & EOC	0	0	0	0	0	0	0	0	0
Verizon Central Office	0	0	0	0	0	0	0	0	0
Saddle Brook									
Brookwood Convalescent Home	1	3	0	0	0	0	1	0	5
Engine Co #1 Fire Station	1	2	1	0	0	0	0	0	4
Engine Co #2 Fire Station	0	0	0	0	0	0	0	0	0
Hook & Ladder Co #1 Fire Station	1	0	0	0	0	0	0	0	1
Kessler Institute	1	3	0	0	0	0	1	0	5
Saddle Brook High School	1	2	0	0	0	0	1	0	4
Saddle Brook Municipal Building	0	0	0	0	0	0	1	0	1
Saddle Brook Police Headquarters	1	1	0	0	0	0	1	0	3
St. Philips School	1	3	0	0	0	0	1	0	5
Saddle River									
Brighton Gardens Assisted Care Facility	1	0	0	1	0	0	1	0	3
Saddle River Day School	1	0	0	1	0	0	1	0	3
Saddle River Municipal Building	1	0	0	1	0	0	1	0	3
Saddle River Public Safety Complex	1	0	0	1	0	0	1	0	3
Saddle River Wandell School	1	0	0	1	0	0	1	0	3
Villa Marie Assisted Care Facility	1	0	0	1	0	0	1	0	3

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Calicooneck Road	3	0	0	1	0	0	1	1	6
Department of Public Works	1	1	0	3	0	0	1	0	6
South Hackensack									
Fire Headquarters	0	1	0	3	0	0	1	1	6
Garfield Park Sewage Pumping Station	0	3	0	3	0	0	1	0	7
Grove Street Sewage Station	0	2	1	0	0	0	1	0	4
Huyler St Pump Station	0	1	2	0	0	0	0	0	3
J. Josephson Company	1	2	3	0	0	0	1	0	7
Leuning Street	3	2	0	0	0	0	2	1	8
Memorial Elementary	0	1	0	1	0	0	1	0	3
Phillips Avenue	3	2	0	1	0	0	1	1	8
Public Service Electric Sub Station	3	2	2	0	0	0	1	1	9
Restaurant Depot	0	2	0	0	0	0	1	1	4
Saddle River Ave. Sewage Station	0	2	1	0	0	0	1	0	4
Town Hall Complex	0	1	0	3	0	0	1	1	6
Town Hall Complex	0	1	0	3	0	0	1	1	6
Town Hall Complex	0	1	0	3	0	0	1	1	6
Town Hall Complex	0	1	0	3	0	0	1	1	6
U.S. Post Office	1	2	0	0	0	0	1	0	4
Vreeland Avenue	1	2	0	0	0	0	1	0	4
Wesley Street	3	2	0	0	0	0	1	1	7
Teaneck									
D.P.W Yard	0	2	3	0	1	0	0	2	8
Fire Dept. Headquarters	0	0	0	0	1	0	1	3	5
Holy Name Hospital	0	0	0	1	1	0	1	0	3
Municipal Building	0	0	0	0	1	0	1	2	4
Police Headquarters	0	0	0	0	1	0	1	0	2
Pump Station	0	0	1	0	1	0	0	0	2
Tenafly									
Cell Tower (Monopole)	0	1	0	0	0	0	0	0	1
County Manor Nursing	0	3	0	0	0	0	1	0	4
Fiber Optic Network	2	0	0	0	0	0	1	0	3
Fransiscan Sisters Convent	0	0	0	0	0	0	1	0	1
J. Spencer Smith Elementary School	1	0	0	0	0	0	1	0	2
Jewish Community Center on the Palisades	1	0	0	0	0	0	1	0	2
Lubavich on the Palisades	0	0	0	0	0	0	1	0	1

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Malcolm Mackay Elementary School	1	0	0	0	0	0	1	0	2
Ralph Maugham Elementary School	1	0	0	0	0	0	1	0	2
Richard Street Sewage Pump Station	0	0	0	0	0	0	1	0	1
SMA Fathers African Mission	1	0	0	0	0	0	1	0	2
Tenaflly Borough Hall	0	0	0	0	0	0	1	0	1
Tenaflly D.P.W	0	1	0	0	0	0	1	0	2
Tenaflly Fire Department	0	0	0	0	0	0	1	0	1
Tenaflly High School	1	0	0	0	0	0	1	0	2
Tenaflly Middle School	1	0	0	0	0	0	1	0	2
Tenaflly Police Dept.	0	0	0	1	0	0	1	0	2
Tenaflly Volunteer	0	0	0	0	0	0	1	0	1
Verizon Switching Center	0	0	0	0	0	0	0	0	0
Walter Stillman Elementary School	1	0	0	0	0	0	1	0	2
Teterboro									
Bergen County Animal	1	2	0	0	1	0	1	0	5
Bergen County Technical H.	0	2	0	0	1	0	1	0	4
Bergen County Youth Complex (JDC)	0	1	0	0	1	0	1	0	3
Municipal Building	0	2	0	0	1	0	1	0	4
Public Works Facility	0	2	0	0	0	0	1	0	3
Sewer & Storm Water Pumping Station	0	2	0	0	1	0	0	0	3
Teterboro Airport	0	2	0	0	1	0	1	0	4
Upper Saddle River									
Municipal Complex	0	0	0	0	0	0	1	0	1
Police Headquarters	2	0	0	0	0	0	1	2	5
Waldwick									
7th Day Adventist School	0	0	0	0	0	0	1	0	1
Borough Administration	0	0	0	0	0	0	1	0	1
Building Block Child Center	1	0	0	0	0	0	1	0	2
Company #2 Fire House	0	0	0	0	0	0	1	0	1
Crescent Avenue	0	0	0	0	0	0	1	0	1
Crescent Grammar School	0	0	0	0	0	0	1	0	1
Department of Public Works	1	0	0	0	0	0	1	0	2
Emergency Operations	0	0	0	0	0	0	1	0	1
Forum School	0	1	0	0	0	0	1	0	2
Franklin Turnpike	0	1	0	0	0	0	1	1	3
Little School	0	0	0	1	0	0	1	0	2

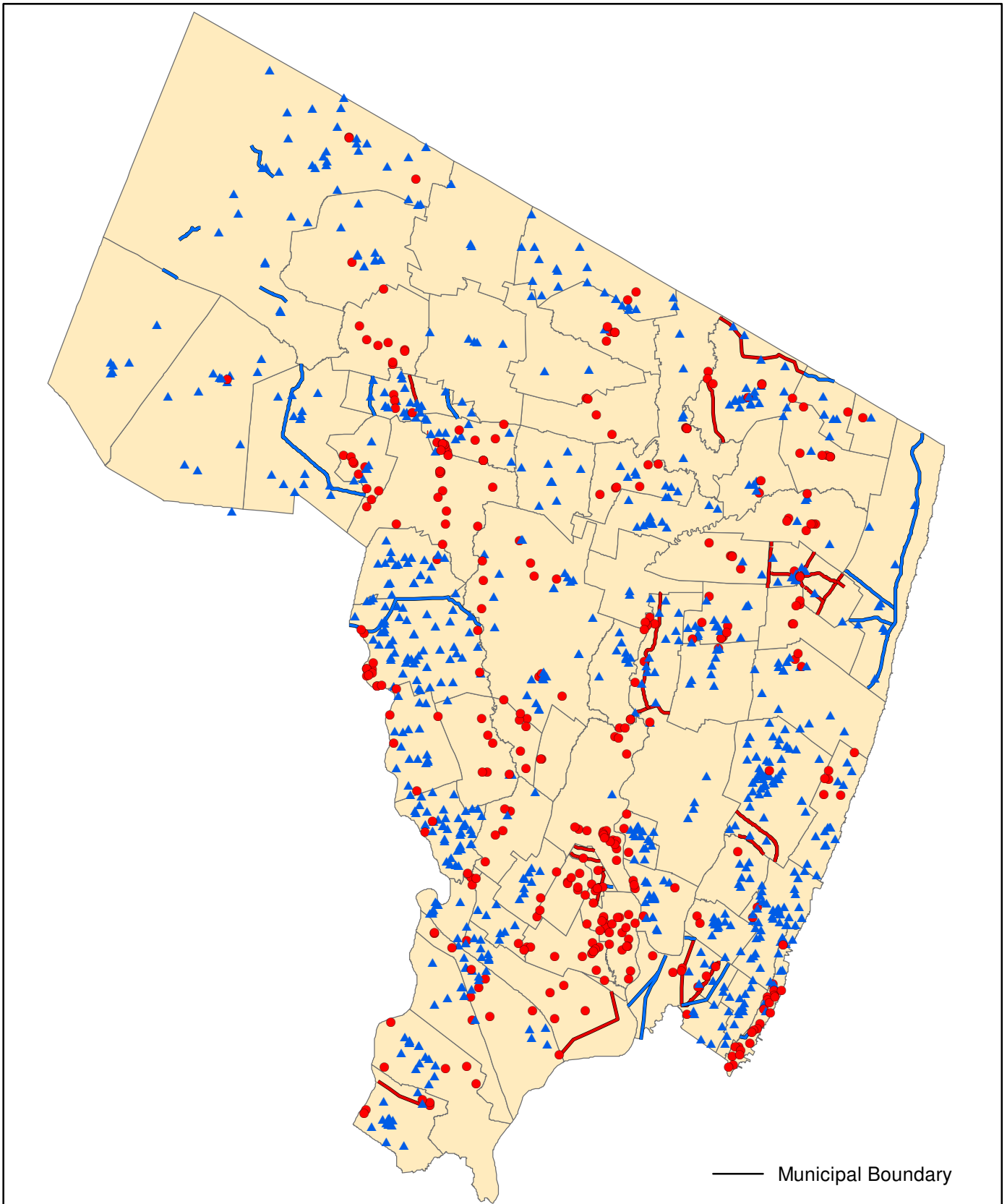
Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Northwest Bergen Utilities Authority	0	3	0	0	0	0	0	0	3
PSE&G Substation	0	0	0	0	0	0	0	0	0
Rainbow Corners Cooperative Nursery	1	0	0	0	0	0	1	0	2
Route 17 State Highway	0	0	0	0	1	0	0	0	1
Small World Day Care	1	0	0	0	0	0	1	0	2
Traphagen Grammar School	0	0	0	0	0	0	0	0	0
Village School	0	2	0	0	0	0	1	0	3
Waldwick Ambulance Corp.	0	0	0	0	0	0	0	0	0
Waldwick Fire Dept. Company #1	0	0	0	0	0	0	1	0	1
Waldwick Middle/High (Shelter)	1	0	0	0	0	0	1	0	2
Waldwick Middle/High	0	0	0	0	0	0	1	0	1
Waldwick Police	0	0	0	0	0	0	1	0	1
Waldwick Train Station	0	0	0	0	0	0	0	1	1
Well (Hopper Ave.)	0	0	0	0	0	0	0	0	0
Well (Malcolm St.)	0	0	0	0	0	0	0	0	0
Well (Schuler Ave)	0	0	0	0	0	0	0	0	0
Well (W. Prospect St.)	0	0	0	0	0	0	0	0	0
Well (Whites Ln.)	0	0	0	0	0	0	0	0	0
White Pond Dam	0	2	0	0	0	0	1	0	3
Wallington									
Emergency/ Ambulance	0	null	null	0	0	0	1		1
Farmland Dairies	0	1	0	0	0	0	1	1	3
Fire House	0	null	null	0	0	0	1	null	1
Fire House	0	null	null	0	0	0	null	null	0
Fire/ Emergency Co.	0	null	null	0	0	0	1	null	1
Municipal Offices	0	null	null	0	0	0	null	null	0
Old VFW Building	0	null	null	0	0	0	null	null	0
Out Building	0	null	null	0	0	0	null	null	0
Police/ Admin Building	0	null	null	0	0	0	null	null	0
Public Works/ Library	0	null	null	0	0	0	null	null	0
Water Pump Station	0	null	null	0	0	0	null	null	0
Water Pump Station	0	null	null	0	0	0	null	null	0
Washington									
Immaculate Heart Academy (High School)	0	0	0	0	0	1	1	0	2
Jesse F. George School	0	0	0	0	0	1	1	0	2
Twp. of Washington Police Dept.	1	0	0	0	0	0	1	1	3

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Twp. of Washington Police Dept. Communications	2	0	0	0	0	0	1	1	4
Washington Department of Public Works	2	0	0	0	0	0	1	0	3
Washington Grand	1	0	0	0	0	0	1	0	2
Washington Municipal Building	2	0	0	0	0	0	1	0	3
Washington School (Elementary)	0	0	0	0	0	1	1	0	2
Washington Volunteer Ambulance Corps.	2	0	0	0	0	0	1	0	3
Washington Volunteer Fire Department	1	0	0	0	0	1	1	1	4
Westwood Jr/Sr High School	1	0	0	0	0	0	1	0	2
Westwood									
Berkeley School	1	1	0	1	0	0	1	0	4
Brookside School	1	1	0	1	0	0	1	0	4
Care One at Valley	1	0	0	1	0	0	1	0	3
Hackensack UMC at Pascack Valley	1	0	0	1	0	0	1	1	4
Ketler School	1	2	0	1	1	0	2	0	7
Kurt Versen Company	1	0	0	1	0	0	1	1	4
Lanman & Kemp-Barclay &	1	0	0	1	0	0	1	1	4
Rockland Coaches	1	0	0	1	0	0	1	0	3
Westwood DPW	0	2	0	1	0	0	1	0	4
Westwood Fire Dept	0	0	0	1	0	0	1	0	2
Westwood Municipal	0	0	0	1	0				1
Westwood Recreational Dept. Pre-School	1	0	0	1	0	0	1	0	3
Westwood Regional Middle School	1	1	0	1	0	0	1	0	4
Westwood Substation	0	2	0	0	0	0	1	0	3
Zion Lutheran Church	1	0	0	1	0	0	1	0	3
Woodcliff Lake									
Borough Complex/Police and Fire Dept.	2	0	0	0	0	0	1	0	3
DPW Garage and Recycling Center	0	0	0	0	0	0	0	0	0
Tice Senior Center & EOC	0	0	0	0	0	0	1	0	1
Dam	0	2	0	0	0	1	0	0	3
Wood-Ridge									
10th St. Pump Station	0	0	0	0	1	0	0	0	1

Facility Name	Highwinds	Flooding	Stormsurge	Drought	Earthquake	Landslide	Winterstorm	Fire	Total
Anderson Ave. Pump Station	0	2	3	0	1	0	0	0	6
Arnot Place Pump Station	0	0	0	0	1	0	0	0	1
Assumption Church	0	0	0	0	1	0	1	1	3
Borough Hall	1	0	0	0	1	0	1	1	4
Catherine E. Doyle School	0	0	0	0	1	0	1	1	3
Department of Public Works	0	2	3	0	1	0	1	1	8
Wood-Ridge High School	0	0	0	0	1	0	1	1	3
Woodridge Intermediate School	0	0	0	0	1	0	1	1	3
Wyckoff									
Cellular Tower	0	0	0	0	0	0	1	0	1
Christian Health Care Center	1	0	0	0	0	0	2	1	4
Coolidge School	1	0	0	1	0	0	1	1	4
Eisenhower School	1	0	0	1	0	0	1	1	4
Lincoln School	0	0	0	1	0	0	1	0	2
Sicomac School	0	0	0	0	1	0	1	0	2
Town Hall/Police Dept./Communication	1	0	0	0	1	0	1	0	3
Washington School	0	0	0	1	0	0	1	0	2
Wyckoff Ambulance Corp. Building	1	0	0	0	1	0	1	0	3
Wyckoff Avenue	0	0	0	0	0	0	0	0	0
Wyckoff DPW Building	1	0	0	1	0	0	1	0	3
Wyckoff Fire Co. #1	0	0	0	1	1	0	1	0	3
Wyckoff Fire Co. #2	0	0	0	1	1	0	1	0	3
Wyckoff Fire Co. #3	1	0	0	1	1	0	1	0	4
Wyckoff Public Library	1	0	0	1	0	0	1	1	4
Wyckoff YMCA	0	0	0	1	0	0	1	0	2

Appendix E: Bergen County Critical Facility Vulnerability Maps

Bergen County, New Jersey Vulnerability Assessment Critical Facility Vulnerability to Flooding



Critical Facility Vulnerable
to Flooding

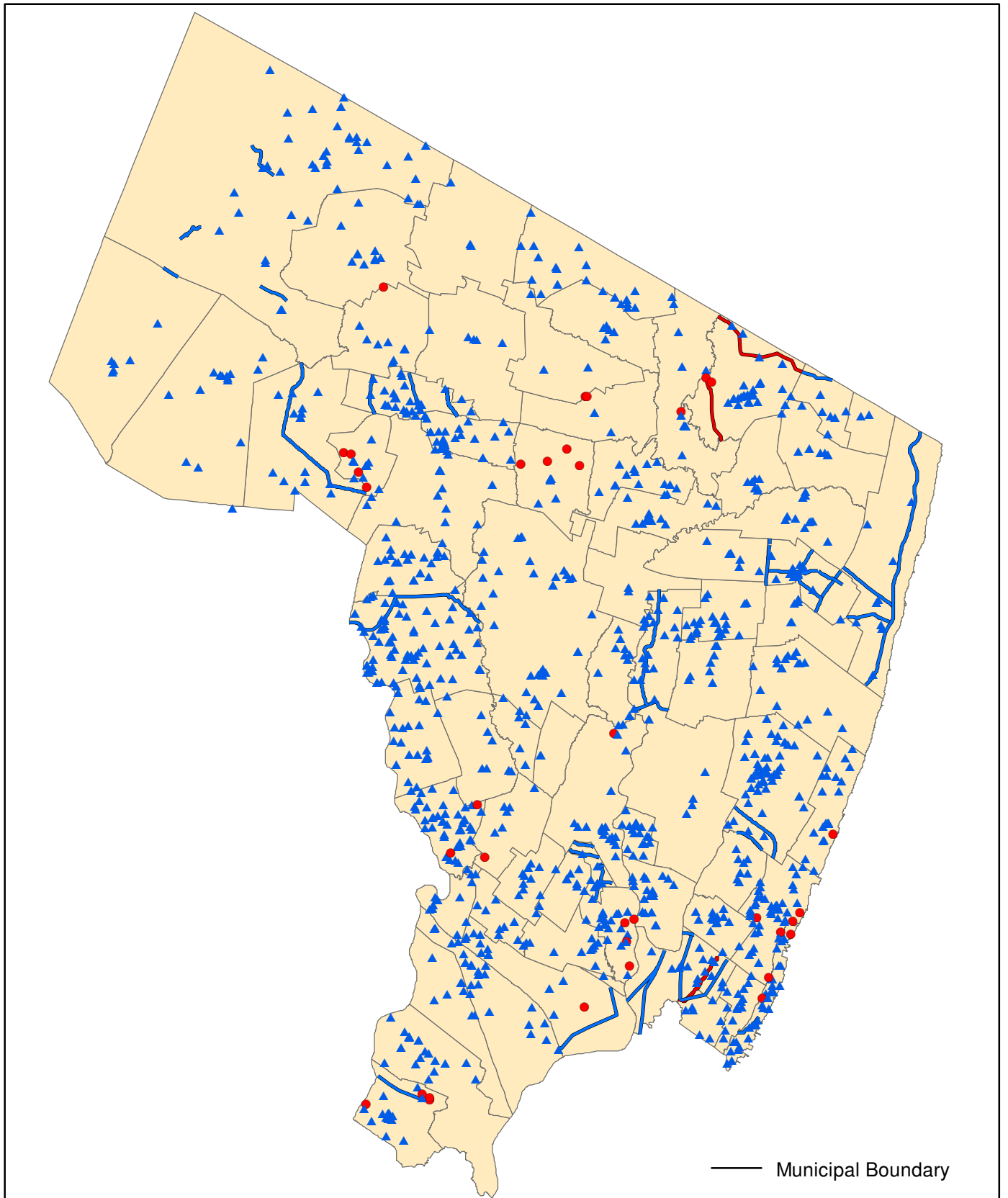
—▲ NO

—★ YES

0 1 2 3 4 5 Miles

This map was created using data submitted by town officials and is provided for representation purposes only.
For information on map content and accuracy, contact the NJMC-MERI GIS Department at merigis@njmeadowlands.gov or 201-460-4612.

Bergen County, New Jersey Vulnerability Assessment Critical Facility Vulnerability to Landslide/Mudslide



New Jersey Meadowlands Commission
ENVIRONMENTAL RESEARCH INSTITUTE



Critical Facility Vulnerable
to Landslides

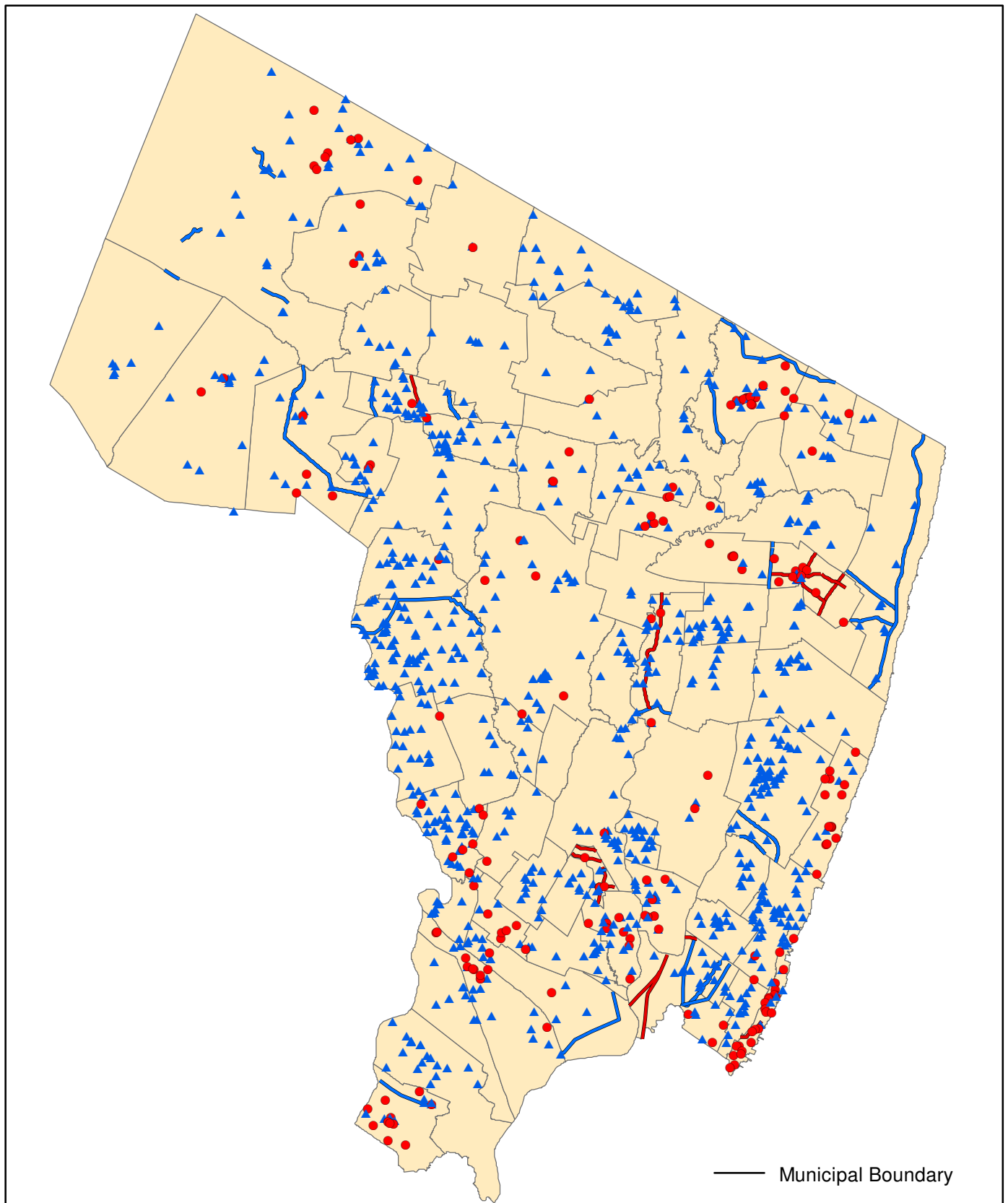
—▲ NO

—★ YES

0 1 2 3 4 5 Miles

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Bergen County, New Jersey Vulnerability Assessment Critical Facility Vulnerability to Major Fire



Critical Facility Vulnerable
to Major Fire

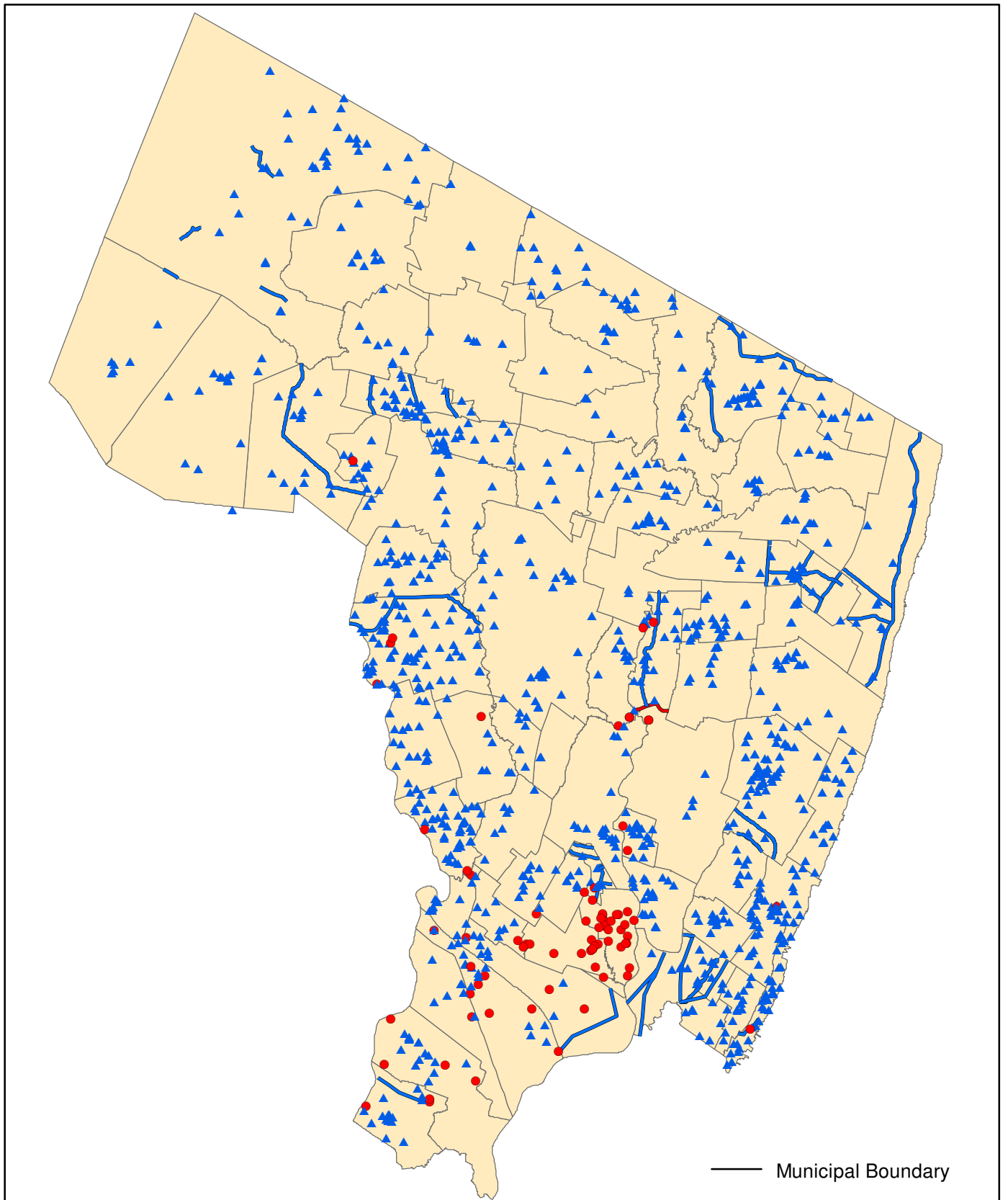
—▲ NO

—★ YES

0 1 2 3 4 5 Miles

This map was created using data submitted by town officials and is provided for representation purposes only. For information on map content and accuracy, contact the NJMC-MERI GIS Department at merigis@njmeadowlands.gov or 201-460-4612.

Bergen County, New Jersey Vulnerability Assessment Critical Facility Vulnerability to Storm Surge



New Jersey Meadowlands Commission
ENVIRONMENTAL RESEARCH INSTITUTE



Critical Facility Vulnerable
to Storm Surge

—▲ NO

—★ YES

This map was created using data submitted by town officials and is provided for representation purposes only.

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Appendix F: Bergen County Letters of Intent- Summary

LOI's Submitted Under Hurricane Sandy DR-4086

Applicant Name	Type	Title	Amount
Bergen Community College	Generator	Bergen Community College: Generators for County Shelter	\$250,000.00
Bergen County	Generator	Bergen County Generator: Police Department	\$525,000.00
Bergen County	Generator	Bergen County Generator: Administrative Building	\$1,600,000.00
Bergen County	Generator	Bergen County Generator: DPW Complex	\$325,000.00
Bergen County	Generator	Bergen County Generator: Law & Public Safety	\$200,000.00
Bergen County	Generator	Bergen County: New Agency Building	\$725,000.00
Bergen County	Generator	Bergen County Generator: New Maintenance Garage	\$75,000.00
Bergen County	Generator	Bergen County Generator: Special Transportation	\$125,000.00
Bergen County	Generator	Bergen County Generator: Prosecutors Office	\$625,000.00
Bergen County	Drainage	Bergen County Department of Public Works Flood Control - Flood Protection for Tide Gate Controls	\$300,000.00
Bergen County	Planning	Bergen County Strategic Planning Study for Systematic Mitigation Planning	\$100,000.00
Bergen County	Elev Other	Bergen County--Saddle Brook River Bridge Replacements	\$18,700,000.00
Bergen County	Elev Other	Bergen County - Marcellus Street Bridge Improvements	\$170,855.00
Bergen County	Generator	One Bergen Plaza Generator Project	\$2,269,500.00
Bergen County Department of Public Works	Drainage	DPW - Flood Protection for Tide Gate Controls	\$300,000.00
Bergen County Department of Public Works	Generator	Bergen County DPW - Emergency Power Supply for Traffic Signals	\$1,593,600.00
Bergen County Technical And Special Services	Generator	Bergen County Technical Schools: Generators for Emergency Shelter	\$117,000.00
Bergen County Technical And Special Services	Planning	Bergen County: Strategic Planning Study for Systematic Mitigation Planning	\$100,000.00
Bergen County Utilities Authority	Generator	Bergen County Utilities Authority (BCUA) Multiple Mitigation Measures	\$30,000,000.00

Bergen County Utilities Authority	Elev Other	Substation No. 5 Asset Elevation Project	\$2,980,561.00
Bergen County Utilities Authority	Floodproofing	Main Pump Station No. 2 Dry Floodproofing Project	\$1,502,723.00
Bergenfield Borough	ANS	Outdoor Warning System	\$215,000.00
Bogota Borough	Drainage	Bogota Flood Control (Drainage Pipe Installation)	\$2,500,000.00
Bogota Borough	Drainage	Bogota Flood Control	\$2,000,000.00
Bogota Borough	Drainage	Bogota Project Type Selection of "Other" (No Description Provided)	\$2,000,000.00
Carlstadt Borough	Drainage	Carlstadt Flood Control (Outfall Check Valves)	\$1,102,000.00
Carlstadt Borough	Drainage	Carlstadt Flood Control	\$17,635,000.00
Carlstadt Borough	Generator	Carlstadt Generators for Shelters	\$2,622,000.00
Carlstadt Borough	Generator	Carlstadt Town Hall Generators	\$675,000.00
Carlstadt Borough	Generator	Carlstadt Firehouse Generator	\$225,000.00
Carlstadt Borough	Generator	Carlstadt Portable and Towable Generators	\$610,200.00
Carlstadt Borough	Generator	Carstadt Generators for Critical Facilities	\$82,350.00
Carlstadt Sewerage Authority	Drainage	Carlstadt Sewerage Authority (Sanitary Collection and Pumping Station Improvements)	\$1,500,000.00
Cliffside Park Borough	Generator	Cliffside Park	\$115,000.00
Cliffside Park Borough	Generator	Borough of Cliffside Park " Emergency Generators (2)	\$168,135.00
Closter Borough	Generator	Closter Library and Senior Center Generator	\$120,000.00
Closter Borough	Generator	Closter Public Works Generator	\$165,000.00
Closter Borough	Generator	Closter Borough - Energy Allocation (To be revised)	\$90,000.00
Cresskill Borough	Generator	Generator for Shelters/Weather Detection System	\$225,000.00
Demarest Public School	Generator	Northern Valley Regional High School (NVRHS) Generator	\$385,000.00
Dumont Borough	Generator	Dumont Generator	\$76,000.00
East Rutherford Borough	Floodproofing	East Rutherford Floodproofing of Residential Structure	\$40,000.00
East Rutherford Borough	Drainage	East Rutherford Flood Control	\$2,900,000.00
East Rutherford Borough	Generator	East Rutherford Pump Station Generator	\$167,333.00

East Rutherford Borough	Generator	East Rutherford Civic Center Generator	\$167,300.00
East Rutherford Borough	Generator	Emergency Generator at Carlton Fire House	\$134,075.00
Edgewater Borough	Generator	Edgewater Generator for Pump station #4	\$90,000.00
Edgewater Borough	Generator	Edgewater Generator for Fire Company #1	\$90,000.00
Edgewater Borough	Drainage	Edgewater Flood Doors - Marina	\$26,550.00
Edgewater Borough	Drainage	Edgewater Flood Doors: Community Center	\$17,250.00
Edgewater Borough	Drainage	Edgewater Flood Doors: Borough Hall	\$30,300.00
Edgewater Borough	Drainage	Edgewater Flood Control: River Road	\$10,000,000.00
Edgewater Borough	Generator	Edgewater Generator - Pump Station #4 (UPDATE)	\$120,000.00
Edgewater Borough	Generator	Edgewater - Generator - Fire Company #1	\$120,000.00
Edgewater Borough	Floodproofing	(UPDATE) Edgewater - Flood Control - Marina Flood Doors	\$35,400.00
Edgewater Borough	Floodproofing	(UPDATED) Edgewater - Flood Control- Borough Hall Flood Doors	\$40,400.00
Edgewater Borough	Floodproofing	(UPDATED) Edgewater - Flood Control - Community Center Flood Doors	\$23,000.00
Edgewater Borough	Generator	Edgewater Borough Energy Allocation (To be revised)	\$75,000.00
Edgewater Borough School District	Generator	Edgewater Board of Education - Generator : George Washington School	\$480,000.00
Edgewater Borough School District	Generator	Edgewater Board of Education: Generator - Eleanor Van Gelder School	\$530,000.00
Edgewater Borough School District	Generator	Edgewater Board of Education - Generator - George Washington School	\$480,000.00
Edgewater Borough School District	Generator	Edgewater Board of Education - Eleanor Van Gelder	\$530,000.00
Elmwood Park Borough	Drainage	Elmwood Park Flood Control: Dredging of Fleischers Brook	\$250,000.00
Elmwood Park Borough	Drainage	Elmwood Park Flood Control: Pump Station #6 Improvements	\$400,000.00
Emerson Borough	Generator	Emerson Generator - Shelter at 20 Palisade Ave	\$45,000.00
Emerson Borough	Generator	Emerson Generator - Fire Dept	\$100,000.00

Emerson Borough	Drainage	Emerson Flood Control: Localized Flood Reduction on Forest Ave (County Rd 0013)	\$160,000.00
Emerson Borough	Generator	Borough of Emerson Portable Generators (2) and Transfer Switches (2)	\$101,021.00
Englewood City	Generator	Englewood Generator(s)	\$110,000.00
Englewood Cliffs Borough	Generator	Borough of Englewood Cliffs Emergency Generators for Critical Facilities	\$76,716.10
Fair Lawn Board Of Education	Generator	Fair Lawn BOE Eney Allocation (To be revised)	\$18,000.00
Fair Lawn Borough	Generator	Fair Lawn Generators	\$250,000.00
Fair Lawn Borough	Generator	Fair Lawn Standby Emergency Generators	\$400,000.00
Fair Lawn Borough	Drainage	Fair Lawn Sump Pump	\$18,000.00
Fair Lawn Borough	Drainage	Fair Lawn Flood Control: Installation of Flood Control Valves	\$200,000.00
Fairview Borough	Generator	Borough of Fairview emergency generator for critical facilities	\$150,000.00
Fairview Borough	Drainage	Fairview Flood Control: DPW Facility	\$500,000.00
Fort Lee Board of Education	Generator	Fort Lee Public Schools - Generator	\$1,000,000.00
Fort Lee Borough	Generator	Fort Lee Energy Allocation - To be revised	\$75,000.00
Franklin Lakes Borough	Other	Franklin Lakes Equipment - Monitoring Equipment for Class 1 Dam	\$300,000.00
Garfield City	Acq Demo Building	Garfield Acquisition of 6 Properties	\$3,100,000.00
Garfield City	Generator	Garfield Generator: Fire Co #5	\$75,000.00
Garfield City	Generator	Garfield Generator - Fire Co 1	\$75,000.00
Garfield City	Generator	Garfield Generator - Fire Co 3	\$75,000.00
Garfield City	Generator	Garfield Generator - Recreational Center (Emergency Shelter)	\$100,000.00
Garfield City	Generator	Garfield -Generator - DPW	\$175,000.00
Garfield City	Generator	Garfield City Energy Allocation (To be revised)	\$75,000.00
Glen Rock Borough	Drainage	Glen Rock Flood Control - Pump Replacement	\$202,500.00
Hackensack City	Generator	Hackensack Generators - Public Safety Bldgs, Shelters, & Pump House	\$575,000.00

Hackensack City	Drainage	Hackensack Flood Control: Dredge Coles Brook & Riser Ditch	\$456,000.00
Hackensack City	Drainage	Hackensack Flood Control - Storm Water Facility	\$250,000.00
Hackensack City	Generator	City of Hackensack- Generator Project	\$93,915.00
Hackensack City	Generator	Hackensack Public Works Generator	\$18,000.00
Hackensack City	Generator	Hackensack	\$25,000.00
Hackensack Housing Authority	Generator	Hackensack Housing Authority Generator	\$60,000.00
Harrington Park Borough	Generator	Borough of Harrington Park Generators	\$75,000.00
Harrington Park Borough	Drainage	Harrington Park Flood Control - Multiple Projects	\$4,226,000.00
Hasbrouck Heights Borough	Generator	Hasbrouck Heights	\$195,000.00
Haworth Borough	Generator	Haworth Generator	\$58,500.00
Haworth Borough	ANS	Haworth Lightning Detection System	\$45,750.00
Hillsdale Borough	Acq Demo Building	Hillsdale Acquisition of 17 Structures	\$7,735,400.00
Hillsdale Borough	Generator	Hillsdale Generator	\$60,000.00
Hohokus Borough	Drainage	Ho-Ho-Kus Flood Control	\$25,500.00
Leonia Borough	Generator	Leonia Generators - Recreation Center	\$30,000.00
Leonia Borough	Generator	Leonia Public Works Generator	\$30,000.00
Little Ferry Borough	Generator	Generator for Main Street Pump Station	\$150,000.00
Little Ferry Borough	Generator	Generator for Willow Lake Pump Station	\$150,000.00
Little Ferry Borough	Generator	Generator for Memorial School	\$1,200,000.00
Little Ferry Borough	Drainage	Installation of Tide Gate at Newark Bay	\$3,000,000.00
Little Ferry Borough	Generator	Municipal Complex Generator	\$199,450.00
Little Ferry Borough	Drainage	Installation of an automatic self cleaning grating system to the Losen Slote Pump Station	\$400,000.00
Little Ferry Borough	Drainage	Willow Lake Dredging & Expansion	\$1,500,000.00
Little Ferry Borough	Drainage	Soil Stabilization at First Aid Station Bldg	\$150,000.00
Little Ferry Borough	Drainage	Cleaning and de-snagging of drainage ditches.	\$4,500,000.00
Little Ferry Borough	Drainage	Main Street Corridor Storm Water System Upgrades	\$500,000.00
Little Ferry Borough	Drainage	New Construction of Storm Water Pump Station and Check Valve	\$2,000,000.00

Little Ferry Borough	Drainage	Install drainage at Robby Road Park	\$150,000.00
Little Ferry Borough	Drainage	Install drainage at Robby Rd Park	\$125,000.00
Lodi Borough	Generator	Lodi - Generators for Sewer Pump Stations	\$125,000.00
Lodi Borough	Generator	Lodi Generator & Heater/AC Unit for EOC & Police Station	\$120,000.00
Lodi Borough	Generator	Lodi Generators - 3 Fire Stations	\$120,000.00
Lodi Borough	Elev Other	Lodi - Utilities Elevation at Residential Structure	\$15,000.00
Lodi Borough	Generator	Energy Allocation - Generators	\$245,000.00
Lyndhurst Township	Acq Demo Building	Lyndhurst Acquisition of 4 Structures	\$1,400,000.00
Lyndhurst Township	Elev Building	Lyndhurst Elevation of Residences along the Passaic River	\$3,520,000.00
Lyndhurst Township	Drainage	Lyndhurst Improvements to Pumping Stations #1, 2, & 4	\$2,884,840.00
Lyndhurst Township	Drainage	Lyndhurst Flood Control (Riverbank Improvements along the Passaic River)	\$60,000,000.00
Lyndhurst Township	Drainage	Lyndhurst Flood Control (Backflow preventers at existing stormwater outfall locations)	\$1,200,000.00
Lyndhurst Township	Generator	Lyndhurst Generator - Shelter	\$68,470.00
Lyndhurst Township	Elev Other	Lyndhurst Elevation of Generators - Sloan-Kettering Cancer	\$650,000.00
Mahwah Township	Acq Demo Building	Mahwah Acquisition of 18 Structures	\$5,500,000.00
Mahwah Township	Acq Demo Building	Mahwah Acquisition of 5 Structures	\$1,800,000.00
Mahwah Township	Elev Building	Mahwah Elevation of 1 Structure	\$175,000.00
Mahwah Township	Generator	Mahwah Township Hall Generators	\$93,000.00
Mahwah Township	Drainage	Mahwah - Flood Control (Multiple Projects)	\$5,930,000.00
Mahwah Township	Drainage	(UPDATED) Mahwah - Flood Control - Multiple Projects	\$13,430,000.00
Mahwah Township	Generator	Mahwah Township Well Generators	\$93,000.00
Mahwah Township	Generator	Energy Allocation - Generators	\$186,000.00
Mahwah Township	Generator	Mahwah Township - Generator for Administration Building (Shelter Portion)	\$93,000.00
Maywood Borough	Generator	Maywood Towable Generators	\$170,000.00
Maywood Borough	Generator	Maywood Senior Center Generator	\$75,000.00
Maywood Borough	Generator	Maywood Public Works Generator	\$75,000.00

Midland Park Board of Education	Generator	Midland Park BOE Emergency Shelter Generator - Midland Park High School	\$125,000.00
Midland Park Borough	Generator	Midland Park Generator	\$40,000.00
Montvale Borough ¹	Generator	Montvale Generator	\$385,000.00
Moonachie Borough	Elev Building	Moonachie Elevation of Municipal Building	\$4,500,000.00
Moonachie Borough	Generator	Moonachie Generator - Lincoln Street	\$250,000.00
Moonachie Borough	Elev Other	Moonachie - Elevation of Moonachie Rd Station Generator	\$150,000.00
Moonachie Borough	Elev Other	Moonachie - Elevation of Mechanicals	\$125,000.00
Moonachie Borough	Elev Other	Moonachie Elevation of Fire House's Electrical Infrastructure	\$50,000.00
Moonachie Borough	Elev Other	Moonachie- Elevation of Boilers	\$500,000.00
Moonachie Borough	Drainage	Moonachie Flood Control - Town-Wide Dredging Program	\$4,300,000.00
Moonachie Borough	Drainage	Moonachie Flood Control - Berm Construction	\$1,300,000.00
New Milford Borough	Acq Demo Building	New Milford Acquisition/Elevation of 37 Structures	\$12,500,000.00
New Milford Borough	Elev Building	New Milford Elevation/Acquisition of 37 Structures	\$12,500,000.00
New Milford Borough	Drainage	New Milford Flood Control - Hirschfeld Brook Flood Control Project	\$1,700,000.00
North Arlington Borough	Drainage	North Arlington - Flood Control - Backflow Preventers	\$2,178,000.00
North Arlington Borough	Drainage	North Arlington - Flood Control - Drainage System Improvements	\$0.00
North Arlington Borough	Drainage	North Arlington - Generator - Clayton Block Pumping Station	\$68,984.00
North Arlington Borough	Generator	North Arlington Generator - Eagles Fire Company	\$45,365.00
North Arlington Borough	Generator	North Arlington - Generator - EMS Building	\$45,365.00
North Arlington Borough	Generator	North Arlington - Generator - Police Department	\$85,885.00
North Arlington Borough	Generator	North Arlington - Generator - DPW	\$43,365.00
North Arlington Borough	Drainage	North Arlington-Flood Control- Flood Wall	\$1,748,175.00
North Arlington Borough	Elev Other	North Arlington Disposal Road Main Breaker Replacement	\$60,000.00

North Arlington Borough	Elev Other	North Arlington Disposal Road Pump Station Protection/Relocation	\$60,000.00
North Arlington Borough	Generator	North Arlington Energy Allocation (To be revised)	\$75,000.00
Northern Valley Regional High	Generator	NVRHS - Emergency Generator for Shelter (NVR High School)	\$385,000.00
Northvale Borough ¹	Generator	Northvale - Generator- Fire Department	\$30,000.00
Northvale Borough ¹	Generator	Northvale - Generator - Ambulance Corps	\$30,000.00
Norwood Borough	Generator	Norwood - Portable Generators - Multiple	\$395,000.00
Norwood Borough	Generator	Norwood Permanent Generators - Multiple	\$320,000.00
Norwood Borough	Generator	Norwood Energy Allocation (To be revised)	\$75,000.00
Oakland Borough	Generator	Oakland - Generators	\$62,000.00
Oakland Borough	Generator	Oakland Borough Hall Generator	\$150,680.00
Oakland Borough	Generator	Oakland Senior Center Generator	\$57,000.00
Old Tappan Borough	Generator	Old Tappan Generators - Police Dept & DPW	\$150,000.00
Paramus Borough	Generator	Paramus Generators	\$25,000.00
Paramus Borough	Generator	Paramus Borough Hall Generator	\$176,000.00
Ramsey Borough	Generator	Ramsey Generators	\$361,000.00
Ramsey Borough	Drainage	Ramsey Flood Control - Crystal Spring Lake Dam Spillway and Gate Valve	\$1,000,000.00
Ridgefield Borough	Generator	Ridgefield Generator - DPW	\$150,000.00
Ridgefield Borough	Generator	Ridgefield Ambulance Squad and Firehouse Generators	\$225,000.00
Ridgefield Borough	Generator	Ridgefield Community Center Generator	\$150,000.00
Ridgefield Borough	Generator	Ridgefield Public Works Generator	\$150,000.00
Ridgefield Borough	Generator	Borough of Ridgefield Emergency Generators	\$121,437.00
Ridgefield Park Village	Generator	Ridgefield Park Generators - Multiple	\$120,000.00
Ridgefield Park Village	Drainage	Ridgefield Park - Flood Control - Multiple	\$140,000.00
Ridgefield Park Village	Generator	Ridgefield Park Shelter	\$140,000.00
Ridgefield Park Village	Generator	Ridgefield Park Public Works Generator	\$140,000.00
Ridgewood Village	Generator	Ridgewood Generators - Multiple	\$75,000.00

River Edge Borough	Generator	River Edge Generator	\$50,000.00
Rochelle Park Township	Acq Demo Building	Rochelle Park Acquisition of Postal Facility	\$1,500,000.00
Rochelle Park Township	Generator	Rochelle Park - Generator - Midland Park	\$34,000.00
Rochelle Park Township	Wind Retrofit	Rochelle Park Retrofit	\$14,000.00
Rochelle Park Township	Generator	Township of Rochelle Park Communication Emergency Generator Power Supply	\$20,841.00
Rockleigh Borough	Generator	Rockleigh Generator & Shower	\$246,000.00
Rutherford Borough	Elev Other	Rutherford Elevation of Road	\$3,000,000.00
Saddle Brook Township	Acq Demo Building	Saddle Brook Acquisition of 8 Structures	\$3,000,000.00
Saddle Brook Township	Generator	Saddle Brook Shelter Generator	\$87,500.00
Saddle Brook Township	ANS	Warning System	\$60,000.00
Saddle Brook Township	Generator	Saddle Brook Town Hall Generator	\$58,333.00
Saddle Brook Township	Generator	Saddle Brook Energy Allocation (To be revised)	\$75,000.00
Saddle River Borough	Generator	Saddle River Generator	\$75,000.00
South Hackensack Township	Elev Other	South Hackensack Elevation of Sewage Pump Station	\$1,812,000.00
South Hackensack Township	Elev Other	South Hackensack: Replace/Elevate of Saddle River Bridge	\$5,980,000.00
South Hackensack Township	Generator	South Hackensack Generators	\$510,000.00
South Hackensack Township	Drainage	South Hackensack Flood Control - Drainage Ditch Dredging Program	\$2,800,000.00
South Hackensack Township	Drainage	South Hackensack Flood Reduction Project	\$2,500,000.00
Spectrum Group Living Homes	Generator	Spectrum for Living Group Homes - Generators (Bergen County)	\$132,000.00
Tenafly Borough	Generator	Tenafly - Generator - Mount Carmel School	\$60,000.00
Tenafly Borough	Generator	Tenafly - Generators for Critical Facilities	\$1,090,000.00
Upper Saddle River Board of Education	Generator	Upper Saddle River BOE Energy Allocation	\$75,000.00
Upper Saddle River Borough	Generator	Upper Saddle River Generators	\$60,000.00
Upper Saddle River Borough	Generator	Upper Saddle River Borough Hall Generator	\$60,000.00
Wallington Borough ¹	Planning	Wallington Planning - Community Resiliency Plan	\$350,000.00

Wallington Borough ¹	Generator	Wallington Generator - Civic Center	\$330,000.00
Wallington Borough ¹	Generator	Wallington Generator - Sewer Pump Station on Currie Avenue	\$110,000.00
Wallington Borough ¹	Generator	Wallington Generator - Sewer Pump - Spring Street	\$110,000.00
Washington Townsh ¹ ip	Generator	Washington - Generators -Municipal and Road Buiding	\$100,000.00
Washington Townsh ¹ ip	ANS	Warning Systems	\$75,000.00
Washington Township ¹	Generator	Washington Township Ambulance Building	\$50,000.00
Washington Township ¹	ANS	Portable Police Traffic Signs	\$75,000.00
Washington Township ¹	Generator	Portable Generator Light Towers	\$100,000.00
Washington Township ¹	Generator	Installation of Permanent Generator at Fire Station	\$64,900.00
Westwood Borough	Generator	Westwood Generator - Borough Shelter	\$125,000.00
Wood-Ridge Borough	Acq Relo	Wood-Ridge Acquisition/Relocation of DPW Facility	\$560,000.00
Wood-Ridge Borough	Generator	Wood-Ridge - Generator- Pump Station at 10th St + Sussex Rd	\$31,021.00
Wood-Ridge Borough	Generator	Wood-Ridge - Generator- Pump Station at E. Park and Anderson	\$35,695.00
Wood-Ridge Borough	Generator	Wood-Ridge - Generator - Civic/Senior Center	\$63,935.00
Woodcliff Lake Borough	Generator	Woodcliff Lake - Police and Fire Generators	\$160,000.00
Woodcliff Lake Borough	Generator	Woodcliff Lake Public Works and Borough Hall Generator	\$160,000.00
Woodcliff Lake Borough	Generator	Woodcliff Lake Tice Senior Citizen Center Generator	\$80,000.00
Woodcliff Lake Borough	Generator	Woodcliff Lake Energy Allocation (To be revised)	\$100,000.00
Wyckoff Township ¹	Generator	Wyckoff - Generators	\$200,000.00
Wyckoff Township ¹	Drainage	Wyckoff - Flood Control - HoHoKus Brook	\$50,000.00
Wyckoff Township ¹	Generator	Wyckoff Police and Fire Hall Generator	\$500,000.00
Wyckoff Township ¹	Generator	Wyckoff Public Works Generator	\$75,000.00

¹Referenced in "Attachment A" as having no new or cArry-over mitigation actions

Appendix G: Bergen County Introduction Text

Settled by the Dutch, Bergen County (Bergen, County) was created in 1683 as one of New Jersey's four original counties. Located in the northeastern corner of New Jersey, it is bordered by the Hudson River and New York City to the east, New York State to the north, Passaic County to the west, Hudson County to the south and Essex County at the southwestern corner.

The diverse landscape includes the scenic cliffs of the Palisades overlooking the Hudson River, the Ramapo Mountains of the New Jersey Highlands, the Ramapo River, Saddle River and Hackensack River valleys, the urban wetlands of the New Jersey Meadowlands, and three reservoir areas at Woodcliff Lakes, Lake Tappan and Oradell. Bergen County is comprised of 70 municipalities covering a total area of approximately 247 square miles (234 square miles of land and 13 square miles of water).

The skyline of New York City can be seen across the Hudson River, and access to the city is convenient via the double-decked George Washington Bridge. The opening of the bridge in 1931 contributed greatly to the growth of the county, which until then had consisted largely of farmland, century-old homes and pockets of residential development. At the present time, Bergen County is primarily suburban in nature, with several municipalities that are more urban in nature. According to the 2012 Census Estimate, Bergen has 918,888 residents, or over 10% of all the people living in New Jersey - the largest number of people residing in any county in the stateⁱ.

Elementary and high schools throughout Bergen County enjoy a reputation for excellence, and five colleges in the county offer outstanding opportunities for higher education. The county provides one of the greatest pools of highly educated, skilled laborers in the metropolitan area.

Bergen features a range of businesses and employment opportunities that complement its location and population. With an excellent roadway network and public transportation system in place, the County has become home to numerous corporate headquarters, in addition to major metropolitan shopping centers and local downtown business districts. The bounty of hotels and restaurants attracts business travelers as well as tourists visiting the county and the greater New York metropolitan area.

The desirable transportation network and access to New York City have made Bergen County a very desirable place to live. The varied housing stock provides rental and owner options ranging from high-rise and garden-style apartments to comfortable suburban homes on tree-shaded streets to wooded estates.

Whether living, working, or visiting Bergen County, there is plenty to see and do. Bergen is known for its historic heritage and variety of recreational, cultural, and entertainment facilities. There are 20 county parks totaling 9,000 acres of first-class swimming, golf, riding, and skiing, as well as passive areas for those seeking solitude, as well as the many municipal facilities available to the local residents. The world renowned Meadowlands Sports Complex offers opportunities to attend athletic events, concerts and cultural exhibits year round.

ⁱ United States Census Estimate, 2012.

Appendix H: New Mitigation Actions

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Bergen County Utilities Authority	BCUA-001-15	Flood proofing and Retrofits to Bar Screen Building No. 2; Joint Meeting Pump Station; Pink Avenue Pump Station	Flood, Hurricane Surge.	Existing Structure	Structure and Infrastructure	2,3	High	High	Allows BCUA to continue to Provide critical service to the community in the form of wastewater conveyance and treatment through the plant. It helps protect health and safety of the community and the environment.	High	Based on ability to secure funding.	BCUA	HMGP, PDM, NJEIT, JMA, other state and federal environmental protection sources
Bergen County Utilities Authority	BCUA-002-15	Flood proofing, construction of flood barriers around buildings and raising assets/replacing with submersible units.	Flood, Hurricane Surge	Existing Structure	Structure and Infrastructure	2,3	High	High	provide critical service to the community in the form of wastewater conveyance and treatment through the plant. It helps protect health and safety of the community and the environment.	High	Based on ability to secure funding.	BCUA	HMGP, PDM, NJEIT, JMA, other state and federal environmental protection sources

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Bergen County Utilities Authority	BCUA-003-15	Flood proofing and Retrofits to Switchgear Building; CoGen Building;	Flood, Hurricane Surge.	Existing and Future Structures	Structure and Infrastructure	2,3	High	High	Allows BCUA to continue to provide critical service to the community in the form of wastewater conveyance and treatment through the plant. It helps protect health and safety of the community and the environment.	High	Based on ability to secure funding.	BCUA	HMGP, PDM, NJEIT, JMA, other state and federal environmental protection sources
Bergen County Utilities Authority	BCUA-004-15	Flood proofing and Retrofits to Substation 2 and 3	Flood, Hurricane Surge.	Existing Structure		2,3	High	High	Allows BCUA to continue to provide critical service to the community in the form of wastewater conveyance and treatment through the plant. It helps protect health and safety of the community and the environment.	High	Based on ability to secure funding.	BCUA	HMGP, PDM, NJEIT, JMA, other state and federal environmental protection sources

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Bergen County Utilities Authority	BCUA-005-15	Flood proofing and Retrofits to Conveyance Disinfection and Primary Sludge Removal Buildings	Flood, Hurricane Surge	Existing Structure	Structure and Infrastructure	2,3	High	High	Allows BCUA to continue to provide critical service to the community in the form of wastewater conveyance and treatment through the plant. It helps protect health and safety of the community and the environment.	High	Based on ability to secure funding.	BCUA	
Bergen County Utilities Authority	BCUA-006-15	Raising assets.	Flood, Hurricane Surge	Existing Structure	Structure and Infrastructure	2,3	High	High	Allows BCUA to continue to provide critical service to the community in the form of wastewater treatment. It helps protect health and safety of the community and the environment.	High	Based on ability to secure funding.	BCUA	HMGP, PDM, NJEIT, JMA, other state and federal environmental protection sources
Bergen County Utilities Authority	BCUA-007-15	Flood proofing and Retrofits to Blowers Substation and Grit Removal Buildings	Flood, Hurricane Surge.	Existing Structure	Structure and Infrastructure	2,3	High	High	provide critical service to the community in the form of wastewater treatment. It helps protect health and safety of the community and protection of the environment.	High	Based on ability to secure funding.	BCUA	HMGP, PDM, NJEIT, JMA, other state and federal environmental protection sources

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Bergen County Utilities Authority	BCUA-008-15	Flood proofing and Retrofits to Secondary Sludge Pumping Stations	Flood, Hurricane Surge	Existing Structure	Structure and Infrastructure	2,3	High	High	Allows BCUA to continue to provide critical service to the community in the form of wastewater treatment. It helps protect health and safety of the community and protection of the environment.	High	Based on ability to secure funding.	BCUA	HMGP, PDM, NJEIT, JMA, other state and federal environmental protection sources
Bergen County Utilities Authority	BCUA-009-15	Flood proofing and Retrofits to Sludge Processing Building	Flood, Hurricane Surge.	Existing Structure	Structure and Infrastructure	2,3	High	High	Allows BCUA to continue to provide critical service to the community in the form of wastewater treatment. It helps protect health and safety of the community and the environment.	High	Based on ability to secure funding.	BCUA	HMGP, PDM, NJEIT, JMA, other state and federal environmental protection sources
Bergen County Utilities Authority	BCUA-010-15	Flood proofing and Retrofits to Substations 5 and 6	Flood, Hurricane Surge.	Existing Structure	Structure and Infrastructure	2,3	High	High	Allows BCUA to continue to provide critical service to the community in the form of wastewater treatment. It helps protect health and safety of the community and the environment.	High	Based on ability to secure funding.	BCUA	HMGP, PDM, NJEIT, JMA and other state and federal environmental protection sources

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Bergen County Utilities Authority	BCUA-011-15		Flood, Hurricane Surge.	Existing Structure	Structure and Infrastructure	2,3	High	High	Allows BCUA to continue to provide critical service to the community in the form of wastewater conveyance and treatment. It helps protect health and safety of the	High	Based on ability to secure funding.	BCUA	HMGP, PDM, NJEIT, JMA, other state and federal environmental protection sources
Bergen County Utilities Authority	BCUA-012-15	Flood proofing and Retrofits to Administration Building	Flood, Hurricane Surge.	Existing Structure	Structure and Infrastructure	2,3	Med	High	Allows BCUA to continue its administrative functions to provide wastewater conveyance and treatment.	Med	Based on ability to secure funding.	BCUA	HMGP, PDM, NJEIT, JMA, other state and federal environmental protection sources
Bergen County Utilities Authority	BCUA-013-15	Flood proofing and Retrofits to Warehouse Building and Shops, Old Administration Building and Shops Building	Flood, Storm Surge	Existing Structure	Structure and Infrastructure	2,3	Med	High	Allows BCUA to continue to provide support for operations.	Med	Based on ability to secure funding.	BCUA	HMGP, PDM, NJEIT, JMA, other state and federal environmental protection sources

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Bergen County Utilities Authority	BCUA-015-15	Flood proofing and Retrofits to North Gate	Flood, Hurricane Surge.	Existing Structure	Structure and Infrastructure	2,3	Med	High	Allows the BCUA to continue to provide power to the gate and expedite emergency repairs to the security gate after a storm event. This will help maintain the security for the wastewater conveyance and treatment facilities.	Med	Based on ability to secure funding.	BCUA	HMGP, PDM, NJEIT, JMA, other state and federal environmental protection sources
Bergen County Utilities Authority	BCUA-015-15	Flood proofing and Retrofits to Stormwater Pumping Station	Flood, Hurricane Surge.	Existing Structure	Structure and Infrastructure	2,3	Med	High	This mitigation will help the community to have continuous access to the nature path.	Med	Based on ability to secure funding.	BCUA	HMGP, PDM, NJEIT, JMA, other state and federal environmental protection
Allendale Borough	201-001-15	Acquire Emergency Backup Generators	All hazards	Existing	Energy Allocation	2	High	High	Supports Borough Emergency Preparedness Plan	High	1 year	Borough of Allendale OEM Director, Director of D.P.W. and Fire Chief	HMGP, PDM
Alpine Borough	202-001-15	Developing a multi-disciplinary all hazard working group	All hazards	Future	Emergency Planning	1, 2, 3, 5	High	0	Have various subject matter experts mitigating local hazards instead of a one-sided approach	Yes	Within 1 year	Borough	None needed

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Alpine Borough	202-002-15	Ensuring means to clearly convey emergency notifications via public address.	Communication failure	Future	Infrastructure - Communications	1, 3	High	\$100,000.00	Additional means for community notification if web based means fail.	Yes	2 years	Borough	Borough
Alpine Borough	202-003-15	Wind proofing cellular infrastructure to enhance continuity of emergency communications	Wind	Future	Structure and infrastructure projects	2, 3	High	Approx. \$200,000.00	Enhance resiliency for cellular communications.	Yes	2 years	Cellular provider with borough approval	Cellular provider
Alpine Borough	202-004-15	Quick connect emergency generator to allow traffic signal to operate without	Significantly impact to traffic flow during severe weather	Future	Energy allocation	2, 3	High	\$5,000.00 per traffic signal, 4 critical intersections	lessen the need to staff major intersections with law enforcement personnel.	Yes	2 years	Borough, County & State	Mitigation grant opportunities and/or action improvements
Bergenfield Borough	203-001-15	Roy W. Brown Middle School Emergency Generator	All hazards	Upgrades to existing building	Structure and Infrastructure	1,2	High	Med	Provide for the public welfare.	High	6 months once funding is in place.	Bergenfield Borough	HMGP, PDM
Bergenfield Borough	203-002-15	Lightning Detection System	Coastal Storms	New equipment to be installed.	Preparedness and Response	1	High	High	Supports emergency management operations	High	6 months	Bergenfield Borough	Capital funds, Other government funding sources

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Bergenfield Borough	203-003-15	Outdoor Warning System	Coastal Storms	New equipment to be installed.	Preparedness and Response	1	High	High	Supports emergency management operations	High	6 months once funding is secured	Bergenfield Borough	Capital funds, Other government funding sources
Bergenfield Borough	203-004-15	Front Street Storm Sewer Improvements	Flooding	Improving existing infrastructure	Structure and Infrastructure	3	High	High		High	1 year once funding is secured	Bergenfield Borough	Capital Funds, HMGP, PDM
Bergenfield Borough	203-005-15	Wilbur Road Storm Sewer Improvements	Flooding	Improving existing infrastructure	Structure and Infrastructure	3	High	High		High	1 year once funding is secured	Bergenfield Borough	Capital Funds, HMGP, PDM
Bogota Borough													
Carlstadt Borough	205-001-15	Drainage and roadway improvements to	Flood	Existing	Structure and Infrastructure	3,4	High	High	None at the moment	High	2 years, based on funding	Borough of Carlstadt	Capital Funds, HMGP, PDM
Cliffside Park Borough													
Closter Borough	207-001-15	Bridge for county route 505 at intersection of county route 102	Flooding of roadway from Oradell Reservoir	addresses existing structures	Structure and Infrastructure	2,3	High	High		High		Bergen County	Capital Funds, HMGP, PDM, other governmental funding sources

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Cresskill Borough	208-001-15	Replacement generators for pump houses on Grant Avenue and Fifth Street	All hazards	Existing facilities	Energy Allocation	2	High	Low	continuity of operations	High	1 year	Cresskill DPW	HMGP, PDM
Demarest Borough	209-001-15	Flood risk reduction on Teakill Brook	Flooding			2, 3, 5	High			High		County/Borough	County/Borough
Demarest Borough	209-002-15	Create an MOA with Borough of Alpine for supporting Demarest DPW during flood	Flooding			1, 2, 3	High	\$5,000.00		High			Local
Demarest Borough	209-003-15	Create an emergency access road to enable use of second bridge to navigate around flood zone (Wakela Drive)	Flooding			1, 2, 3	High	\$150,000.00		High			County/Local
Demarest Borough	209-004-15	Flood proof DPW facility and yard	Flooding		Structure & Infrastructure	2, 3	High			High		Borough	County/Local

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Dumont Borough	210-001-15	Installation of a retention pond allowing run off and streams to collect water and release same at a safe and reasonable rate.	flooding	Future - proposed	Natural Systems Protection	3	High	High	none	High	1 to 1.5 years.	Local government's officials, engineering firm, DEP, EPA. ,	NJEIT funding, HMGP, PDM, FMA, RFC, SRL
Dumont Borough	210-002-15	Maintenance of brooks, streams and runoff routes.	flooding	continued	Natural Systems Protection	5	Med	Med	none	Med	no extended time period. This is a monthly function.	Dumont DPW ,	N/A No funding needed; would be added to DPW
						3							function
Dumont Borough	210-003-15	Emergency Alert System	emergency alerting	existing with expanded	Preparedness and Response	1,3	High	Low	none	High	less than 1 year.	Boro of Dumont, PD	N/A No funding required
Dumont Borough	210-004-15	Installation of generators in two locations the boro has designated as shelter within the Dumont Borough.	All hazards	proposed future	Energy Allocation	1,2	High	Low	none	High	two to three months to install and hook op.	Boro of Dumont, BOE	HMGP, PDM

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
East Rutherford Borough	211-001-15	Feasibility study into flood protection measures (e.g. pumps, stormwater management upgrades)	Flooding	Existing	Local Plans and Regulations	1, 3, 5	High	High	General public safety - protection of life and property from flooding	High	2015-2015	OEM	Municipal budget, other governmental funding sources
East Rutherford Borough	211-002-15	A Snow Plan to guide the preparation and response to severe winter weather.	Severe Weather - Winter Storms	Existing	Local Plans and Regulations	1, 3, 5	Med	Low	Builds upon the Borough's Emergency Operations Plan	High	Complete by September 2015	OEM	Municipal budget, other governmental funding sources
East Rutherford Borough	211-003-15	Flood proofing of critical facilities from damage and power loss	Severe Weather - Hurricane	Existing	Structure and Infrastructure	2,3	High	High	General Public Safety and Continuity of Operations	High	Plan by Year End 2015. Implement in 2015.	OEM	Capital funds, HMGP, PDM
East Rutherford Borough	211-004-15	Develop a Shelter Needs list and Response Plan	All Hazards	Plan for future events	Local Plans and Regulations	1, 3, 5	Low	Low	General Public Safety	High	Complete by June 2015	OEM	Municipal budget, other governmental funding sources

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
East Rutherford Borough	211-005-15	A Hurricane Plan to guide the preparation and response to Hurricane conditions	Severe Weather Hurricane	Plan for future events	Local Plans and Regulations	1, 3, 5	Med	Low	General Public Safety - Builds upon Borough Emergency Operations Plan	High	Complete by June 2015	OEM	Municipal budget, other governmental funding sources
East Rutherford Borough	211-006-15	Install approved secondary traffic control devices at applicable intersections	Power Outage	Assists in traffic control/ public safety during future events	Structure and Infrastructure	1	High	Med	General Public Safety - Builds upon Borough Emergency Operations Plan	Med	Complete by August 2015	ER Police, DPW	Municipal Budget, Capital funds, other government funding sources
East Rutherford Borough	211-007-15	Cleaning of all catch basins and stormwater management lines	Flooding	Protect against future flood events	Structure and Infrastructure	3	Med	Low	Overall maintenance and upkeep of municipal infrastructure	High	Complete by July 2015	East Rutherford Borough DPW	Municipal budget, other governmental funding sources

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
East Rutherford Borough	211-008-15	Installation of generators at three public schools/shelters Schools within the Borough	All hazards	Future	Energy Allocation	1,2,3	High	Low	only ensures continuity of operations, but also assists in the emergency response function. Schools serve as emergency shelters.	High	Complete construction by end of 2017	Joint effort of BOE and OEM	CIP, HMGP
Edgewater Borough	212-001-15	Raise generator addition height.	Flooding	Existing	Energy Allocation	2,3	High	Low	Continuity of operations Emergency Services	High	12 months	Borough of Edgewater	HMGP, PDM
Elmwood Park Borough	213-001-15	Install a generator to provide emergency power to Borough evacuation center	All hazards	Existing structure	Energy Allocation	1,2	Med	High	This action will directly benefit the community by providing an evacuation center that will be accessible during power failures	High	1 year	DPW	HMGP, PDM
Emerson Borough	214-001-15	Acquire generator for shelter	All hazards	Add generator to current structure.	Energy Allocation	1,2	High	High	Supports residents in time of need.	High		Emerson Borough	HMGP, PDM
Emerson Borough	214-002-15	Acquire generator for Fire and Rescue Annex,	All hazards	Add generator to current structure.	Energy Allocation	1,2	High	High	Supports residents in time of need.	High		Emerson Borough	HMGP, PDM
Emerson Borough	214-003-15	Acquire generator for high school which serves as shelter	All hazards	Add generator to current structures.	Energy Allocation	1,2	High	High	Supports residents in time of need.	High		Emerson Borough	HMGP, PDM

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Englewood City	215-001-15	Connection and wiring of previously installed generators to add'l sections of two public educational facilities, designated as the all hazards primary and secondary emergency shelters, respectively.	All hazards	Future	Energy Allocation	1,2	High	High	Provides sufficient power to utilize the school buildings as shelters, reception centers, food services kitchens, etc...during times when utility failures are impacting the City of Englewood	High	To be determined	City of Englewood	HMGP, PDM
Englewood Cliffs Borough	216-001-15	Install emergency generator for Borough Hall Building 482 Hudson Terrace	All hazards	Existing	Energy Allocation	2	High	High		High		Borough of Englewood Cliffs	HMGP, PDM
Englewood Cliffs Borough	216-002-15	Installation of emergency generator at DPW Building 342 Hudson Terrace	All hazards	Existing	Energy Allocation	2	High	High		high		Borough of Englewood	HMGP, PDM

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Englewood Cliffs Borough	216-003-15	Installation of backup generator for police communications- Johnson Avenue - Water Tower	All hazards	Existing	Energy Allocation	2	High	High		High		Englewood Cliffs Borough	HMGP, PDM
Fair Lawn Borough	217-001-15	Plaza Road Sewer Pump Station-Install a third submersible pump in the dry well and install new piping into the pump discharge header	Flooding	Existing	Structure and Infrastructure	1,2,3,5	High	High	Support capital improvement projects	High	5 years	Borough	HMGP, PDM
Fair Lawn Borough	217-002-15	South Siphon Sewer Pump Station -Install one bypass pump permanently	Flooding	Existing	Structure and Infrastructure	1,2,3,5	High	High	Support capital improvement projects	High	5 years	Borough	HMGP, PDM
Fair Lawn Borough	217-003-15	Saddle River Road Sewer Pump Station -Improve the drainage and pumping capabilities to prevent flooding and backflow	Flooding	Existing	Structure and Infrastructure	1,2,3,5	High	High	Support capital improvement projects	High	5 years	Borough	HMGP, PDM

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Fair Lawn Borough	217-004-15	Prospect Street Sewer Pump Station - Covert the two compartment stations into one complete wet well and install submersible pumps and bring all controls above flood level	Flooding	Existing	Structure and Infrastructure	1,2,3,5	High	High	Support capital improvement projects	High	5 years	Borough	HMGP, PDM
Fair Lawn Borough	217-005-15	Acquire homes of the Repetitive Loss Properties in the Lyncrest neighborhood	Flood	existing	Structure and Infrastructure	1,3,5	High	High	Support open space preservation	High	5 years	Borough Open Space Committee	HMGP, PDM, FMA, RFC, SRL, Blue Acres
Fair Lawn Borough	217-006-15	Acquire homes of the Repetitive Loss Properties in the Columbia Heights neighborhood	Flood	Existing	Structure and Infrastructure	1,3,5	High	High	Support open space preservation	High	5 years	Borough Open Space Committee	HMGP, PDM, FMA, RFC, SRL, Blue Acres

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Fair Lawn Borough	217-007-15	Acquire homes of the Repetitive Loss Properties in the Warren Point neighborhood	Flood	Existing	Structure and Infrastructure	1, 3, 5	High	High	Support open space preservation	High	5 years	Borough Open Space Committee	HMGP, PDM, FMA, RFC, SRL, Blue Acres
Fair Lawn Borough	217-008-15	Movement of departments out of flood zone to new facility	Flooding	Existing	Structure and Infrastructure	1, 3, 5	High	High	Support capital improvement projects	High	5 years	Borough	HMGP, PDM, FMA, RFC, SRL, Blue Acres
Fair Lawn Borough	217-009-15	Move Emergency Operations Center to stand alone facility	All hazards	Existing	Structure and Infrastructure	1, 3, 5	High	High	Support capital improvement projects	High	5 years	Borough	HMGP, PDM, FMA, RFC, SRL, Blue Acres
Fair Lawn Borough	217-010-15	Install generators at critical facilities (fire houses, Ambulance and Rescue Bldg.)	All hazards	Existing	Energy Allocation	2	High	High	Support capital improvement projects	High	5 years	Borough	HMGP, PDM
Fair Lawn Borough	217-011-	Install generators at traffic lights	All hazards	Existing	Energy Allocation	2	High	High	Support capital improvement projects	High	5 years	Borough	HMGP, PDM
Fair Lawn Borough	217-012-	Placement of folding stop signs	All hazards	Existing	Preparedness and Response	1	High	Low	Support capital improvement projects	High	5 years	Borough	Capital funds, Other government

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Fair Lawn Borough	217-013-15	Elevation and movement of pool structure further inland and elevate	Flooding	Existing	Structure and Infrastructure	3	High	High	Support capital improvement projects	High	5 years	Borough	HMGP, PDM, FMA, RFC, SRL, Blue Acres
Franklin Lakes Borough	220-001-15	Add circuits to allow full scale sheltering at Primary Red Cross shelter	All hazards		Energy Allocation	1, 2	High	High	Enhance emergency preparedness	High	Now	OEM	HMGP, PDM
Franklin Lakes Borough	220-002-15	Add circuits to allow full scale sheltering at Secondary Red Cross shelter	All hazards		Energy Allocation	1, 2	High	High	Enhance emergency preparedness	High	Now	OEM	HMGP, PDM
Fairview Borough													
Fort Lee Borough													
Franklin Lakes Borough													
Garfield Borough													
Glen Rock Borough	222-001-	Replace old sewer pumps	Sewerage	Existing	Structure and Infrastructure	1, 2, 3	Med	Med	No	High	1 yr	DPW	HMGP, PDM

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Glen Rock Borough	222-002-15	Replace temporary with permanent	Sewer Pumping Temporary Building	Existing	Structure and Infrastructure	1, 2, 3	Med	Med	No	Med	2-3 yrs	DPW	HMGP, PDM
Glen Rock Borough	222-003-15	Replace old sewerage pumps	Sewerage	Existing	Structure and Infrastructure	1, 2, 3	Med	Med	No	Med	3-4 yrs	DPW	HMGP, PDM
Hackensack City													
Harrington Park Borough	224-001-15	Dredging of Pondsides Park Pond, stabilization of eroded banks and construction of rip-rap at discharge pipes.	Protection of Natural Resources & Flood Mitigation	Existing	Natural Systems Protection	3, 5	High	High		High	1 year upon securing of funding	Harrington Park Borough	HMGP, PDM, FMA, RFC, SRL
Harrington Park Borough	224-002-15	Install 5 Generators (One each for the Library, Borough Hall, Public School, DPW Building and Fire Department)	All hazards	Addresses existing structures	Energy Allocation	2, 3	High	High		High	1 year upon securing of funding	Harrington Park Borough	HMGP, PDM

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Harrington Park Borough	224-003-15	Building a new, higher bridge and building up the roadway above the 100 year flood plan.	Flooding from roadway from Oradell reservoir.	Addresses existing structures	Structure and Infrastructure	1, 3, 5	High	High		High	1 year upon securing of funding	Harrington Park Borough	HMGF, PDM
Hasbrouck Heights Borough	225-001-15	Generator with automatic transfer switch	All hazards		Energy Allocation	2, 3	High	High			3 yrs.	Borough DPW Supt.	HMGF, PDM
Haworth Borough	226-001-15	Trim and prune trees along major access routes (Sunset Avenue, Lake Shore Drive, Haworth Avenue, etc.) to prevent tree fallings during wind, ice events.	Wind and winter storms	N/A	Natural Systems Protection	5	High	Low	Prevent road closures of emergency access routes during wind and ice events.	Med	3 years	Haworth Borough (DPW)	Municipal budget, other governmental funding sources

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Haworth Borough	226-002-15	Replace and widen the deteriorating culvert (Haworth Brook at Haworth Ave)	Flood	Modify existing structure.	Structure and Infrastructure	1, 3, 5	High	Med	Maintain open routes for emergency service vehicles.	Med	5 years	Borough of Haworth (Engineering)	HMGP, PDM
Haworth Borough	226-003-15	Replace and widen the deteriorating culvert (Kip's Brook at Haworth Ave)	Flood	Modify existing structure.	Structure and Infrastructure	1, 3, 5	High	Med	Maintain open routes for emergency service vehicles.	Med	5 years	Haworth Borough (Engineering)	HMGP, PDM
Haworth Borough	226-004-15	Pipe the catch basins to the nearest stormwater system.	Flood	Modify existing structure.	Structure and Infrastructure	1, 3, 5	High	Med	Reduce flooding, prevent icy roads in winter.	Med	5 years	Borough of Haworth (Engineering)	HMGP, PDM
Haworth Borough	226-005-15	Provide back-up generators to the DPW Building #2 and Haworth School.	All hazards	N/A	Energy Allocation	2, 3	Med	Med	Provide safe shelter during extended loss of power.	Med	5 years	Haworth (DPW/Board of Education)	HMGP, PDM
Haworth Borough	226-006-15	Provide an emergency access bridge over the train tracks.	Emergency Access - Train Incident	N/A	Structure and Infrastructure	1	Med	High	Provide emergency access route during train failure/accident.	Low	10 years	Haworth Borough	HMGP, PDM

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Hillsdale Borough	227-001-15	Provide back-up generators to the schools.	All hazards	N/A	Energy Allocation	2, 3	Med	Med	Provide safe shelter during extended loss of power.	Med	5 years	Borough of Hillsdale BOE	HMGP, PDM
Hillsdale Borough	227-002-15	Relocate the DPW out of the floodplain. Property to be kept as open space.	Flooding	Future	Structure and Infrastructure	2, 3, 5	Med	High	Provide emergency services during flood events.	Low	10 years	Borough of Hillsdale	HMGP, PDM, FMA, RFC, SRL
Ho- Ho-Kus Borough	228-001-15	Acquire 3 portable generators for emergency sewer operation and acquire 1 fixed generator for emergency operation of Fire House	All hazards	Dual powered capabilities	Energy Allocation	2, 3	High	High		High	Bid opening scheduled April 2015	DPW and OEM	Capital funds, other government funding sources, HMGP
Ho- Ho-Kus Borough	228-002-15	remove various hazards to alleviate flooding	Flood and storm water storage	Borough engineer to design land area for safety. remove safety hazards.	Structure and Infrastructure	1, 4	High	High	Supports open flood way and wetlands storage	High	2 years	OEM, DPW and Borough Engineer	HMGP, PDM, Bergen County Open Space Grant
Leonia Borough	229-001-15	Emergency generators for the Borough Hall	All hazards	Existing	Energy Allocation	2, 3	High	High	his project would support all municipal functions during emergencies.	High	Undetermined	Borough Admin Jack Terhune	HMGP, PDM

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Leonia Borough	229-002-15	Emergency generator for municipal recreation center	All hazards	Existing	Energy Allocation	2, 3	High	High	This project will allow the municipality to provide a shelter for the residents.	High	Undetermined	Borough Admin Jack Terhune	HMGP, PDM
Leonia Borough	229-003-15	Lightning detection and warning system to provide protection for the municipal parks and fields.	Prevention of injury/fatality due to lightning	Existing	Preparedness and Response	1	High	High	This project will provide an increased level of protection for the residents of Borough of Leonia.	High	Existing	Borough Administrator Jack Terhune	Capital funds, other government funding sources
Little Ferry Borough	230-001-15	Improved storm water management along a public ditch in a residential neighborhood to reduce repetitive loss	All hazards	Existing	Structure and Infrastructure	3, 5	Low	Med	Unmet need, protect safety and welfare, reduce repetitive loss	High	1 year	Little Ferry Borough ; Bergen County	HMGP, PDM
Little Ferry Borough	230-002-15	Adoption of more resilient building codes	All hazards	Future	Local Plans and Regulations	2, 3, 4, 5	High	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	1 year	Council and Planning Board; NJMC	Capital funds, other government funding sources
Little Ferry Borough	230-003-15	Adoption of density controls within the land use ordinance/plans	Density controls	Existing and future	Local Plans and Regulations	2, 3, 4, 5	High	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	1 year	Council and Planning Board; NJMC	Capital funds, other government funding sources

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Little Ferry Borough	230-004-15	Adoption of design review standards to ensure sustainability, neighborhood characteristics and resiliency	Design review standards	Existing and future	Local Plans and Regulations	2, 3, 4, 5	High	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	1 year	Council and Planning Board; NJMC	Capital funds, other government funding sources
Little Ferry Borough	230-005-15	Adoption of environmental review standards to ensure sustainability, neighborhood characteristics and resiliency	Flooding	Existing and future	Local Plans and Regulations	2, 3, 5	High	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	1 year	Council and Planning Board; NJMC	HMGP, PDM, FMA, other government funding sources
Little Ferry Borough	230-006-15	Adoption of Floodplain development regulations to ensure sustainability, neighborhood characteristics and resiliency	Flooding	Existing and future	Local Plans and Regulations	2, 3, 5	High	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	1 year	Council and Planning Board; NJMC	Capital funds, other government funding sources
Little Ferry Borough	230-007-15	Review/adoption of Subdivision and development regulations to ensure sustainability, neighborhood characteristics and resiliency	All hazards	Existing and future	Local Plans and Regulations	2, 3, 5	High	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	1 year	Council and Planning Board; NJMC	Capital funds, other government funding sources

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Little Ferry Borough	230-008-15	Review/adoption of Coastal zone management regulations to ensure sustainability, neighborhood characteristics and resiliency	Flooding	Existing and future	Local Plans and Regulations	2, 3, 5	High	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	1 year	Council and Planning Board; NJMC	Capital funds, other government funding sources
Little Ferry Borough	230-009-15	Open Space Preservation - develop Open Space Plan	Flooding	Existing and future	Local Plans and Regulations	2, 3, 5	High	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	1 year	Council and Planning Board; NJMC	Capital funds, other government funding sources
Little Ferry Borough	230-010-15	Establishment of performance standards	All hazards	Future	Local Plans and Regulations	2, 3, 5	Low	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	1 year	Council and Planning Board; NJMC	Capital funds, other government funding sources
Little Ferry Borough	230-011-15	Emergency generator at Critical Facility - Memorial School which serves as shelter	All hazards	Address existing structure	Energy Allocation	2, 3	High	Low	Emergency shelter, critical infrastructure, unmet need, protect safety and welfare	High	1 year	Little Ferry Borough	HMGP, PDM

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Little Ferry Borough	230-012-15	Establishment of performance standards for Shoreline setback regulations - as part of land use management	Flooding	Existing and Future	Local Plans and Regulations	2, 3, 5	Low	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	1 year	Council and Planning Board; NJMC	Capital funds, other government funding sources
Little Ferry Borough	230-013-15	Transfer of Development Rights - as part of land use management	Transfer of Development Rights	Future	Local Plans and Regulations	2, 3, 4, 5	Low	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	1 year	Council and Planning Board; NJMC	Capital funds, other government funding sources
Little Ferry Borough	230-015-15	Hazard Information Centers	All hazards	Existing and future	Education and Awareness Programs	1	High	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	1 year	Council and Planning Board; NJMC	HMGP, PDM, FMA, other government funding sources
Little Ferry Borough	230-015-15	Public education and outreach programs - establishment of and enhancing existing	All hazards	Existing and future	Education and Awareness Programs	1	High	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	1 year	Council and Planning Board; NJMC	HMGP, PDM, FMA, other government funding sources

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Little Ferry Borough	230-016-15	Real estate disclosure - establishment of and enhancing existing	All hazards	Future	Education and Awareness Programs	1, 2	Low	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	1 year	State DEP	HMGP, PDM, FMA, other government funding sources
Little Ferry Borough	230-017-15	Sediment and erosion control regulations- establishment of and enhancing existing	Flooding	Future	Local Plans and Regulations	3, 5	Low	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	1 year	Governing Body, Planning Board, NJMC	HMGP, PDM, FMA, other government funding sources
Little Ferry Borough	230-018-15	Stream Corridor Restoration	Flooding	Future	Natural Systems Protection	1, 3, 5	High	Med	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	over multiple years	Bergen County Mosquito Commission	HMGP, PDM
Little Ferry Borough	230-019-15	Elevation of structures	Flooding	Future	Structure and Infrastructure	1, 3	High	Low	Reduce repetitive loss, hazard mitigation, economic development, protect health and	High	over multiple years	State	HMGP, PDM, FMA, RFC, SRL

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Little Ferry Borough	230-020-15	Levees and floodwalls (including berms) - building and enhancing existing	Flooding	Future	Structure and Infrastructure	1, 2, 3, 4, 5	high	high	Reduce repetitive loss, hazard mitigation, economic development, protect health and welfare of the public	High	over multiple years	State	HMGP, PDM
Little Ferry Borough	230-021-15	Acquisition of an emergency generator to power Police Department/OEM and Borough Hall facility.	All hazards	Address existing structure	Energy Allocation	2	High	Low	Emergency shelter, critical infrastructure, unmet need, protect safety and welfare, emergency operations	High	1 year	Little Ferry Borough	HMGP, PDM
Little Ferry Borough	230-022-15	Emergency generator at Main St Storm Water Pump Station	All hazards	Address existing structure	Energy Allocation	2	High	Low	Critical infrastructure, unmet need, protect safety and welfare	High	1 year	Little Ferry Borough	HMGP, PDM
Little Ferry Borough	230-023-15	Emergency generator at Willow Lake Storm Water Pump Station	All hazards	Address existing structure	Energy Allocation	2	High	Low	Critical infrastructure, unmet need, protect safety and welfare	High	1 year	Little Ferry Borough	HMGP, PDM

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Little Ferry Borough	230-024-15	Self-cleaning grate at Losen Slote Storm Water Pump Station. This regional Pump Station serves 5 municipalities but is owned and operated by Little Ferry. Self-cleaning grate will ensure continued operations during storm events, especially since there is only one means of ingress.	All hazards	Address existing structure	Structure and Infrastructure	1, 2, 3	High	Low	Critical infrastructure, unmet need, protect safety and welfare	High	1 year	Little Ferry Borough	HMGP, PDM, Bergen County grants, Municipal Budget, other government funding sources
Little Ferry Borough	230-025-15	Willow Lake would be expanded to hold more water during events	All hazards	Address existing structure	Structure and Infrastructure	1, 3	Med	High	Unmet need, protect safety and welfare, reduce repetitive loss	High	1 year	Little Ferry Borough	FMA, RFC, SRL, Bergen County grants, Municipal Budget, other government funding sources

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Little Ferry Borough	230-026-15	Increased capacity to reduce RL damages along homes and businesses that are located near slotes, ditches and creeks.	All hazards	Address existing structure	Structure and Infrastructure	1, 3, 4	High	Med	Unmet need, protect safety and welfare, reduce repetitive loss	High	1 year	Little Ferry Borough ; Bergen County	HMGP, PDM, FMA, RFC, SRL, Bergen County grants, Municipal Budget, other government
Little Ferry Borough	230-027-15	Increased capacity to reduce RL damages to homes and businesses located in and near the "Main St Corridor." Jointly address the County's responsibility of storm water mgt while the Borough would provide ADA Compliance and ensure the existing Borough-owned infrastructure can handle additional water	All hazards	Address existing structure	Structure and Infrastructure	1, 3, 4	High	Med	Unmet need, protect safety and welfare, reduce repetitive loss, economic development	High	1 year	Little Ferry Borough ; Bergen County	HMGP, PDM, FMA, RFC, SRL, Bergen County grants, Municipal Budget, other government funding sources

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Little Ferry Borough	230-028-15	Installation of a storm water pump station and check valve within the Industrial Ave/Gates Road area	All hazards	Address existing structure (public roadways)	Structure and Infrastructure	1, 3	High	Med	Unmet need, protect safety and welfare, reduce repetitive loss, economic development	High	1 year	Little Ferry Borough ; Bergen County	HMGP, PDM, Bergen County grants, Municipal Budget, other
Lodi Borough													
Lyndhurst Township	232-001-15	Permanent generator installed at Senior Citizen Building and Senior Center which is used as a shelter / warming or cooling center at times.	All hazards	Future	Energy Allocation	2	High	High	Support public's needs and irritability which may cause unrest.	High	HMGP, RFC, SRL, and FMA. For 25% local match, in-kind	Twp. of Lyndhurst	HMGP, PDM
Lyndhurst Township	232-002-15	Elevation of 22 repetitive flood loss residences in flood prone area.	Flood	Future	Structure and Infrastructure	1, 3	High	High	Support public's needs and irritability which may cause unrest.	High	HMGP, RFC, SRL, and FMA. For	Twp. of Lyndhurst	HMGP, PDM, FMA, RFC, SRL, Bergen County

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Lyndhurst Township	232-003-15	Folding stop signs to be mounted on traffic light poles which can be rapidly activated.	Secondary Traffic Control Measures	Future	Structure and Infrastructure	1	High	Low	None	High	Future mitigation action.	Twp. of Lyndhurst	Municipal budget, other governmental funding sources
Lyndhurst Township	232-004-15	Construction of permanent flood walls or levees including the possibility of deployment of hydraulic portable walls along the Passaic River in the flood prone areas within the township	Floodwalls / Levees	Future	Structure and Infrastructure	1, 2, 3, 4, 5	High	High	Support the public's need to be secure in their homes, and businesses.	High	Future mitigation action.	Twp. of Lyndhurst	HMGP, PDM, FMA, RFC, SRL
Mahwah Township													

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Maywood Borough	234-001-15	Purchase two, fixed site, emergency generators for both public schools.	All hazards	Provides future generators for existing structures	Energy Allocation	2	High	Low	Also provides safety to all children in schools during power outage while schools are in session.	High	1 to 3 years	Chris Tuttle, Maywood OEM	HMGP, PDM
Midland Park Borough	235-001-15	Widen stream bed walls	Flooding	n/a	Natural Systems Protection	3, 5	unknown	unknown	maintain quality drinking	low	5 years	Planning, DPW, Ridgewood Water	HMGP, PDM
Montvale Borough	236-001-15	Provide literature to educate the public about risks of flooding and methods for protecting themselves and their property.	Flood	Existing	Provide public education	1	Medium	\$5,000.00	Public education	High	5 years	Municipal Government	HMGP, PDM, Capital funds, other
Montvale Borough	236-002-15	Elevate bridge above the flood hazard	Flooding	Future	Structure/Infrastructure projects	2,3	Medium	\$5M	Capital improvements, Improve emergency access	Medium	5 years	Borough engineer	HMGP, PDM, Capital funds, other

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Montvale Borough	236-003-15	Relocate sanitary sewers out of and away from Muddy Brook	Loss of utilities/environmental	Future	Structure/Infrastructure projects	2,3	Medium	\$2M	Capital improvements, protect the public and environment	Medium	5 years	Borough engineer	HMGP, PDM, Capital funds, other
Montvale Borough	236-004-15	Relocate sanitary sewers out of and away from Pascack Brook	Loss of utilities/environmental	Future	Structure/Infrastructure projects	2,3	Medium	\$4.5M	Capital improvements, protect the public and environment	Medium	5 years	Borough engineer	HMGP, PDM, Capital funds, other
Montvale Borough	236-005-15	Elevate bridge above the flood hazard	Flooding	Future	Structure/Infrastructure projects	2,3	Medium	\$5M	Capital improvements, Improve emergency access	Medium	5 years	Borough engineer	HMGP, PDM, Capital funds, other
Montvale Borough	236-006-15	Adoption of floodplain development regulations to ensure sustainability, neighborhood characteristics and resiliency.	Flood	Existing	Local plans and regulations	1,2,3,5	Medium	\$5,000.00	Public education	High	5 years	Municipal government	HMGP, PDM, Capital funds, other

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Montvale Borough	236-007-15	Stabilize and armor the banks of Pascack Brook and Muddy Brook in accordance with the Natural Resources Conservation service (NRCS) standards and the standards for Soil Erosion and Sediment Control in New Jersey.	Flooding	Future	Structure/Infrastructure projects	2,5	Medium	\$15M	Capital Improvements, protect homes	Medium	5 years	Borough engineer	HMGP, PDM, Capital funds, other
Montvale Borough	236-008-15	Elevate structures in the flood prone areas	Flooding	Future	Structure and Infrastructure	1,3	Medium	\$7.5M	Protect homes and property	Medium	5 years	Borough engineer	HMGP, PDM, Capital funds, other
Moonachie Borough	237-001-15	Provide generators for the pump stations	Flooding	existing and future	Energy Allocation	2	High	med		High	now and in the future	Borough Hall	HMGP, PDM
Moonachie Borough	237-002-15	Duplicate location for communications desk	All hazards	Future	Preparedness and Response	1	High	Med		high	not defined at this time	police, boro, fire	Municipal budget, other governmental

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Moonachie Borough	237-003-15	Solar powered electronic message board	All hazards	future	Preparedness and Response	1	High	Med	make residents feel secure, always have a way to communicate	high	within 5 years	Borough Admin	Municipal budget, other governmental
Moonachie Borough	237-004-15	Provide generators for the location	All hazards	existing and future	Energy Allocation	2	High	Med		High	now and in the future	Borough Hall	HMGP, PDM
Moonachie Borough	237-005-15	Rebuild Lincoln Street Pump Station	Flooding	Bid awarded	Structure and Infrastructure	1,2,3	High	Med	people would feel more secure	high	should be complete by end of 2015	Borough of Moonachie	HMGP, PDM
Moonachie Borough	237-006-15	Raising generator at Moonachie Road sanitary station	All hazards	will bid out this year	Energy Allocation	2, 3	High	Med	people would feel more secure	high	2015	Borough of Moonachie	HMGP, PDM
Moonachie Borough	237-007-15	provide generators for the pump stations	Flooding	existing and future	Energy Allocation	2	High	Med		High	now and in the future	Borough Hall	HMGP, PDM
Moonachie Borough	237-008-15	purchase vehicles through state contract or bid	All hazards	future	Preparedness and Response	1	High	low		High		Borough of Moonachie	Municipal budget, other governmental

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Moonachie Borough	237-009-15	Remove boilers from school basement	Flooding	future	Structure and Infrastructure	1	High	Med	people would feel more secure sending their kids to school	med			HMGP, PDM
Moonachie Borough	237-010-15	Town-wide dredging	Flooding		Natural Systems Protection	1	High	Med	reduce the stigma of continual flooding	high			HMGP, PDM
Moonachie Borough	237-011-15	Set up a system to notify residents, through sirens, of impending issues	All hazards	future	Preparedness and Response	1	High	Low		High		Borough of Moonachie	Municipal budget, other governmental
Moonachie Borough	237-012-15	Construction of a berm on both sides of East Riser Ditch	Flooding		Structure and Infrastructure	3	High	Med	reduce the stigma of continual flooding	high			HMGP, PDM
Moonachie Borough	237-013-15	Purchase of radios for emergency vehicles	All hazards		Preparedness and Response	1	High			High	asap, in reality within five years	DPW	Municipal budget, other governmental funding sources
Moonachie Borough	237-015-15	Elevate electrical and hot water heater at Civic Center	Flooding	existing	Structure and Infrastructure	2	High	Med	people would feel more secure	high	done in 2013	Borough of Moonachie	HMGP, PDM

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Moonachie Borough	237-015-15	Elevate electrical at fire house	Flooding	existing	Structure and Infrastructure	2	High	Med	people would feel more secure	high	done in 2013	Borough of Moonachie	HMGP, PDM
Moonachie Borough	237-016-15	Elevate Municipal Building	Flooding	existing	Structure and Infrastructure	2	High	high	people would feel more secure	high	in 2013, to be done in	Borough of Moonachie	HMGP, PDM, FMA, RFC, SRL
Moonachie Borough	237-017-15 237-017-15	Purchase the necessary equipment (large dump truck, 4x4, portable radios, barricades, cones, chain saws)	All hazards	existing and future	Preparedness and Response	1	High	high		High	now and in the future	Boro	Municipal budget, other governmental funding sources
Moonachie Borough	237-018-15	Spec and buy a jet vac truck	Flooding	future	Preparedness and Response	1	High	Med	make residents feel secure	high	within 5 years	Boro	budget, other governmental funding sources
Borough of New Milford	238-001-15	Acquired 6 repetitive flood loss properties Borough wide	Flooding	6 structures removed	Structure and Infrastructure	1	High	High	Removal of more flood prone properties	High	3-5 yrs.	Mayor and Council	HMGP, PDM, FMA, RFC, SRL, Blue Acres
Borough of New Milford	238-02-15	Stabilization of stream bank along Hirschfield Brook	Flooding	Existing	Natural Systems Protection	1, 5	High	High		High	Immediate	Governing Body	HMGP, PDM

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North Arlington Borough	239-001-15	Install stand-by generator- Clayton Block Pump Station	All hazards	Existing	Energy Allocation	2	High	Med	Supports viability of business properties on Porete Ave.	High	3 years	North Arlington DPW	HMGP, PDM
North Arlington Borough	239-002-15	Install stand-by generator- Eagles Fire House	All hazards	Existing	Energy Allocation	2	High	Med		high	3 years	Borough of NA	HMGP, PDM
North Arlington Borough	239-003-15	Install stand-by generator- NA Police Department	All hazards	Existing	Energy Allocation	2	High	Med		High	3 years	Borough of NA	HMGP, PDM
North Arlington Borough	239-004-15	Stand-by Generator- NA DPW Garage	All hazards		Energy Allocation	2	High	Med		High	3 years	Borough of NA	HMGP, PDM
North Arlington Borough	239-005-15	Install stand-by Generators- 3 sanitary sewer pump stations	All hazards		Energy Allocation	2	high	Med		high	3 years	Borough of NA	HMGP, PDM
Northvale	240-001-15	Erosion control stream scour and designing stream bank stabilization	Flooding	Future		5	High			Low	1-5 years	Borough	HMGP & DPM

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Northvale Borough	240-002-15	Purchase temporary barriers to protect bank and athletic fields	Flooding of athletic field		Temporary barriers for athletic fields.	3,4	High		Yes	Medium	1-5 years	Borough	HMGP & DPM
Northvale Borough	240-003-15	Form a committee to educate local businesses on how to flood proof facilities	Flooding		Local mitigation hazard working group committee	1,2,3	High	None		Medium	1-2 years	Borough	HGMP & PDM
Northvale Borough	240-004-15	Flood proof DPW facility and yard	Flooding of DPW facility	Future		2,3	Medium			Medium	1-5 years	Northvale	HGMP & PDM
Northvale Borough	240-005-15	Construct a retention wall along bank.	Flooding	Future	Drainage	2,3,5	High			Medium	1-5 years	Borough	HGMP & PDM
Northvale Borough	240-006-15	Generator for DPW facility	Shelter flooding			2,3	Medium			High	1-2 years	Northvale	HGMP & PDM
Northvale Borough	240-007-15	School used as a shelter needs a generator	Shelter flooding		Generator for secondary shelter	1,2,3	High			High	5-10 years	Northvale	HGMP & PDM

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Norwood Borough	241-001-15	Remove old clogged drain pipes and replace with larger pipes.	Flooding due to undersized drain/culvert.		Structure and Infrastructure	1, 5	high	See above.	Creates a worry free environment for tenants and landlords.	Moderate	3 years	Borough of Norwood and Engineer	HMGP, PDM
Oakland Borough	242-001-15	Reconstruct and stabilize bank	River Bank Destabilization	n/a	Natural Systems Protection	5	High	High	Protect homes	High	1 year	Borough of Oakland	HMGP, PDM
Oakland Borough	242-002-15	Restore riverbed remove shoals & prevent erosion	Flooding	n/a	Natural Systems Protection	5	High	High	Restore River to prevent future erosion.	High	1 year	Borough of Oakland	HMGP, PDM
Oakland Borough	242-003-15	Acquire 12 Repetitive Loss properties on Roosevelt Blvd.	Flooding	Remove existing structures.	Structure and Infrastructure	1	High	High	Create safer environment.	High	Jul-15	Borough of Oakland	HMGP, PDM, FMA, RFC, SRL, Blue Acres
Old Tappan	243-001-15	Raise generator at sewer pump station #1 out of flood risk	Flooding	Future	Structure and infrastructure	2,3	High	\$15,000.00	Consistent	High	1 year	Mayor and council	HMGP, local

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Old Tappan Borough	243-002-15	Raise control panel at sewer pump station #1 above flood risk	Flooding	Future	Structure and infrastructure	2,3	High	\$13,000.00	Consistent	High	1 year	Mayor and council	HMGP, local
Old Tappan Borough	243-003-15	Raise vents at sewer pump station #1 above flood risk	Flooding	Future	Structure and infrastructure	2,3	High	\$5,000.00	Consistent	High	1 year	Mayor and council	HMGP, local
Old Tappan Borough	243-004-15	Flood proof wetwell doors at sewer pump station #1	Flooding	Future	Structure and infrastructure	2,3	High	\$4,000.00	Consistent	High	1 year	Mayor and council	HMGP, local
Old Tappan Borough	243-005-15	Pump by-pass ability at all sewer pump stations	Flooding/wind	Future	Structure and infrastructure	2,3	High	\$12,000.00	Consistent	High	1 year	Mayor and council	HMGP, local
Old Tappan Borough	243-006-15	Quick connects and portable generator at all sewer pump stations	Flooding/wind	Future	Structure and infrastructure	2,3	High	\$12,500.00	Consistent	High	5 year	Mayor and council	HMGP, local

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Old Tappan Borough	243-007-15	LP Generator for DPW and police buildings	Flooding/wind	Future	Structure and infrastructure	2,3	High	\$200,000.00	Consistent	High	1 year	Mayor and council	HMGP, local
Old Tappan Borough	243-008-15	LP generator at golf course for alternate OEM site and alternate heating/cooling site	Flooding/wind	Future	Structure and infrastructure	2,3	High	\$150,000.00	Consistent	High	5 year	Mayor and council	HMGP, local
Old Tappan Borough	243-009-15	Generators at traffic lights	Flooding/wind	Future	Structure and infrastructure	1,2,3	High	\$15,000.00	Consistent	High	5 year	Mayor and council	HMGP, local
Old Tappan Borough	243-010-15	Allow residents with flood prone driveways to park on borough owned lot	Flooding	Future	Local plans and regulations	1	High	0	Consistent	High	1 year	Mayor and council	HMGP, local
Old Tappan Borough	243-011-15	Install dam break early warning siren for lake tavern	Flooding	Future	Structure and infrastructure	2,3	High	\$25,000.00	Consistent	High	5 year	Mayor and council	HMGP, local

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Old Tappan Borough	243-012-15	Coordinate with Orange and Rockland for removal of problem tree/wire issues	Flooding/wind	Future	Local plans and regulations	1,2,3,5	High	0	Consistent	High	5 year	Mayor and council	HMGP, local
Old Tappan Borough	243-013-15	Coordinate with Orange and Rockland for installation of higher/stronger utility poles	Flooding/wind	Future	Local plans and regulations	1,2,3,5	High	0	Consistent	High	5 year	Mayor and council	HMGP, local
Old Tappan Borough	243-015-15	Coordinate with Orange and Rockland for upgrades to existing substation	Flooding/wind	Future	Local plans and regulations	1,2,3,5	High	0	Consistent	High	5 years	Mayor and Council	HMGP, local

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Oradell Borough	244-001-15	Flood proof the DPW operating facility using Door-Damming as a flood barrier that is watertight and prevents the movement of water entering into the facility.	Flood	Existing	Structure and Infrastructure	2	High	High	Supports Borough's economic development Plan	High	SRL and FMA. For 25% local match, in-kind services. 1 Year	Oradell Department of Public Works	HMGP, PDM, FMA, RFC, SRL, Municipal Budget
Palisades Park	245-001-15	Sustained emergency lighting and power	Emergency energy allocations	Future	Structure/Infrastructure projects	2,3	High	\$300,000.00	Sustained critical infrastructure	Yes	1-2 years	Borough	Mitigation grants
Palisades Park	245-002-15	Provide for additional anchorage of outdoor emergency communications public alert system	Wind hazard	Future	Structure/Infrastructure projects	2,3	High	\$50,000.00	Continuity of emergency communications and public address during significant wind events	yes	2 years	Borough	Capital improvement/Communications grants
Palisades Park	245-003-15	Overpeck Creek sediment and erosion	Flooding	Future	Natural Systems protection	5	High	TBD	Flood risk reduction	High	3-5 years	Borough	Mitigation grant support

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Palisades Park Borough	245-004-15	Educate borough residents of flooding issues as well as potential flood insurance premium reduction	Flood Plain management	Future	Local plans & regulations	1,3	High	0	Significant impact throughout the borough will help keep residents & committee within borough	High	2 years	Council - ordinance committee	Council - Ordinance committee
Palisades Park Borough	245-006-15	Writing local flood ordinance using FEMA model ordinance	Flood plain Management		Local Plans & Regulations	3,5	High	\$5,000.00	Environmental quality	Yes	2 years	Borough	Borough
Paramus Borough	246-001-15	Replace the existing generator with a new diesel powered generator capable of powering the entire building- critical facility	All hazards	Existing	Energy Allocation	2	High	Med	None	High	Summer 2010	Borough of Paramus	HMGP, PDM

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Paramus Public Schools	246-002-15	Install a new diesel powered generator capable of powering critical areas of the building - Education bldg and primary shelter	All hazards	Future	Energy Allocation	2	Med	Med	None	Med	TBD	Paramus Public Schools / Board of Education	
Paramus Borough	246-003-15	Install a new natural gas powered generator capable of powering the entire building	All hazards	Existing	Energy Allocation	2	Med	Med	None	Med	Summer 2015	Borough of Paramus	HMGP, PDM
Paramus Borough	246-004-15	Install new water tight doors at the following sewer pump stations: Prospect St, Route 17, Southcrest, Dunkerhook, and Grove St	Flooding	Retrofit existing structures	Structure and Infrastructure	2	High	Med	None	Med	TBD	Borough of Paramus	HMGP, PDM, FMA, RFC, SRL, Municipal Budget
Paramus Borough	246-005-15	Install a new Flood Protection System at the Prospect St Pump Station	Flooding	Retrofit existing structures	Structure and Infrastructure	2	High	Med	None	Med	TBD	Borough of Paramus	HMGP, PDM, FMA, RFC, SRL, Municipal Budget

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Paramus Borough	246-006-15	Install additional submersible pump in dry well and install larger discharge header	Flooding	Future	Structure and Infrastructure	2,3	High	Medium	Capital improvements	High	5 years	HMGP/PDM/FMA	
Paramus Borough	246-007-15	Improve drainage and pumping capabilities/relocate controls above flood levels	Flooding	Future	Structure and Infrastructure	2,3	High	Medium	Capital improvements	High	5 years	Borough of Paramus	HMGP/PDM
Paramus Borough	246-008-15	Improve drainage and pumping capabilities/install bypass pump	Flooding	Future	Structure and Infrastructure	2,3	High	Medium	Capital improvements	High	5 years	Borough of Paramus	HMGP/PDM
Paramus Borough	246-009-15	Acquisitions and Elevations of repetitive loss structures in Mill Run neighborhood	Flooding	Future	Structure and Infrastructure	1,3	High	High	Support open space preservations	High	5 years	Borough of Paramus	HMGP/PDM/FMA/Blue Acres
Paramus Borough	246-010-15	Wire and install generators for traffic lights	All hazards	Future	Energy allocation for critical infrastructure	2,3	High	Medium	Energy allocation	High	5 years	Borough of Paramus	HMGP/PDM

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Paramus Borough	246-011-15	Improve stormwater management along public easement to reduce repetitive loss	Flooding	Future	Structure and Infrastructure	1,2,3	High	Low	Structure and infrastructure/capital improvement	High	5 years	Borough of Paramus DPW	HMGP, Capital funds
Paramus Borough	246-012-15	Install stormwater pump station and check valve within Dunkerhook Road area	Flooding	Future	Structure and Infrastructure	2,3	High	High	Structure and infrastructure/capital improvement	high	5 years	HMGP/PDM/FMA	
Paramus Borough	246-013-15	Install duck bills (one way valves) on stormwater outfalls	Flooding	Future	Structure and Infrastructure	2,3	High	Medium	Structure and infrastructure/capital improvement	High	5 years	HMGP/PDM/FMA	
Park Ridge Borough	247-001-15	Provide risk reduction measures on bridge	Flooding on 5th Street	Future	Flood risk reduction	1,2,3	High	\$250,000.00	No	Medium	10 years	Mayor	FEMA
Park Ridge Borough	247-002-15	Raise generator at PD	Flooding at PD	Future	Flood risk reduction	2,3	Medium	\$30,000.00	No	High	1 year	Mayor	FEMA

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Park Ridge Borough	247-003-15	Purchase flood caps/panels	Flooding	Future	Flood risk reduction	2,3	Medium	\$150,000.00	No	High	1 year	Mayor	FEMA
Park Ridge Borough	247-004-15	Install radio repeater in HS shelter	Shelter	Future	Communications	2,3	High	\$40,000.00	No	Medium	5 years	Mayor	FEMA
Park Ridge Borough	247-005-15	Provide a generator for the shelter area	Shelter	Future	Communications/shelter	1,2,3	High	\$30,000.00	No	medium	10 years	Mayor	FEMA
Park Ridge Borough	247-006-15	Purchase property on West side of town	Flooding on west side of town	Future	Acquire repetitive loss structure	1,3	Medium	\$400,000.00	No	Low	5-10 years	Mayor	FEMA
Park Ridge Borough	247-007-15	Reuse existing generator	Flooding at FD	Future	Flood risk reduction	2,3	Medium	\$75,000.00	No	High	2 years	Mayor	FEMA

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Ramsey Borough	248-001-15	Generator for Ramsey DPW and Westside Fire Station-Provide an emergency backup generator capable of powering the entire critical facility in the event of a power failure such as experienced during Hurricane Sandy.	All hazards-	Existing	Energy Allocation	2	High	High	Supports municipal emergency services and infrastructure.	High	As soon as possible-dependent upon funding.	Ramsey municipal Engineer and DPW	
Ramsey Borough	0248-002-15	Repair the overflow release gate at the Crystal Spring Lake Dam	Flood Control	Existing	Infrastructure Resilience	1,2,3	High	\$1,000,000.00	Relieves upstream flooding at De Baun Ave.	High	ASAP	Ramsey Municipal Engineer/ Ramsey Golf and CC Engineering	HMC Local Municipality
Ramsey Borough	0248-003-15	Create a local/area wide Hazard planning Committee to solve joint municipal planning	Local planning	Future	Local Planning	1,2,3	Low	0	Mutual aid for three (3) towns	Medium	ASAP	Ramsey, Mahwah, Allendale	Ramsey, Mahwah, Allendale

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Ramsey Borough	0248-004-15	Employ a civil engineer to design corrective measures to reduce roadway flooding	Road Flooding at Wyckoff Ave./Ramsey Library	Existing	Infrastructure Resilience	2,3	High	\$2,000,000.00	Allows emergency vehicles to respond to Ramsey & mutual aid to Mahwah	High	ASAP	Bergen County & Borough of Ramsey	Local, Bergen County, FEMA
Ramsey Borough	0248-005-15	Construct flood control measures	Flood control at De Baun Ave.	Existing	Structure & infrastructure	2,3	High	\$500,000.00	Mitigating flooding at De Baun Ave. will reduce stress at Crystal Spring Lake Dam.	High	ASAP	Ramsey and Bergen County Engineers	Local, County, FEMA
Ramsey Borough	0248-006-15	Flood proof the structure in accordance with engineering and code	Flood proofing at North Central Ave. Well Pump Station	Existing	Flood Proofing	2,3	Medium	\$200,000.00	Protects public water supply	High	ASAP	Municipal Ramsey/Mahwah - Federal	Municipal Ramsey/Mahwah - Federal
Ramsey Borough	0248-007-15	Elevate residential structures including but not limited to the DeBaun Ave. area	Flooding	Existing	Elevation	1, 2,3	Medium	\$1,500,000.00	CRS rating	Medium	Future	Private and Federal	Federal Government

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Ramsey Borough	0248-008-15	Provide an emergency backup generator capable of powering the entire critical facility in the event of a power failure such as experienced during Hurricane Sandy	Emergency power generation - Automatic backup generator at Ramsey DPW	Existing	Emergency Power Generation	1,2,3	High	\$500,000.00	Supports municipal emergency services infrastructure	High	ASAP	Ramsey Municipal Engineer and Public works Superintendent	HMG Funding and local municipal funding
Ridgefield Borough	249-001-15	Upgrade reception center to full shelter	All Hazards Sheltering	Improvements	Structure and Infrastructure	1	High		Municipal property upgrade.	High	1 year	Mayor and Council	HMGP, PDM
Ridgefield Borough	249-002-15	Provide for additional anchorage of outdoor emergency communications and public alert system	Wind hazard	Future	Structure/Infrastructure projects	1,2,3	Medium - Low	\$50,000.00	Continuity of emergency communications and public address during significant wind event	Yes	2 years	Borough	Capital Improvement/Communications grants
Ridgefield Borough	249-003-15	Educate borough	Flood plain Management	Future	Local Plans & Regulations	1,3	High	No accrued cost	Significant impact throughout the borough will help keep residents & committee within borough	High	2 years	Council - ordinance committee	Local
Ridgefield Borough	249-004-15	Review and revise local ordinance using FEMA guidance	Flood plain management	Future	Local Plans & regulations	1,3	Medium - High	\$5,000.00	Environmental quality	Yes	within 2 years	Borough council to ordinance committee	Borough supported

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Ridgefield Borough	249-005-15	Purchasing repetitive loss properties with flood plain	Repetitive loss properties in flood plain	Future	Structures	1,3	Medium	\$350,000.00	Environmental quality	4 properties	5 years	property owner with Borough support	Mitigation grant dollars
Ridgefield Borough	249-006-15	Elevate residential properties that are not interested in being acquired	Repetitive loss properties in flood plain	Future	Elevations	1,3	High	\$150,000.00 per home	Environmental quality	4 properties	5 years	Property owner	FEMA Mitigation grants and/or State run programs
Ridgefield Borough	249-007-15	Wolf Creek sediment and erosion control	Flooding	Future	Sediment and erosion control	5	High	TBD - \$500'000.00	Flood risk reduction	High	3-5 years	Borough	Mitigation grant support
Ridgefield Park Village	250-001-15	Generator for Sr. Center	All hazards	Existing facility	Energy Allocation	2	High	Low	N/A	High	1 year	Ridgefield Park OEM	HMGP, PDM
Ridgewood Village	251-001-15	Installation of a generator to support one of the three congregate care shelters in the Village.	All hazards	Makes the shelter facility more reliable.	Energy Allocation	2	High	High	Benefits include having a functional shelter. Heat, A/C, refrigerated food storage, warm meals, internet connectivity and social connectivity for displaced residents. Making	High Priority #2	1 year	DPW	HMGP, PDM
Ridgewood Village	251-002-15	Installation of a generator to the administration building that manages the other nine facilities.	All hazards	If this building is down the entire system is down.	Energy Allocation	2	High	High	Making the facility more resilient during the school day.	High Priority #3	1 year	DPW	HMGP, PDM

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Ridgewood Village	251-003-15	Installation of a generator to support one of the three congregate care shelters in the	All hazards	Makes the shelter facility more reliable.	Energy Allocation	2	High	High	Making the facility more resilient during the school day.	High Priority #4	1 year	DPW	HMGP, PDM
Ridgewood Village	251-004-15	Installation of a generator to support one of the three congregate care shelters in the Village. The High School would be the largest in capacity of the three congregate care shelters.	All hazards	Makes the shelter facility more reliable.	Energy Allocation	2	High	High	Making the facility more resilient during the school day.	High Priority #5	1 year	DPW	HMGP, PDM
Ridgewood Village	251-005-15	Installation of a generator.	All hazards	Makes the shelter facility more reliable.	Energy Allocation	2	High	High	Protect the structure by having the fire alarm system active during a power outage, which is a big fear with all the books and	Med Priority #6	1 year	DPW	HMGP, PDM
Ridgewood Village	251-006-15	Funding to hire one person to improve Village's CRS rating	Flooding's impact to our residents	Future	Improve Village's CRS rating from 7 to 6	1, 3	Low	\$75,000.00 per year	Better education and assistance to the residents	low	whenever funds become available	N/A	FEMA

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Ridgewood Village	251-007-15	Reconstructed level 1 after Hurricane Irene	Flooding of level 1 at Village Hall	Work done	Flood proof wall in level 1 to 1.01 above NJDEP flood level	2,3	High	\$700,000.00	Provide a rapid recovery after a flood	High	Complete	Ridgewood	Ridgewood
Ridgewood Village	251-008-15	Bid out a program to use biogas from plant anaerobic digesters to generate electricity	Loss of electric power at Water Pollution Control Facility	Existing	Sustainable energy program	2,3	High	\$4,000,000.00	Reduce plants demand on local grid to operate	High	Existing	Ridgewood & NSU	NSU & their partners
Ridgewood Village	251-009-15	Construct a turf field, lowering finished elevation by a min. of 1 foot to create additional flood storage	Flooding along brook corridor	Completed	Support approval of construction of a turf field	3,5	Medium	\$900,000.00			Complete	BOE	Taxpayers
Ridgewood Village	251-010-15	Install automatic transfer switches at all intersections to accommodate generator back up power for traffic lights	Traffic hazards - Loss of power		Infrastructure	1	High	\$15,500.00		High	6-12 months	OEM	Municipal budget
Ridgewood Village	251-011-15	Conduct study for flood proofing village library	Flooding of library	Future	Structure & Infrastructure	2,3	Medium	\$25,000.00	Preservation of Capital Assets	Medium	5 years	Municipal Engineering	HMGP

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Ridgewood Village	251-012-15	Increase outreach activities including distributing flood hazard handbooks and educational materials to residents to help them help themselves	Lack of understanding by public of flood risk	Existing	Public Education	1	High	\$5,000.00			6-12 mos.	OEM	Municipal budget
River Edge Borough	252-001-15	Develop a multidisciplinary all hazard working group	All hazards	Ongoing	Local Plans and Regulation	1	High	Low					
River Edge Borough	252-002-15	Harden emergency outdoor communications and public alert system	High winds	Future	Structure and Infrastructure	2,3	High	Low-Med	Continuity of emergency communications and public address during significant wind event	High	2 years	Borough	Capital Improvement/Communication Grants
River Edge Borough	252-003-15	Quick connect emergency generator to allow traffic signal to operate without manpower assistance	All hazards	Future	Energy Allocation	2,3	High	Low	Lessen the need to staff major intersections with law enforcement personnel	High	2 years	Borough and Bergen County Engineer	Capital Improvement/HMGP

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River Edge Borough	252-004-15	Elevate residential properties that are not interested in being acquired	Flooding	Future	Structure and Infrastructure	3	High	High	Environmental Quality	High	5 years +	Borough	HMGP and NJ State programs
River Edge Borough	252-005-15	Review and Revise local ordinance using FEMA guidance	All hazards	Future	Local plans and regulations	2,3	Medium-High	Low-Medium	Environmental Quality	High	Within 2 years	Borough Council to Ordinance Committee	Borough
River Edge Borough	252-006-15	Harden or replace utility infrastructure that may become compromised during weather event	All hazards	Ongoing, future	Structure and Infrastructure	2,3	High	High	Enhance utility services	High	2 years+	Borough and utility companies	Utility providers
River Edge Borough	252-007-15	Educate borough residents on flooding issues as well as potential flood insurance premium reduction thru NFIP	Flooding	Future	Local plans and regulations	1	High	Low	Significant impact throughout borough-will help keep residents and commerce within the borough	High	2 years	Council and Ordinance Committee	Borough
River Vale Township	0253-001-15	Remove FI Structure from FHA (DPW)	Flooding	Future	Structure and infrastructure	2,3	High	\$2M	Parcels would become open space	High	3-4 years	Twp. Council & Mayor	Bonding - HMGP, FMA
River Vale Township	0253-002-15	Remove FI Structure from FHA (PD)	Flooding	Future	Structure and infrastructure	2,3	High	\$6M	Parcels would become open space	High	3-4 years	Twp. Council & Mayor	Bonding - HMGP, FMA

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River Vale Township	0253-003-15	Remove FI Structure from FHA (FD)	Flooding	Future	Structure and infrastructure	2,3	High	#3M	Parcels would become open space	High	3-4 years	Twp. Council & Mayor	Bonding - HMGP, FMA
River Vale Township	0253-004-15	Remove or raise repetitive loss structures 30 structures ((single family homes)	Flood control	Future	Structure and infrastructure	1,3	High	\$7,000,000	Parcels would become open space	High	4-5 years	Property owners in partnership with township	Bonding - HMGP, FMA
River Vale Township	0253-005-15	Remove or raise repetitive loss structures. 26 structures (single family homes)	Flood control	Future	Structure and infrastructure	1,3	High	\$5,600,000.00	Parcels would become open space	High	4-5 years	Property owners in partnership with township	Bonding - HMGP, FMA
River Vale Township	0253-006-15	Raise repetitive loss structures. 28 structures (single family homes)	Flood control	Future	Structure and infrastructure	1,3	High	\$2,800,000.00	Parcels would become open space	High	4-5 years	Property owners in partnership with township	Bonding - HMGP, FMA
Rochelle Park Township	254-001-15	Build waterproof wall around sewer pump station.	Flooding	Flood proofing existing building.	Structure and Infrastructure	2	High	High	No	High	As soon as funding is acquired	Township	HMGP, PDM, FMA, RFC, SRL
Rockleigh	255-001-15	Clean stream/River allowing water to flow	Flood		Drainage & Erosion Mitigation	3,5	Medium	\$1,000,000.00 +		Medium	12 + months	Mayor & Council	Borough, State aid, Federal

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Rockleigh Borough	255-002-15	Look to acquire risk properties	Flood			1,3	Low	\$10,000,000.00 +		Low	12 + months	Mayor & Council	Taxes, State aid, Federal
Rutherford Borough	256-001-15	Acquire or elevation potential RL properties on Riverside Avenue	Flooding	Existing	Structure and Infrastructure	1, 3	High	High	Open space, env. preservation	High	5 years	Borough of Rutherford	HMGP, PDM, FMA, RFC, SRL, Blue Acres
Rutherford Borough	256-002-15	Reinforce riverbank stabilization at Riverside Avenue	Flooding/ Riverbank Erosion	Existing need to prevent further erosion in future.	Natural Systems Protection	3, 5	High	High	Open space and environmental quality	High	3 years as funding is made available	Borough of Rutherford/Bergen County	HMGP, PDM
Saddle Brook Township	257-001-15	Acquire emergency generator for shelter- NORTH end of twp	All hazards	Existing building	Energy Allocation	2	High	High		High	HMPG		HMGP, PDM
Saddle Brook Township	257-002-15	Acquire emergency generator for shelter- SOUTH end of twp	All hazards	Existing building	Energy Allocation	2	High	High		High	HMPG		HMGP, PDM
Saddle River Borough	258-001-15	Replace and expand local culvert to prevent overflow onto road	Local flooding making roads impassable	Existing	Infrastructure projects	2,3	High	\$125,000.00	Yes	High	implementing the action	County capital budget	Bonding

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Saddle River Borough	258-002-15	Survey activity room and provide for necessary changes	lack of shelter	Future	Structure and infrastructure projects	1,2	Low	\$5,000.00	No	Low	implementing the action	Borough budget	local budget
Saddle River Borough	258-003-15	Replace existing 1500 gallon gas storage tank with 2000 gallon storage tank	Inadequate fuel storage for emergency situations	Future	Infrastructure projects	2,3	High	\$25,000.00	No	Medium	implementing the action	Capital budget	Bonding
Saddle River Borough	258-004-15	Remove older emergency generator from PD/FD and place it to provide emergency power for a shelter	Lack of shelter	Future	Structure and infrastructure projects	2,3	Low	\$15,000.00	No	Low	implementing the action	Borough budget	Local budget
Saddle River Borough	258-005-15	Replace PD/FD generator with a dual fuel generator	Possible loss of power to emergency infrastructure	Future	Emergency allocation	2,3	High	\$75,000.00	Yes	High	implementing the action	Municipal budget/Capital preparation	Capital funding
Saddle River Borough	258-006-15	Survey and remove hazardous limbs over power lines	Tree limb damage to power lines	Existing	Natural systems protection	1,2,3	Low	\$5,000.00	No	High	implementing the action	Borough budget	Local budget

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Saddle River Borough	258-007-15	Replace copper wires with fiberglass wiring to extend to PD headquarters	Possible loss of power Police and Fire communications	Future	Infrastructure projects	2,3	Low	\$5,000.00	No	Medium	implementing the action	Municipal budget/Capital preparation	Capital budget, vendor
South Hackensack Township	259-001-15	Generator for Municipal Complex - 250 KW	All hazards	Existing	Energy Allocation	2	High	Med	N/A	High	Jan-15	Township of South Hackensack	HMGP, PDM
Teaneck Township	260-001-15	Reduction of flooding in affected areas	Flooding	Addresses existing infrastructure	Natural Systems Protection	1, 2, 3	High	Med	Supports Township emergency preparedness effort	Med	Future	Teaneck DPW	HMGP, PDM
Teaneck Township	260-002-15	Hazard mitigation of dangerous trees and tree limbs throughout the Township by electrical wires	High winds, loss of power	Future	Natural Systems Protection	1, 3	High	Med	Supports Township Emergency Preparedness efforts	Med	1 year	Township of Teaneck DPW	Municipal budget or other funding sources
Teaneck Township	260-003-15	Install a municipal fiber-optic cable aerially on a different route to bring voice and data from Police HQ to Fire Station 2 and Ambulance Headquarters.	Flooding	Replaces some underground cable repairs	Structure and Infrastructure	1	High	Med	This project will help improve the municipal wide-area computer network, and may help police crime-prevention efforts	High	1 year	Emergency Management Coordinator	Municipal budget or other funding sources

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Teaneck Township	260-004-15	Reduction of flooding in affected areas	Flooding condition at Tokoloka Park	Addresses existing infrastructure	Structure and Infrastructure	3, 5	Med	Med	N/A	Med	Future	Teaneck DPW	Municipal budget or other funding sources
Teaneck Township	260-005-15	Levee/Berm along river to protect DPW complex	Flooding at DPW Complex	Future	Structure and Infrastructure	2, 3	High	Med	N/A	High	Future	Teaneck DPW	HMGP, PDM
Teaneck Township	260-006-15	Build new DPW building outside flood area	Flooding	Future	Structure and Infrastructure	2	High		Enhance all aspects of Township public works including protection of equipment.	High	5 Years	Township of Teaneck	HMGP, PDM, FMA, RFC, SRL
Teaneck Township	260-007-15	Redesign and installation of storm sewer system-Downing Street	Flooding	Future	Structure and Infrastructure	2	High			High	Future	Township of Teaneck DPW	HMGP, PDM
Teaneck Township	260-008-15	Install new emergency power generators at three schools.	All hazards	Currently the three schools do not have emergency power generators.	Energy Allocation	2	High	High	Supports Township's Emergency Management Plan.	High	1 year	Township of Teaneck & Board of Education	HMGP, PDM
Teaneck Township	260-009-15	Acquire 671 Pomander Walk	Flooding	Future	Structure and Infrastructure	1, 3, 5	High	High	Will add to Open Space desired by public.	High	Immediately	Township of Teaneck	HMGP, PDM, FMA, RFC, SRL, Blue Acres

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Teaneck Township	260-010-15	Install equipment to accommodate generator hookup at various traffic signals.	All hazards	Addresses existing structures	Energy Allocation	2	High	existing funding levels are not adequate to	Supports Township's Emergency Preparedness efforts	High	6 Months	Teaneck Police Department	HMGP, PDM
Teaneck Township	260-011-15	Install five 5-cell and one 6-cell fixed public warning sirens/voice speakers to cover all of Teaneck to broadcast warnings and emergency notification to all residents	All Hazards	Future	Preparedness and Response	1	High	High	None	High	1 year	OEM Coordinator	Municipal budget, other governmental funding sources
Teaneck Township	260-012-15	Installation of backup generator at lift station	Lift station failure	Future	Energy Allocation	2	High	Med	Ensure traffic lights work properly during power outages	High	1 year	Teaneck DPW	HMGP, PDM
Teaneck Township	260-013-15	Reduction of flooding in affected areas. Replace storm drain system.	Flooding condition on Old New Bridge Road	Addresses existing infrastructure	Structure and Infrastructure	2	High	Med	N/A	Med	Future	Teaneck DPW	HMGP, PDM

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Tenafly Borough	261-001-15	Stabilize and armor the banks of the Tenakill Creek and tributaries in accordance with the Natural Resources Conservation Service (NRCS) standards and the NJ standards for Soil erosion and Sediment control	Flooding	Future	Structure/Infrastructure projects	3,5	Medium	\$17M	Capital Improvements, protect homes	Medium	5 years	Borough engineer	HMGP, PDM, Capital funds, other
Tenafly Borough	261-002-15	Install duckbill backflow preventers on the outlets of stormwater pipes that discharge to the Tenakill Creek and tributaries.	Flood	Future	Structure/Infrastructure projects	3,5	Medium	\$40,000.00	Capital improvements	Medium	5 years	Borough engineer	HMGP, PDM, Capital funds, other

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Tenafly Borough	261-003-15	Provide literature to educate the public about the risks of flooding and methods for protecting themselves and their property.	Flood	Existing	Education and awareness programs	1,3	Medium	\$5,000.00	Public education	High	5 years	Borough engineer	HMGP, PDM, Capital funds, other
Tenafly Borough	261-004-15	Elevation of structures in flood prone areas	Flooding	Future	Structure and Infrastructure	1,3	Medium	\$8.5M	Protect homes and property	Medium	5 years	Borough engineer	HMGP, PDM, Capital funds, other
Tenafly Borough	261-005-15	Prepare Geographic Information System (GIS) mapping of all stormwater facilities.	Flood	Future	Structure and Infrastructure	2,3,5	High	\$100,000.00	Provide mapping to future capital improvements	Medium	5 years	Borough engineer	HMGP, PDM, Capital funds, other
Tenafly Borough	261-006-15	Adoption of floodplain development regulations to ensure sustainability, neighborhood characteristics and resiliency.	Flood	Existing	Local plans and regulations	2,3,5	Medium	\$5,000.00	Public education	High	5 years	Borough engineer	HMGP, PDM, Capital funds, other

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Tenafly Borough	261-007-15	Elevate bridge of flood hazard	Flood	Future	Structure and Infrastructure	2,3	Medium	\$6M	Capital improvements	Medium	5 years	Borough engineer	HMGP, PDM, Capital funds, other
Tenafly Borough	261-008-15	Locate high ground and establish plans for staging emergency responders at these locations. This will prevent flooding from disrupting staging operations	Flood	Future	Local plans	32,3,5	Medium	\$25,000.00	Provide resiliency to OEM operations	High	5 years	OEM	HMGP, PDM, Capital funds, other
Tenafly Borough	261-009-15	Establish plan to evaluate the risk existing trees pose to existing elevated utilities. Trim or remove trees as appropriate in order to prevent high wind events from downing trees and damaging utilities.	Wind hazard	Existing	Structure and Infrastructure		High	\$40,000.00	Provide resiliency to OEM operations	High	5 years	DPW	HMGP, PDM, Capital funds, other

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Tenafly Borough	261-010-15	Purchase high axle vehicle to allow emergency response to neighborhoods isolated by flooding	Flood	Future	Structure/Infrastructure projects	1	Medium	\$250,000.00	Capital improvements	Medium	5 years	Borough engineer	HMGP, PDM, Capital funds, other
Tenafly Borough	261-011-15	Locate available facility and prepare plans for establishing a warming station for at-risk residents during cold weather conditions	Cold	Existing	Local plans	1	Medium	\$25,000.00	Provide resiliency to OEM operations	High	5years	OEM	HMGP, PDM, Capital funds, other
Tenafly Borough	261-012-15	Evaluate critical facilities and identify facilities that are at risk to damage during high wind events. Construct appropriate measures to mitigate the risk of winds to critical facilities.	Wind hazard	Existing	Structure and Infrastructure	2,3	Medium	\$500,000.00	Provide resiliency to OEM operations	High	5 years	DPW	HMGP, PDM, Capital funds, other

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Tenaflly Borough	261-013-15	Purchase and installation of generators at Mt. Carmel RC Church and Tenaflly Presbyterian Church	All hazards	future - if funding is available	Energy Allocation	2	High	High	supports emergency shelters	high	as soon as grants become available	Borough OEM	HMGP, PDM
Teterboro Borough	262-001-15	Removal of various culverts and channel improvements on the East Riser Ditch between Route I-80 and Huyler Street.	Flooding	Existing	Structure and Infrastructure	2,3,5	High	Medium	Promotes environmental quality	High	In process	Borough of Teterboro	Capital funds
Upper Saddle River Borough	263-001-015	Purchase and install Natural Gas Generator- designated borough shelter	All hazards	Existing	Energy Allocation	2	High	Med	Multi use community center/supports large portion of community	High	2015	Church of the Presentation	HMGP, PDM
Upper Saddle River Borough	263-002-15	Form Committee and meet to discuss and evaluate hazards and allocate resources to work on problems	All hazards		Preparedness for current and future hazard mitigation	1,2,3,5	High	0 or little cost	Yes	Yes		Borough	Borough

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Upper Saddle River Borough	263-003-15	Coordinate efforts with power electricity utility company. Borough as lead agency to handle critical facilities and utility hubs.	All hazards	complete yet ongoing maintenance	Structure and infrastructure	2,3,5	High	\$5,000.00	Yes	Yes		Primary - Borough, secondary - utility	Borough budget primary
Upper Saddle River Borough	263-004-15	Coordinate efforts with power electrical utilities to reduce and remove hazardous vegetation. Forward power supply lines.	All Hazards	Existing	Structure and infrastructure	2,3,5	High	\$85,000.00	Yes	Yes		Power Utility and borough for assistance	Utility company maintenance budget
Upper Saddle River Borough	263-005-15	Saddle River flood risk reduction via installation of new gabion walls and repair of existing gabion walls	All hazards		Structure and infrastructure	5	High	\$224,523.00	Yes	Yes		Borough	Capital funding, open space, federal funding
Upper Saddle River Borough	263-006-15	meet and consult with NY Rockland County OEM and NY state D.E.C.	All hazards	existing		2,3	High	0	Yes	Yes		Borough	none needed

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Upper Saddle River Borough	263-007-15	Investigate, research and review any technology or products to assist in flood proofing	All hazards			2,3	Medium	several thousand dollars	Yes	Yes		Borough	Borough budget
Upper Saddle River Borough	263-008-15	Investigate and research installation of one way valve at Lion Park Recreation Field.	All hazards	Initial action taken and being reviewed for cost & effectiveness		2,3	Medium to low	\$20,000.00	Yes	Yes		Borough and possibly Board of Ed.	Borough and Board of Ed.
Upper Saddle River Borough	263-009-15	Install additional drainage on county roads (catch basins) and increase pipe diameter.	All hazards	Action Complete	Infrastructure	2,3	Medium	\$15,000.00	Yes	Yes		County of Bergen	Bergen County Budget
Upper Saddle River Borough	263-010-15	Investigate and review cost and effectiveness of inflatable linear barriers	All hazards	Existing and future	Investigate	2,3	Medium to low	\$20,000.00	Yes	Yes		Borough	Borough budget
Waldwick Borough	264-001-15	Action will be identified as part of dam study currently being done	Flooding	Existing	Structure & infrastructure	2,3	High	\$30,000.00	Yes	High	2015	Waldwick	FEMA/Borough

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Waldwick Borough	264-002-15	Stream corridor cleaning and reinforcing	Flooding	Future	Natural Systems Protection	2,3,5	High	\$100,000.00	Solve some potential flooding issues	High	Future	Waldwick	FEMA
Waldwick Borough	264-003-15	Work with PSE&G to identify at risk lines and poles	All hazards	Existing		2,3,5	High	0	If power stays on, greater capability to assist disaster events	High	Existing	PSE&G	N/A
Waldwick Borough	264-004-15	Reconstruct Rip Rap behind flood walls	Flooding	Future	Structure & Infrastructure	2,3	Medium	\$100,000.00		High	within 2 years	Waldwick	FEMA/Borough
Waldwick Borough	264-005-15	Coordinate multiple jurisdiction cleaning of stream banks	Flooding	Future	Natural Systems Protection	2,3	Medium	\$5,000.00			Existing	Waldwick	Borough budget
Wallington Borough	265-001-15	Building berms	Flooding	Future	Levees and flood walls	5	High	\$40,000,000.00	Yes	High	10 years	New Jersey	Federal Government
Wallington Borough	265-002-15	Elevation	Flooding	Existing	Elevation of Locust Ave.	1,3	High	\$20,000,000.00	Yes	High	10 years	New Jersey	Federal Government
Wallington Borough	265-003-15	Elevation of Residential Structures. Repetitive loss properties	Flooding	Existing	Elevation of Structures	1,3	High	\$30,000,000.00	Yes	High	5 years	Wallington	Federal Government

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Wallington Borough	265-004-15	Elevation of Main Avenue	Flooding	Existing	Structure and Infrastructure	2,3	High	\$30,000,000.00	Yes	High	5 years	Wallington	Federal Government
Wallington Borough	265-005-15	Installation of Duck Bill on the outfall	Flooding	Existing	Control Measures	2,3	High	\$1,000,000.00	Yes	High	5 years	Wallington	Federal Government
Township of Washington	266-001-15	Elevate structures above flood water level. Raising utilities above flood water level.	Flooding	Future	Structure/Infrastructure projects	1,3	Medium	\$5,000,000.00	none	Low-medium	5 plus years	Twp. Of Washington	Grant and government funding
Township of Washington	266-002-15	Remove/acquire residential structures from repetitive flood loss properties	Flooding	Future	Structure/Infrastructure projects	1,3	Medium		none	Low-medium	5 plus years	Twp. of Washington	Grant and government funding
Township of Washington	266-003-15	Discussions and actions to plan and inform local elected and appointed officials and citizens about hazards and ways to mitigate them.	All hazards	Future	Education, planning and awareness program	1,2,3	High		This will further all community objectives improvements and plans.	High	1 plus year	Twp. Of Washington	Local

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Township of Washington	266-004-15	Building of retaining walls along stream walls to prevent future land erosion of specific residential properties	Flooding	Future	Structure/Infrastructure projects	2,3	High	\$5,000,000.00 - \$10,000,000.00	Will enhance environmental quality	High		Twp. Of Washington	Government funding
Township of Washington	266-005-15	Replace aging bridge at Woodfield Road	Flood	Future	Structure/Infrastructure projects	2,3	High	\$10,000,000.00 plus	Will improve environmental quality of the area and safety of motorists	High		Twp. Of Washington	Government funding
Township of Washington	266-006-15	Repair, replace, upgrade of antiquated dam system to prevent repetitive flooding	Flooding	Future	Structure/Infrastructure projects	2,3	High		Will affect other community objectives and actions	High		Washington Lake Association	
Westwood Borough	267-001-15	Acquire four (4) of the Severe Repetitive Loss properties in the Harding Ave/Nugent Pl neighborhood	Flood	Removes existing structures and prohibits future development in flood-prone neighborhood	Structure and Infrastructure	1,3	High	Med	Supports open-space preservation	High	Three (3) years	Borough of Westwood	Blue Acres, HMGP, RFC, SRL and FMA. For 25% local match, in-kind services, County & Borough open-space fund, CDBG and NFIP Increased Cost of Compliance

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Westwood Borough	267-002-15	Acquire thirty-six (36) of the Repetitive Loss properties in various neighborhoods subject to flooding		Removes existing structures and prohibits future development in flood-prone neighborhood	Structure and Infrastructure	1, 3	Med	High	Supports open-space preservation	Med	Five (5) years	Borough of Westwood	Blue Acres, HMGP, RFC, SRL and FMA. For 25% local match, in-kind services, County & Borough open-space fund, CDBG and NFIP Increased Cost of Compliance
Westwood Borough	267-003-15	Develop and implement a multi-hazard public awareness educational program	Multi-hazard	Existing & Future	Multi-Hazard	1, 2, 3	High	\$1,000.00	Community awareness as a whole in all facets of multi-hazards education	medium	Immediate to 2 years	Local municipal government, local OEM	local municipal government
Westwood Borough	267-004-15	Relocate DPW complex out of flood plain. Maintain property as open space	Flooding	Future	Structure and infrastructure	2,3	Medium	\$2.5M	Maintain continuity of municipal services. Supports open space preservation	Low	10 years	Local administration & government,	Local OEM, HGMP, PDM, FMA, RFC, SRL

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Westwood Borough	267-005-15	Enact local ordinances favorable to pre & post flood construction & streamline permit process for post flood events	Multi-hazard	Future	Local Plans & regulations	1,2,3	Medium	\$1,000.00	Reduction of SRL, hazard mitigation, economic development, protect the health and welfare of public, reduce exposure to first responders.	Medium	1 year	Local administration & construction office	Borough.
Westwood Borough	267-006-15	Elevate structures & utilities above base flood elevations.	Flooding	Immediate future	Elevation	2,3	Medium	\$3M	Reduction in SRL properties	High	over multiple years	Local municipal government, FEMA, DEP	HGMP, PDM, FMA, FFC, SRL
Westwood Borough	267-007-15	Implement SOP with local water utility to maintain 91' year-round elevation of Woodcliff Lake reservoir	Flooding	Existing & Future	Administrative	2, 3	High	0	Beneficial to the entire community. Post-flooding cost avoidance. Property preservation.	High	Immediate to 2 years	Local Water utility & local municipal officials	no funding required

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Westwood Borough	267-008-15	Develop a committee that meets regularly to discuss flooding issues and recommend projects	Flooding	Future	Local plans & regulations	1, 2, 3, 5	High	0	Beneficial to entire community. Potential to improve environmental quality.	High	Immediate	Local OEM	funding source not required
Woodcliff Lake Borough	268-001-15	Purchase & install permanent generator at DPW complex.	All hazards	Existing project is in planning & purchasing stage.	Energy Allocation	2	High	Med	Further commitment to emergency response	2	within 3 months	Borough Admin	HMGP, PDM, Capital funds
Woodcliff Lake Borough	268-002-15	Purchase & install permanent generators at municipal complex.	All hazards	Existing project in planning phase & purchasing.	Energy Allocation	2	High	Med	Further commitment to emergency response.	1	Within 3-6 months	Borough Admin	HMGP, PDM, Capital funds
Woodcliff Lake Borough	268-003-15	Relocate existing control panels, generators and stations access manholes out of the floodplain.	All hazards	Future project	Structure and Infrastructure	2	Med	Med	Elevate environmental quality.	3	Within the next 2 years	DPW & Borough Admin	HMGP, PDM

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Woodcliff Lake Borough	268-004-15	Construct a 2nd culvert under causeway to increase flow capability when existing culvert is obstructed by debris.	Flood Mitigation	Future project.	Structure and Infrastructure	1, 3	High	Med	Public Safety	4	Within next 2 years.	OEM & Borough Admin	HMGP, PDM
Woodcliff Lake Borough	268-005-15	Install power transfer switches and purchase portable generators for use maintaining signalized intersections during power outages.	All hazards	Future project	Energy Allocation	1	High	Low	Public Safety	5	Within next 2 years	Borough Admin, Police Chief, OEM	HMGP, PDM, Municipal budget
Woodcliff Lake Borough	268-006-15	Review and revise local flood ordinance using FEMA Model Ordinance	Flood Plan Management	Future	Local Plans & Regulations	1,3,5	Medium - High	\$5,000.00	Environmental quality	2	within 2 years	Ordinance Committee (Council)	Local appropriations
Woodcliff Lake Borough	268-007-15	Elevation of homes within floodplain	Repetitive loss in floodplain	Future	Structures	1,3	High	\$220,000.00 per home 20 homes	Environmental quality	4	5 years	Residents with Borough support	FEMA HMGP

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Woodcliff Lake Borough	268-008-15	Minimize loss of property to flooding and restore function of streaming through study & design	Flooding	Future	Natural System Protection	5	Medium	study = \$60,000.00 - \$100,000.00 Bank stabilization = \$5M	Environmental quality initiative of Borough & residents	1	5 years	Borough	DEP grants Rutgers Graduate studies
Woodcliff Lake Borough	268-009-15	Instituting new and revising existing building codes and development standards to ensure buildings withstand flooding.	Flooding	Future	Local plans and regulations	1,3,5	Medium	Minimal (costs would be directly associated with the attorney and engineering fees)	Other objectives include that this will help to meet those outlined under capital redevelopment & rehabilitation.	3	1 year	Borough	DEP grants, Sustainable NJ grant, Municipal budget
Wood-Ridge Borough	269-001-15	Relocation of repetitive loss DPW structure out of flood hazard area.	Flooding	Existing	Structure and Infrastructure	2, 3	High	High	Environmental protection	High	5 years	Borough	HMGP
Wyckoff Township	270-001-15	Acquire one home in the repetitive loss property area	Flooding from Maple Lake on Midland Park border		Structural	1,3	permanently removes flooding problem	\$700,000.00	Supports open public space requirements	High	1 year	TBD	Federal
Wyckoff Township	270-002-15	partner with power companies to remove risky hazards	Susceptible power utilities throughout town	Future	Maintenance	2,3	High	Staff time	Conserves power outages	High	1 year	TBD	Federal

Community Name	Mitigation Action No.	Mitigation Action	Hazards Addressed	Existing, future or N/A	Action Type	Goals Met	Benefits	Costs	Other Community Objectives	Priority	Timeline	Lead Agency	Funding Source
Wyckoff Township	270-003-15	Elevate home above the flood plain	Flooding		Elevation	1,3	High	\$100,000.00	Preserves tax base	High	1year	TBD	Federal
Wyckoff Township	270-004-15	Local committee to address local hazards	All hazards	Future	Planning	1,2,3,5	High	Free/volunteer	Enhances community capabilities	High	every 3 months	TBD	N/A
Wyckoff Township	270-005-15	Flood proof YMCA/Municipal shelter	Flooding	Future	Construction	2,3	High	TBD - \$500'000.00	Sheltering	High	5 years	TBD	Federal

Appendix I: Completed 2008 Hazard Mitigation Actions

2008 Hazard Mitigation Initiatives- Completed								
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered
2008	2014	200-007	Establish a Community Emergency Response Team (CERT)	BCOEM	Completed	The CERT Team was established in 2009. The State of NJ provided the materials to get the BC team up and running. The program is handled by BCOEM staff. The BCOEM holds two classes per year to train volunteers.	Completed	
2009	2014	203-006	Hirshfield Brook Clean-up	Bergenfield Borough	Completed	Trash and debris has been cleared from Hirshfield Brook.	Trash and debris has been cleared from Hirshfield Brook.	None.
2010	2014	205-001	Conversion of Borough-wide Communication System	Carlstadt Police Department	Completed		The Borough-wide Communication System was purchased and installed and it was upgraded to wideband to narrow band.	None
2010	2014	205-004	Ambulance Vehicle for Carlstadt	Borough of Carlstadt	Completed	Ambulance was purchased	The ambulance was purchased.	None
2008	2014	206-001	Emergency Generator To Borough Hall	Cliffside Park OEM	Completed 2010	Borough sought cost for project, then plans to complete project installation. Put project out to bid.	The total installation of generator to power the Borough Hall.	The only delay or obstacle was finding funding.
2008	2014	206-002	Emergency Pump Kits	Cliffside Park OEM	Completed 2009	Borough purchased items to makeup kit needed.	All items were research and purchased to form these kits.	Funding.
2010	2013	207-005	flooding at 50 Eckerson (Private Dwelling).	Homeowner (Dumont)	Completed	Flood control measures for property	Owner built stone wall along back of property over 100 year flood mark.	

2007	2009	Proposed after 2008 Plan	Borough of Dumont: NJEIT Flood Control Program/Area1	Matina & Son, Inc. (Dumont)	Completed	Constructing of drainage improvements in the area between Fleetwood Road at the north, Dakota Ave at the south, Holt Street at the east and Cherokee St at the west.	Brooks and runoff areas were widened, deteriorated drain pipes were replaced and a holding pond was established to handle large volumes of water collected from improved drainage feeds.	Underground utilities presented a problem related to drain pipes and small water way feeds.
2009	2009	Proposed after 2008 Plan	Dumont Generator installation at two sewage pump stations in town.	DeMaio Electrical Co. (Dumont)	Completed	Improvement involved installing generator support at two of our sewage pump stations and a quick connect hook up at the other 3 pump stations allowing continued support of two facility and quick hook up of portable generators at the other three.	Our White Beeches Drive pump station and our Lafayette Ave sewage pump stations were equipped with 30kw generators allowing continued sewage pumping. Quick hook ups were installed at the other three pump stations.	None
2013	2013	Proposed after 2008 Plan	Dumont Generator installation at DPW Facility	Academy Electric (Dumont)	Completed	Improvement involved installing generator support at our Department of Public Works Facility.	Our DPW was equipped with a 100 kw generator allowing continued electrical support of this facility.	Securing of required permits caused a delay in the process of performing the installation of this generator.
2009	2009	Proposed after 2008 Plan	Dumont Generator installation at Fire Company #3.	Academy Electric (Dumont)	Completed	Improvement involved installing generator support at our Fire Company #3	Our Fire Company #3 was equipped with a 40 kw generator allowing continued electrical support of this facility which also serves the borough as a secondary dispatch center in the event we needed to vacate our primary dispatch center.	none
2008	2008	Proposed after 2008 Plan	Dumont Generator installation at Borough Hall.	Academy Electric (Dumont)	Completed	Improvement involved installing generator support at our borough hall/ police dispatch center.	The Borough Hall was equipped with a 157 kw generator allowing continued electrical support of our borough hall and police dispatch center	none
2009	2009	Proposed after 2008 Plan	Dumont LED traffic lights and control box upgrade	Allan Briteway Electrical Inc. (Dumont)	Completed	Improvement involved installing LED lights in all borough owned traffic lights and installing quick connects hook ups for generator support if there is a power failure.	Borough owned traffic lights were equipped with LED lights and quick connect hook up were installed to allow generator support during power outages	none

2010	2010	Proposed after 2008 Plan	Dumont sports field Lightning Detection System	Commercial Recreation Specialists (Dumont)	Completed	Plan involved installing lightning detectors in 5 sports field within the Borough of Dumont. The project was designed to improve safety for all participants on borough athletic facilities.	Borough owned fields were equipped with automatic lightning detection devises. Allow earl warning of lightning strikes in the area of play	none
2012	2013	Proposed after 2008 Plan	Dumont Flood Control Project : NJEIT Phase 2 Improvements	Tomco Construction, Inc. (Dumont)	Completed	Drainage improvements to the Hirschfield Brook located in the east section of the borough.	Brooks and runoff areas were widened, de-snagged , and new brook walls were installed in order to improve drainage flow and rate.	Right of way agreements were required to allow contractors to access significant amounts of brook areas.
2008	2014	Proposed after 2008 Plan	Emergency Power at Marietta Parkway Pump Station	East Rutherford OEM	Completed	Installation of diesel generator at Sewage Pump Station	Project is part of a three-phase generator installation project. Project is complete and has a "fail safe" back up, auxiliary engine.	Project is part of a phased program. Phase I of III.
2008	2013	215-001	Emergency Generator: Emergency power Upgrade for 9-1-1 and communications operation at 75 S. Van Brunt St. Est \$35,000	City of Englewood	Completed	The City of Englewood Police Department Communications Center was recently moved to an adjacent room within the City of Englewood Police Department Headquarters, outfitted with new equipment and fully connected to the in house generator. All City of Englewood Police Department Communications Center 9-1-1, and communications equipment has sufficient, and dependable backup power and can operate at full capacity during times of utility failure	Over the past year, the City of Englewood Police Department Communications Center was reconstructed, reequipped, and connected to the in house power generator	Funding was the only obstacle that delayed the implementation of this project.
2008	2013	215-002	Emergency Generator: Emergency power to operate shelter facilities in an emergency at Englewood Public Schools (7 designated shelters). Est. \$210,000	City of Englewood	Completed	Generators have been installed in both the primary and secondary shelter locations for the City of Englewood. A new proposed mitigation project has been entered for the connectivity of the remaining portions of the building, those not already connected, to the generator, to allow the sites to be functional during periods of utility loss.	Generators were installed at the primary, and secondary sheltering facilities for the City, specifically the Janis Disthmus Middle School generator, located at 325 Tyron Avenue, and at the Dr. Greco School, located at 50 Durie Ave., respectively.	Funding was the only obstacle that delayed the implementation of this project.

2008	2014	217-001	Property Acquisition	Borough of Fair Lawn	Completed	Property purchased using municipal open space funds	Property purchased	Funding
2008	2014	217-003	Repair Electrical Panel at Memorial Park	Borough of Fair Lawn	Complete	Repair electrical panel at Memorial Park and raise electrical panel	Project Complete	Delayed due to lack of funding
2008	2014	217-006	Prospect Street Sewer Pump Station	Borough of Fair Lawn	Completed	Convert the two compartment stations to one wet well	Project complete	None
2008	2014	220-001	Emergency power generator Bender Court	Franklin Lakes OEM	Completed	Install generator ant Bender court firehouse.	yes	
2008	2014	220-002	Lightening Warning System	Franklin Lakes OEM	Completed	Lightening Warning System	yes	
1/1/2008	1/1/2009	222-001	More Dredging (Glen Rock) diamond Brook	Glen Rock DPW	Completed	Used Capital Funds To Complete Project To Mitigate Flooding	All dredging was completed during the reporting period	None
3/1/2013	3/1/2014	225-001	Pumping station Franklin & Rte. 17 need back of back up power.	Borough of Hasbrouck Heights	Completed	Back up generator installed at this pump station	Completed	N/A
8/1/2008	3/1/2014	226-003	Replace Damaged Foot Bridge and Clear Debris at the Crescent Stream Crossing	Borough of Haworth	Footbridge has been replaced.	Footbridge was replaced in 2010-2011.	Action completed.	
8/1/2008	3/1/2014	227-002	Build retaining walls for the library.	Borough of Hillsdale	Completed	The project was completed in 2009.	Project completed.	No problems or delays. The retaining walls are working well.

4/1/2008	11/1/2013	228-017	Transmission upgrade all departments	Ho-Ho-Kus OEM	redesign complete	Narrow radio band transmission system redesigned for: Fire Dept., Police Dept., Department of Public Works and Ambulance Corp.	Narrow band radio equipment purchased by the Borough and installed in various departments, equipment and in the appropriate headquarters	The project was carried for budgeting and installation schedules. No funding was received.
4/1/2008	6/1/2010	228-001	Expand detention system by 13.5 million gallons	Ho-Ho-Kus OEM	completed field work and landscaping	Obtained County grant to do project. The recreation Commission and Board of Education participated in the completion of the project.	Area cleaned north of the detention area. Purpose was to increase storm water.	The work progressed as planned; the soil was removed to proper elevation.
4/1/2008	10/1/2010	228-010	Lower field east of tributary #1 and landscape for public use.	Ho-Ho-Kus OEM	completed landscaping of lower field	Obtained County grant to complete landscaping of lower field, install stone wall seating and soil protection, and install lightning detection system.	Landscaped lower area north of existing detection system. Purpose was to have soil stability in the new storage area.	The work progressed as planned; the soil was removed and grass was planted.
2008	2014	229-003	Emergency generator for 105,000 sq. ft Leonia High School	Leonia Board of Education	Completed	Generator for high school	Project was completed in 2014	
2008	2014	229-004	Emergency generator for 105,000 sq. ft Leonia Middle School	Leonia Board of Education	Completed	Generator for middle school	Project was completed in 2014	
2008	2014	234-002	Emergency Power for Fire Station #2	Maywood OEM	Completed	The borough contracted with a cellular phone company for the construction of a cellular tower and associated mechanicals in the rear of Fire Station #2 (30 West Hunter Avenue). As a condition of this contract, a generator was supplied and installed to provide emergency power for the entire fire station.	Generator was installed, tested, and functional	Initial contract delays
2008	2014	237-001	New salt truck	Borough of Moonachie	complete	We recognized the need for a new plow truck and salter.	We purchased a truck, a plow and a small salter	cost

#####	12/1/2013	238-034	Acquire 6 Repetitive Loss Properties	New Milford Borough Clerk's Office	Completed	Acquired 6 flood prone properties. Structures leveled.	6 repetitive flood prone properties were demolished thereby removing them from flood areas.	None
2008	2014	NJMC-001	Restoration of Kane Tract Levee	Meadowlands Conservation Trust	Completed	Restoration of the levee was a temporary fix to alleviate flooding in Carlstadt, Little Ferry, S. Hackensack and Moonachie. A permanent fix was completed through the construction of new tide gates at Bashes Creek in Moonachie (2010-2011).	See above	N/A
2008	2014	NJMC-005	Rutherford/East Rutherford Drainage System Restoration	NJDOT	Completed (2009-2010)	Cleaning of ditches from Route 17 to the Rutherford tide gates.	See above	N/A
2008	2014	240-001	Generator at EOC	Borough of Northvale	Completed	emergency generator for eoc	2009 funding was received CDBG	none
2008	7/6/1905	241-001	Installation of an Emergency Generator at Primary Shelter	Borough of Norwood	Completed	The Norwood Board of Education managed and financed this project.		
2008	2014	245-003	Additional backup snow removal	Palisades Park DPW/OEM	Completed	Additional backup of snow removal equipment.	MOU's were set in place with private contractors.	
2008	4/1/2014	246-001	Replacement of Police Dept. Generator	Borough of Paramus	Completed	Installed a new diesel powered generator capable of powering the entire building	Installed a new generator	Funding, study for required power and wiring configurations
2008	2014	247-002	Mill Pond Dam Restoration	Park Ridge OEM	Completed and inspected	The dam was evaluated and a scope of work was established. The work has since been completed, and the state has inspected and signed off on it.	The project was completed and inspected.	N/A

2008	2014	247-003	Bank stabilization measures along the Pascack Brook	Park Ridge OEM	Completed	Bank stabilization was needed, along with removal of trees and roots along the brook. A scope of work was developed and implemented. The work was contracted and completed this year.	The project was finished. All stabilization completed and roots removed.	N/A
1/1/2013	3/1/2014	247-004	Radio Communications/ interoperability	Park Ridge OEM	completed	Several radios were purchased through a grant the local Fire Department received.	Several radios and programming software were apparently received from a grant through the Fire Department	None
2008	2013	248-001	Prune Trees that may cause power disturbances (Ramsey)	Orange and Rockland Electric Utility	Completed	Trees throughout Ramsey were pruned by the utility at various times. Maintenance continues.	Tress throughout the Borough have been pruned around power lines on a regular maintenance schedule.	
2008	2014	252-002	252-002 Increase Drainage on main roads	River Edge	Completed	Drain vaults needs to be replaced	A much larger drain vault at the low point on Voorhis Avenue was installed Spring 2014. Voorhis Ave drainage has improved, as well as Elm Ave, which feeds into it.	
2008	2014	253-004	Constant flooding on InterGlen Ave. and Rivervale Rd. by Holdrum School. (River Vale). Possible solutions more sewer; change of grading	River Vale DPW	Completed	work completed	elimination of flooding issues at this location	none known
2008	2014	253-002	Overhauling trees/limbs (elimination) Above and along roadways (River Vale)	River Vale DPW	Completed	work completed	Overhauling trees/limbs (elimination) Above and along roadways (River Vale)	none known
7/3/1905	7/5/1905	258-001	Rouet 17 surveillance system	Saddle River OEM	Completed	The Borough installed a surveillance camera on RT 17 at East Allendale Rd. which is monitored by the Saddle River Dispatch Center 24/7. Agencies are free to contact the SRPD for information on Rte. 17 status at that location. Installed camera system		O&R utilities very difficult to deal with, had to call the Governor's office to resolve issues

2008	#####	260-007	Storm surge destroying sewers: Replace broken sewers	Teaneck DPW	Completed	Sanitary sewer manhole damaged due to excess storm water infiltration during 2009 weather event.	Sanitary sewer manhole was replaced and the roadway was restored with new asphalt.	None.
2008	2010	261-002	Replace Sewer Main at Dean Drive to relieve flooding	Borough of Tenafly	Completed	The drainage improvements were completed. The contracts were awarded in 2009 and the project was completed in 2010.	Flooding issue was addressed in two phases and mitigated	None
2008	2014	262-001	Industrial Avenue Stormwater Pump Station	Borough of Teterboro, PANYNJ	Completed	Construction of a new stormwater pump station to convey flow from the airport and West Riser Ditch to Berry's creek.	Design/construction	None
2008	2014	262-002&003	West Riser Ditch Stream Cleaning	Borough of Teterboro	Completed	Stream dredging/desnagging along West Riser Ditch between Route I-80 and Industrial Avenue pump station.	Design/construction	None
2013	2014	266-005	Install back-generator at municipal complex/police headquarters	Township of Washington	Completed	Back-up generator was installed and operational as of February, 2014.	Funding was secured, back-up generator was installed and became operational as of February, 2014.	None
2103	2014	266-004	Fix/repair or replace existing town wide siren / alerting system for fire personnel	Township of Washington	Completed	The existing fire siren alerting system has been refurbished and repaired. The existing system had four separate siren heads in four different locations strategically located throughout the Township. The refurbished / repaired system now only has three siren heads strategically located in three locations..	The existing fire siren alerting system was refurbished and repaired at a cost bared by the Township.	Some residents have voiced their disapproval and disdain for the fire sire alerting system.

2008	2014	267-001&002	Engineering study of channel stabilization: 18" cast iron plus 20" clay sanitary sewer trunk line is exposed plus bowed at Pascack Brook, Westwood Ave near Park Pl.	Borough of Westwood	Completed	Engineering study of above-referenced Action Title performed by Boswell Engineering.	Engineering study completed	None
2008	2014	267-003	Musquapsink Brook, repair 15" high pressure line at First Ave near Bogert Ave. Second location Prospect Ave near Goodwin Ter.	Borough of Westwood	Completed	Repair of above-referenced Action Title.	Repair of 15" high pressure line at First Ave near Bogert Ave and repair of same 15" high pressure line at Prospect Ave near Goodwin Ter.	None
7/5/1905	7/5/1905	268-001	Install folding stop signs at 7 intersections	Woodcliff Lake Police and DPW	Completed installation of folding stop signs	Folding stop signs installed at 7 intersections in Woodcliff Lake: Kinderkamack Road & Prospect Avenue, Woodcliff Avenue & Pascack Road, Glen Road & GSP exit 171, Glen Road & Chestnut Ridge Road, Chestnut Ridge Road & County Road, Chestnut Ridge Road & Tice Blvd., Chestnut Ridge Road & Woodmont Drive. This project has freed police officers to handle more pending emergencies other than traffic control.	folding stop signs installed	None
2008	2014	269-002	Engineering Study of Capacity of Stormwater System near Anderson Ave.	Wood-Ridge OEM	Completed	Study was needed to inspect sewer pipe on Oak Avenue near Anderson Avenue	Neglia completed the study, which found that the pipe was clogged. Entire sewer pipe along Oak Avenue was replaced.	

Appendix J: 2008 Outstanding Mitigation Actions

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2008	2014	200-001	Increase the flow capacity of Allendale and Ho-Ho-Kus Brook	Borough of Allendale	Ongoing	The Borough needs to verify with NJDEP regarding the required permits and the need of site access agreements. A hydrologic and hydraulic study of the brooks and their drainage areas needs to be analyzed to determine the capacity of the existing system. Once study complete, an engineering solution needs to be designed and incorporated into bid documents.	Action was temporarily placed on hold due to resource/budget constraints, impacts from Hurricane Irene and Hurricane Sandy.	Budget constraints. Hurricane Sandy impacts and remediation efforts for same.	The project is still very relevant. The anticipated completion date should be revised. Schedule T/B/D
2009	2013	202-002	Inspections of Bridges, Culverts & Retention	ALPINE - Engineering, DPW	Ongoing	Ongoing inspections to ensure bridges, culverts and retention basins, as well as other stormwater control structures in Alpine, are fully operational and properly maintained.	Replacement of the Berkery Place culvert (July 2012) through municipal capital improvement funding to alleviate repetitive	"NO OUTLET" (Dead End) roadway requiring timely notification to affected residents, pre- staging of	Action is still relevant and ongoing as an annual inspection program.
2009	2013	202-003	Back-Up Power for the Primary Shelter (Alpine Public School)	Alpine BOE, Alpine Building Department	Deferred	Provide primary shelter (Alpine Public School, 500 Hillside Avenue) with emergency electrical back-up power.	Action was DEFERRED due to large scale capital structural improvements planned to school	Costs associated with the school building project were sourced through private funding (pledges). Revenue fell short of anticipated goals.	Action is still relevant contingent with ongoing BOE approval and source funding. Anticipated completion date should be revised

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2008	2014	200-038	Evaluate/modify/adopt new: Various development	BC Planning	Ongoing	New regs for floodplain development; hillside development; open space regs and protected lands; waterfront setback regs; stormwater management regs; stream dumping regs; and subdivision and development regs	BC Planning and Econ Dev in final stages of submitting new revised Site Plan Dev and Subdivision Dev Resolutions, which represent all of BC's Land Use Regs.		
2008	2014	200-047	Elevate/acquire hazard-prone structures (Voluntary)	BCOEM	Ongoing	Acquisition or elevation of hazard-prone structures	Structures in Westwood and new Milford have been purchased		
2008	2014	200-052	Educate public regarding potential retrofits for privately owned land	NJOEM	Ongoing via NJOEM	This strategy has not been implemented by BCOEM but exists at the state level.	N/A	The State of NJ has undertaken a public information campaign to address retrofits for flood-prone properties.	This action is not a County project and will be removed.
2008	2014	200-066	Develop volunteer staff to help with project assessment, development and	BCOEM	Not completed	This strategy has not been implemented.	N/A	This strategy has proven difficult to implement due to	Action is still relevant and should be kept in the Plan.
2008	2014	NJMC-007	Identification of existing buildings and infrastructure located in ID'd hazard areas	Bergen County	Not completed	This mitigation project has not been completed due to financial constraints. Furthermore, this project is more appropriately classified as a Bergen County county-wide mitigation strategy, as opposed to a NJMC mitigation strategy.	N/A	As the NJMC District only encompasses a portion of 10 of the 70 towns in Bergen County, it is not financially feasible for the NJMC to undertake this effort without outside funding.	This action is still relevant and would be a worthwhile effort in mitigation planning. It will be re-classified as a Bergen County county-wide mitigation strategy.

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2008	2014	NJMC-008	Identification of future buildings and infrastructure located in ID'd hazard areas	Bergen County	Not completed	This mitigation project has not been completed due to financial constraints. Furthermore, this project is more appropriately classified as a Bergen County county-wide mitigation strategy, as opposed to a NJMC mitigation strategy.	N/A	As the NJMC District only encompasses a portion of 10 of the 70 towns in Bergen County, it is not financially feasible for the NJMC to undertake this effort without outside funding.	This action is still relevant and would be a worthwhile effort in mitigation planning. It will be re-classified as a Bergen County county-wide mitigation strategy.
2008	2014	NJMC-009	Describe/quantify potential hazard impacts to buildings throughout Bergen County	Bergen County	Not completed	This mitigation project has not been completed due to financial constraints. Furthermore, this project is more appropriately classified as a Bergen County county-wide mitigation strategy, as opposed to a NJMC mitigation strategy.	N/A	As the NJMC District only encompasses a portion of 10 of the 70 towns in Bergen County, it is not financially feasible for the NJMC to undertake this effort without outside funding. If/when HAZUS is updated, this action may become feasible.	This action is still relevant and would be a worthwhile effort in mitigation planning. It will be re-classified as a Bergen County county-wide mitigation strategy.
2013	2014	203-001	Improve All Stormwater Control.	Bergenfield Borough	On-going	Catch basins and storm sewers are repaired and/or improved as necessary in conjunction with the Borough's annual roadway improvement projects.	Catch basins and storm sewers have been repaired and/or improved as necessary as part of the Borough's annual road improvement projects.	Funding is not available for capital improvements of the entire storm sewer system.	Yes. The Borough continues to evaluate and repair or improve its storm sewers annually.

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2013	2014	203-009	Metzler's Brook Drainage Improvements	Bergenfield Borough	On-going	An Engineering/Hydrologic Study of Metzler's Brook has been completed. Flooding is a regional problem. Recommendations to reduce flooding include construction of an expansive detention system. The anticipated construction cost of the recommended detention system is too great for the Borough to proceed.	The Borough Engineer completed a hydrologic study of Metzler's Brook and provided recommendations and construction cost estimate.	Funding for construction has to be secured for the project.	Yes; however, the project cannot proceed until funding is secured for the project.
2009	2014	203-013	Veterans Memorial Park Drainage Improvements	Bergenfield Borough	Ongoing	Three (3) underground retention chambers were installed at Veterans Memorial Park, but the drainage system has not been connected to the Borough's storm sewer system to date. Flooding persists on Wildrose Avenue.	Three (3) underground retention chambers have been installed at Veterans Memorial Park, but the drainage system has not been connected to the Borough's storm sewer to date.	Funding for construction has to be secured for the project.	Yes. The project will proceed after funding is secured.
2009	2014	203-014	New Bridge Road and Windsor Road Storm Sewer Improvements	Bergenfield Borough	Ongoing	Hydrologic and hydraulic analysis of the drainage area and storm sewer has been performed.		Funding is not available to proceed with the project.	Yes, the project can proceed once funding is secured for the project.
2008	7/6/1905	204-001	Elm Avenue Culvert Replacement /Boswell Eng Proj BC-078	Borough of Bogota/Bergen County Prj#C4-19	Ongoing/in progress	As of 8/5/14, Bogota is doing outreach to affected homeowners and area businesses. It is expected that the project will go out to bid in the next few months (Fall 2014).	preparation for construction and road closures, moving of utilities, pre construction meeting with Borough of Bogota Police and Fire Departments.	Appropriation of money for projects.	Project will be going out to bid in Fall 2014.

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2008	2014	204-002	Olsen Park Ditch	Borough of Bogota/Bergen County	Ongoing/in progress	Discussion with Bergen County Engineers Office as to future inspection of roadway and embankment request	Request physical site inspection of ditch & embankment	Budgetary constraints	Will advise status as time goes on
2010		205-003	Acquisition of property for public parking use	Borough of Carlstadt	Withdrawn	Property next to the Borough Hall, 507 Jefferson was purchased to be used for public parking, however environmental issues prevented the Borough to move forward on its plans and was instead put back into the market and sold less than a year later.	The final goal was not accomplished	Environmental contamination	Yes, public parking remains a concern.
2010		205-002	Emergency warning system	Carlstadt OEM	Deferred	Lack of funds has prevented the purchase and installation of the Emergency Warning System.	The project is still pending	Lack of funding remains the only obstacle to accomplish this goal.	Yes, the action is still relevant to Carlstadt's Hazard Mitigation Plan. A date of action will be reviewed.
2008	2014	206-003	Provide Backup Power for Shelters	Cliffside Park OEM	Ongoing		Planning and cost evaluation for project.	Funding.	
2010	2013	207-001	Backup Power	Borough of Closter/Closter Board of Ed	Ongoing	Obtain funds to install back up generators at both public schools and small generators for back up power at intersections controlled by traffic lights. .	NO	Funding	Yes. Still working on funding source for school generators. Working with Bergen County is find solution for both county owned traffic lights and town owned lights. Working on other solutions then

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2010	2013	207-002/207-003	East Side flash flooding, Piermont &	Borough of Closter	Ongoing	Obtain funds to widen and stream cleaning	NO	Funding	Yes. funding needed for both engineering work and actual stream work.
2010	2013	207-004	Equipment Removal from Borough Hall basement	Borough of Closter	Ongoing	Removal of critical infrastructure for public safety from basement of Borough Hall	NO	Funding	Yes. no know completion date.
2010	2013	207-006	Emergency Generator for school	Closter OEM/Closter Board of Education	Deferred	Acquire emergency generator for school building, to be used as shelter	Nothing	Lack of funding	Deferred at this time due to updating of shelter plan and move to a regional large shelter outside of the jurisdiction
2010	2013	207-007 & 008	Waterway enlarging and cleaning	Borough of Closter	Ongoing	Waterway enlarging and cleaning to protect from flash flooding.	None	Funding, DEP	Project still relevant
2008	2014	208-001	Dredging of Tenakill Brook	Cresskill DPW	Not completed	Removal of silt from brook to address flooding	N/A		Action is still relevant. However, a regional approach is needed to achieve success. Coordination with surrounding municipalities would be required to make it worthwhile.

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2008	2014	209-001	Secondary railroad track crossing for emergency vehicle access	Demarest OEM	Not completed	This project has not been completed due to lack of funding	N/A	Lack of funding source	Yes, the action is still relevant and should remain as part of Demarest's mitigation strategy.
2008	2014	209-002	Generator for EOC at Wakelee Drive	Demarest Police Department	Not completed	Funding has not been received for this project	N/A	Lack of funding	This action is still relevant and should remain in Demarest's mitigation strategy
2008	2008	210-005	Borough of Dumont Flood Management Plan	T&M Associates	Proposed but not initiated.	Proposed work was to be performed to eliminate flooding. This was to be phase #3 of the proposed three phase flood management plan. Phase #3 was never initiated by the boro.	There was no accomplished action related to this project as the project was never initiated.	Funding for this project was the obstacle we faced. This was to be the 3rd phase of a 3 phase project. The borough was and continues to look for funding through grants. As of this date, phase three is still proposed but not approved for initiation.	The actions are still very relevant. The actions should continue to be examined and funding sources should continue to be researched and acted upon.
2008	2008	210-010	Borough of Dumont Flood Management Plan	T&M Associates	Completed	Proposed work was to include the cleaning of the brook and sewer located in front of #30 Davies Avenue. These actions were performed until such time as phase 2 of the flood management plan was initiated.	Cleaning of sewers and the brook at this location worked to eliminate some flooding which took place under moderate rainfall. Under heavy rain this area still flooded.	Cleaning of sewers and brook only cleared the way for water to flow under moderate rainfall conditions. Under extreme conditions, the sewers and brook were unable to handle the water. Phase 2 of project allowed runoff system to work.	Actions were completed and eventually replaced by a much more thorough stormwater plan which included widening of the brooks and installation of new sewer catch basins.

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2008	2008	210-004	Borough of Dumont: Flood management plan	T&M Associates	Completed	Proposed work to be performed was to clean debris and leaves from sewers and storm drains at least 3 times per year.	The removal of debris was performed by our department of public works employees. This worked to increase runoff and the flow of water during storms.	Keeping DPW employees on a regular schedule was important. This project was to be conducted until such time as a more permanent flood water management plan could be put in place.	actions were performed and completed and then were replaced by a flood management plan initiated in 2012 under the Dumont Flood Control Project: NJEIT Phase 2 Improvement.
2008	2014	212-001	Emergency Power at 107 Carlton Avenue, ERFD Station No. 2	East Rutherford OEM	On-Going	Installation of diesel generator at ERFD Fire Station No. 2	Project is part of a three-phase generator installation project. The design of this location is set to begin in June of 2014.	Project is part of a phased program. Funding allocation needed to be established prior to beginning the overall program.	Action is still relevant and a schedule has been established.
2008	2014	212-002	Emergency Power at 312 Grove Street, ERFD/EMS Station No. 1	East Rutherford OEM	Deferred	Installation of diesel generator at ERFD/EMS Station No. 1	Project was part of a three-phase generator installation project. The project was put on hold and the funding was reallocated to a more critical facility - East Rutherford	Project is part of a phased program. The project was placed on hold and will be part of a second generator	Action is still relevant and will be rolled into the 2014 HazMit Plan.
2008	2014	212-003	Emergency Power at 37 Vreeland Avenue - Shelter Location	East Rutherford OEM	Ongoing	Installation of diesel generator at Senior/Civic Center - Shelter Location	Project is part of a three-phase generator installation project. Project is in design phase and is scheduled to have a bid awarded no later than May, work to begin in	Project is part of a phased program. Phase II of III.	Action is still relevant and scheduled to be completed by August 2014.

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2008	2014	213-004	Generator: update	Edgewater Board of Education	Nearly Complete	School has been replaced with new facility. Generator being delivered for installation.	See above	N/A	Remove from plan
2008	2014	213-003	Debris cleanup from Palisades	Edgewater DPW	Not Complete		N/A	Funding	Culvert is maintained but requires extensive cleaning.
2008	2014	213-002	Generator for backup shelter 251 Undercliff Ave.	Edgewater Board of Education	Ongoing	Board of Ed. requesting and awaiting Borough to add funds.	N/A	lack of funding	Still relevant.
2008	2014	211-001	Complete cleanout of Fleischers Brook throughout the community.	Borough of Elmwood Park	Ongoing	The Borough is utilizing a Community Development Block Grant for repairs to the Kipp Avenue culvert over the Fleischers Brook, and the work includes some stream cleaning. This work is being completed at the Elmwood Park - Garfield municipal boundary. Construction is intended to start in late spring of 2014.	The Borough obtained a Community Development Block Grant for the repair of a culvert over Fleischers Brook, obtained the necessary NJDEP permits, and designed, advertised and awarded a contract to complete the work.	The Borough has requested supplemental funding from the County since the bid prices exceeded the available grant money and anticipated budget.	The action is not fully completed, as the proposed culvert repair is localized to a small area. The project remains relevant. The anticipated completion date should be revised.

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2011	2014	214-001	Additional drainage projects in Emerson	Borough of Emerson	Deferred due to funding	Clear retention pond and clear drainage entering and exiting pond to eliminate flooding to residential property and county roadway.	Nothing accomplished due to lack of funds.		This action is still relevant to the community.
2008	2014	216-001	Emergency Generators	Borough of Englewood Cliffs	Ongoing	Location: 143 Charlotte Place Englewood Cliffs Emergency Generator backup for School & Shelter	None		
2008	2014	216-002	Emergency Generators	Borough of Englewood Cliffs	Ongoing	Location 700 Floyd Street - North Cliffs School Emergency Generator backup for School 7 Shelter	none		
2008	2014	216-003	Emergency Generator for Pump Station: Lyncrest Road	Borough of Englewood Cliffs	Ongoing	Location: Lyncrest Road - Pump Station Emergency backup service for sanitary pump station.	None		
2008	2014	216-004	Emergency Generator for Pump Station - Jane drive	Borough of Englewood Cliffs	Ongoing	Location: Jane Drive - Pump Station Emergency backup service for sanitary pump station.	none		

2008 Hazard Mitigation Initiatives									
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2008	2014	216-005	Emergency Generator for Pump Station - Roberts Road	Borough of Englewood Cliffs	Ongoing	Location: Roberts Road - Pump Station Emergency backup service for sanitary pump station.	none		
2008	2014	216-006	Storm drainage - Palisade Avenue	Borough of Englewood Cliffs	Ongoing	Location: Palisade Avenue Strom Drainage - expansion	none		
2008	2013	215-003	Emergency stop: Affix each electric traffic controller intersection with fold down sign Est. \$6,500	City of Englewood	Ongoing	Over the past several years, stop signs were affixed to many of the traffic lights throughout the City. Since the implementation of the program, additional traffic control devices were installed and fold down stop signs have not been installed at these locations. Additionally, numerous stop signs that have been damaged over the past years need repair, and/or replacement.	During the aforementioned reporting period, stop signs were installed at numerous traffic light controlled intersections within the City of Englewood	Funding was the only obstacle that delayed the implementation of this project. Funding continues to be an issue for the purchase of new stop signs, and replacement parts for previously installed folding stop signs	This action is still relevant as additional traffic lights have been installed, and previously installed stop signs need repair and/or replacement.
2008	2013	215-004	Improve storm water drain (Severe storm flooding) at Forest Ave & Dean St. Florence Est. \$25,000	City of Englewood	Ongoing	The area surrounding the E Forest Ave. and S Dean St. intersection is regularly impacted by flooding from severe storms. To rectify this issue, improvements need to be made to the drainage, and connected sewer systems in the area.	During this reporting period, there were no actions completed associated with this project	Funding was the only obstacle that delayed the implementation of this project.	The aforementioned area continues to be impacted during flooding related instances, and subsequently, as no action has been taken, this action is still relevant.

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Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2008	2014	217-007	Passaic Valley Water Pump Station	Borough of Fair Lawn	Ongoing	Install emergency generator	Awaiting delivery as of 3/4/2014	delivery	N/A
2008	2014	217-002	Flood Gauges	Borough of Fair Lawn	Ongoing	Flood gauges for Passaic River with connectivity to the Borough website.	No actions taken	Waiting for funding from Hurricane Irene mitigation	N/A
2008	2014	217-004	Install Onyx	Borough of Fair Lawn	Ongoing	Install Onyx air operated pinch valves	No actions taken	Lack of funding	Date to be revised
2008	2014	217-005	Replace Close Pump Motor	Borough of Fair Lawn	Ongoing	Replace one close couples Fairbanks Morse Pump Motor with a new Fairbanks Morse Pump.	No actions taken	Lack of funding	Completion date to be revised
2008	2014	217-008	Plaza Road Sewer Pump Station	Borough of Fair Lawn	Ongoing	Install 3rd submersible pump and piping	No actions taken	Lack of funding	Completion date to be revised
2008	2014	217-009	South Siphon Sewer Pump Station	Borough of Fair Lawn	Ongoing	Install bypass pump	No actions taken	Lack of funding	Completion date to be revised
2008	2014	217-010	Saddle River Road Pump Station	Borough of Fair Lawn	Ongoing	Install bypass pump	No actions taken	Lack of funding	Completion date to be revised

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			Flood Study -	Fairview DPW	Ongoing	Flooding in the Bellman Creek area caused impassable roadway and flooding to the Borough's critical facility, Department of Public Works Yard.	Relocation of the main DPW facility to a non- flood area completed, ongoing dredging with approval from NJDEP. Dredging in conjunction with the BC Mosquito Control and the Twp of North Bergen.		Project is ongoing, should be
				Fairview OEM	Deferred	Study and pricing of an early warning audible alert system through out the Borough	Project deferred to a later date. Funding not available. Also after further analysis a different approach was		
2008	2014	219-001	Additional backup snow removal equipment	Fort Lee DPW	Ongoing	Currently working with our equipment and looking to upgrade to make removal of snow more efficient.	Current equipment was serviced and new equipment was looked into.	Ongoing snowstorm delayed the acquisition of new equipment.	This is ongoing and anticipated completion date will be within next 2 years
2008	2014	219-002&005	Backup generators for traffic lights, study conversion of power source	Fort Lee DPW and Police Department	Ongoing	Traffic light conversion to allow generator hookups, as well as additional generator.	A few of our traffic signals at major intersections have been fitted to accommodate generator hookup and operate during a power outage.	Not enough generators to equip all lights and conversion is costly.	Action is still relevant.
2008	2014	219-004	Establish CERT Team at borough high rises	Fort Lee OEM	Ongoing	Meet with high rise buildings and set up CERT teams in buildings.	Have met with some buildings to start training process.	Time and personnel to do all of the training. Also lack of volunteers from buildings.	Action is still relevant and hope to have couple done by the end of 2015.
2008	2014	219-006	Inspect all city owned storm sewers	Fort Lee DPW	Ongoing	DPW to inspect all city owned storm sewers and remove debris	Major (large) sewers were cleared and are operating at full capacity.	Delays were weather related.	Action is still relevant and crews are working as this report is being filed. Anticipate completion in 1 year

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Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2008	2014	220-003	Dam Warning/Monitoring System	Franklin Lakes OEM	Deferred due to lack of funds	Franklin Lakes maintains a class 1 dam. During Sandy water levels reached very high levels. It is proposed to install water level monitoring, intrusion altering and surveillance cameras. There is exposure to vandalism at the dam facility. Towns south of the	Nothing	No funding available	The need is still relevant
2008	2014	221-002	folding stop signs at signalized intersections	Garfield OEM	Ongoing	The goal was to mount folding stop signs at all signalized intersections to be available to open in a timely manner during power outages effecting traffic signals	All intersections and an inventory of signs needed were identified along with pole mounting locations.	this project has not started.	Yes. We are in the process of receiving quotes on the purchase of these foldable signs.
2008	2014	221-003	Snow emergency routes	Garfield OEM	Ongoing	The goal was to establish emergency no parking routes for snow emergencies. These routes would be decided by primary and secondary routes throughout the city.	A tentative list of primary and secondary roads have been identified. We are in the process of doing surveys at night to determine the most effective roads to be chosen.	Due to manpower issues, we have not been able to complete this project at this time. Our goal is to have a complete presentation package complete	Yes. We are in the process of completing a presentation with a budget for the Mayor & Council.
2010	2011	222-002	Rerouting water drainage from area of train overpass to mitigate 3-5 ft flooding	Borough of Glen Rock	Withdrawn	Intended to consult with Engineer to find appropriate way to reroute water during heavy rain where dip is. Roadway cannot handle drainage	Nothing	The roadway involved is Maple Ave south of Rock Rd and under the Bergenline overpass. This is a County road and therefore not a Borough repair	The action is no longer relevant on a Borough level

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2013	2014	222-003	Installing back up communication and paging equipment to mitigate delay in response when current system fails	Glen Rock Borough	Ongoing	To create duplicate communications and paging was upgraded with monetary agreement with Ridgewood to include multiple redundancies, new equipment, upgrade to FD, EMS, PD and OEM, fiber lines and upgrades to EOC	Project is due to be completed next month	Grant monies were applied for but project went on with capital funds from both towns. Slight delay while both towns obtained change in agreement from their councils	Still relevant with new completion date of April 2014
			Educate Public About All Hazards, Personal	Glen Rock OEM	Deferred	Want to hold town hall meetings and promote at 3 open events to teach general public all forms of mitigation			Action still relevant. Would
			Provide Emergency Information Devices to Each Home in Glen	Glen Rock OEM	Withdrawn	After further research, other technology was available to reach people even in a power outage	Nothing	The availability of a better	Action is not still relevant
Mar-14	Mar-15	223-013	Natural Hazard Mitigation Planning for residents through printed guides.	City of Hackensack	Ongoing	Continuing to obtain funding source's for educational guides for residents on hazard mitigation planning.	City website has information available. Educational guides have been purchased for distribution.	Residents not familiar with the city's website. Not enough funding for printed materials or for full distribution.	This will be an ongoing project.
Mar-14	Mar-15	223-004&005	Debris removal from city owned storm sewers	City of Hackensack	Ongoing	Continuing to obtain funding source's to maintain pump stations in order to prevent flooding in low lying areas.	Various storm sewers have been cleared of debris.	Equipment malfunctions. Manpower shortages	This will be an ongoing project.

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2010	2013	224-001	Emergency Generator for Shelter Harrington Park	Harrington Park Building Department	Deferred	The Borough of Harrington Park did not receive funding for this project. Therefore, this project has been re-submitted for a grant.	This project did not receive the necessary funding required to provide emergency power to the Harrington Park Public School which is the municipality's shelter for	Grant funding for this project was not obtained. Therefore this project has been deferred until such funding has been	The action is absolutely still relevant and remains un-revised. Upon receipt of grant funding, this project can be completed within a
8/1/2008	3/1/2014	226-006	Emergency Response Center at Municipal Center on Haworth Avenue	Borough of Haworth	Ongoing	The Borough still seeks to create this emergency response center.	No progress.	The Borough has not been able to dedicate the required funds.	The action is relevant. Anticipated cost should be revised to \$15,000.
8/1/2008	3/1/2014	226-005	Emergency Response Center at DPW Garage on Park Street	Borough of Haworth	Ongoing	The Borough still seeks to create this emergency response center.	No progress.	The Borough has not been able to dedicate the required funds.	The action is relevant. Anticipated cost should be revised to \$15,000.
8/1/2008	3/1/2014	226-004	Clear Debris from Stream at Municipal Center	Borough of Haworth	Ongoing	Debris build-up is an ongoing within this the stream (FEMA designation - Kips Brook). A permit from the NJDEP is required for all stream cleaning and de-snagging activities.	No progress. The Borough has not been able to dedicate the required funds.	The cost of NJDEP permitting and project implementation are the obstacles.	The action is relevant. The scope of the project should also be expanded to include the other two stream within the Borough - Charlie' Creek and Haworth Brook. Anticipated cost revised to
8/1/2008	3/1/2014	226-002	Replace Pipe Culvert at Prospect Avenue Stream Crossing	Borough of Haworth	Ongoing	The Borough may seek to apply for funding under the Pre-Disaster Mitigation program.	No progress on action.	Funding was not available for the action.	The action is still relevant. Estimated cost should be revised to \$45,000.

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8/1/2008	3/1/2014	226-001	Replace Pipe Culvert at Pleasant Avenue Stream Crossing	Borough of Haworth	Ongoing	The Borough may seek to apply for funding under the Pre-Disaster Mitigation program.	No progress on action.	Funding was not available for the action.	The action is still relevant. Estimated cost should be revised to \$45,000.
8/1/2008	3/1/2014	227-004	Keep debris clear from brooks to reduce backup	Borough of Hillsdale	Ongoing	The Borough last completed a complete cleaning and desnagging in 2005. Stream snags are a continuous problem.	No progress	Stream cleaning projects require costly permitting from the NJDEP. The Borough did not have the available funding to complete the project	Action is still relevant. All waterways in the Borough should be considered for this project.
8/1/2008	3/1/2014	227-003	Enlarge 3 bridges and culverts	Borough of Hillsdale	Ongoing	The Borough seeks to enlarge several bridges and culverts to reduce localized flooding and road closures.	No progress	The enlargement of bridges and/or culverts requires permitting from the NJDEP that is extensive and expensive. The Borough did not have the available funding to complete the projects.	Action is still relevant.
8/1/2008	3/1/2014	227-001	Acquire and clear destroyed	Borough of Hillsdale	Ongoing	The Borough may seek to apply for funding under future FEMA and NJ Blue Acres programs.	Several homes were purchased, the structures were demolished and the	The is a voluntary program. Funding was not available for the action for properties. Some property owners are	The action is still relevant.
2008	2014	229-006	Open drainage ditch between Leonia HS athletic field and railroad	Leonia BOE	Not completed	Open drainage ditch between Leonia High School Athletic field and railroad: 100 Christie Heights, Leonia, NJ 07605. Ditch serves all of Leonia North of Christie Heights	N/A	Funding	Yes, project is still relevant as field is still being flooded due to overflow of the ditch from Overpeck Creek

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2008	2014	230-001	Pump Stations on Hackensack River	Borough of Little Ferry	Ongoing	No new pump stations have been installed since 2008. The general term "pump stations" without locations renders this difficult to assess the action. Simply, nothing has been built.	Nothing.	Funding, land to build stations, rules & regulations	Yes. More specific pump station information will be presented
2008	2014	231-002	Maintenance and inspection of storm water catch basins and brooks.	Lodi OEM	Ongoing	Maintenance and inspection of all storm water catch basins and brooks. Remove debris as required. Throughout the Borough of Lodi.	Planning process is complete.	Lack of Municipal funding.	Yes. We need to complete this project to limit the instances of flooding.
2008	2014	231-004	Slope stabilization and retaining wall project	Lodi OEM	Ongoing	Slope stabilization and retaining walls will be installed on Harrison and Farnham Avenue slopes to prevent further erosion and mud slides.	No progress.	Determining a funding source.	This project needs to be completed to stop the erosion and mud slides that occur during heavy rain events.
2008	2014	231-003	Flood water current diverters	Lodi OEM	Ongoing	Install water diverters at Memorial Park.	Research has been done on the type of diverter to use	Funding not available.	Yes. The diverters will stop the flood waters from lifting up the artificial surface of the playing field.
2008	2014	231-001	Barricades for flood prone roadways	Lodi OEM	Partially complete	Barricades purchased. Storage facilities yet to be done.	Barricades purchased.	Lack of funding.	Hope to get funding to complete.

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2008	2014	232-002	Build up of embankment of Passaic River	Lyndhurst DPW/Contractual Engineer/ Contractor	Ongoing	The Township of Lyndhurst is still actively pursuing any avenue of funding and approval to build up the river banks along the Passaic River. Additionally, the Township is exploring ideas of installing a berm or make shift levy to prevent the river from cresting its banks and into the north west portion of the jurisdiction.	A Letter of Intent (LOI) was submitted during the HMGP application process in 2013.	The main obstacle is having an all hands on board with obtaining the approval of the New Jersey DEP as well as the County of Bergen due to the parks	This action should be considered relevant, and if completed would be the key component of eliminating flooding in areas of repetitive loss properties.
2008	2014	232-004	Change in slope from Route 3 east on to Rutherford Ave near Riverside Ave	Lyndhurst DPW/Contractual Engineer/ Contractor	Withdrawn	The off ramp from Route 3 east had been recently changed and reconstructed as a result of the ongoing Route 3 project being completed by the NJ State DOT.	This off ramp was completely changed and engineered as a result of the Route 3 project.	The ramp is located in the Borough of Rutherford which borders the Twp. of Lyndhurst. This project is under the control of NJDOT.	N/A
2008	2014	232-005	Clean out storm sewer system pipes (clay in area of Riverside & Forest Aves leading to Passaic River)	Lyndhurst DPW/Contractual Engineer/ Contractor	Ongoing	The sewer lines along this portion of Riverside Avenue have been replaced during infrastructure projects during this period. The sewer lines are continuously monitored and evaluated by the township D.P.W.	New sewer pipes in this area have been installed. Backflow preventers have been installed on outlets to the Passaic River	As always, funding is a key component. The township has had to field a majority of the funding to complete the work.	Addressing drainage outlets is always a key component of mitigating urban flooding. The project should be revised to an inspection at least yearly prior to peak flood season for potential blockages.

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6/1/2008	12/1/2013	233-007	Ramapo River removal of debris	Township of Mahwah	Ongoing	The Township continues with its annual program for removal of natural and man made debris and shoals in the Ramapo River.	The Township, with its own forces and with private contractors, has performed annual clearance work.	The natural and man made debris occurs every year. Sections cleared are limited due to funding.	The action is still relevant and ongoing. Work is performed annually.
6/1/2008	12/1/2013	233-009	Acquisition of repetitive loss properties on Catherine Ave and Alexandra Court	Township of Mahwah	Ongoing	The Township has identified 24 flood prone properties for acquisition and/or elevation. The Township has applied for funding but has not yet obtained funding.	Funding applications were submitted to FEMA and NJDEP for funding.	Funding applications were denied. Local funding is not available.	Project is still relevant. The Township is seeking alternate sources of funding.
6/1/2008	12/1/2013	233-004	Winters Pond Dam repair and upgrade	Township of Mahwah	Ongoing	Replacement of Winters Pond Dam. In the Masonicus Brook at Winters Pond.	The Township has completed the dredging of Winters Pond upstream and performed repairs on the dam.	Environmental permits must be obtained. Additional funding is required.	The action is still relevant. Major repair or replacement is still required.
6/1/2008	12/1/2013	233-005	Silver Creek Dam upgrade	Township of Mahwah	Ongoing	The dam at Silver Creek at Airmont/Airmount road should be renovated.	Minor repairs and maintenance was performed.	Environmental permits and funding	Action is still relevant. Completion date should be within four years.

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2008	2014	234-001	Emergency Power for Department of Public Works Facility	Maywood OEM	Ongoing	The DPW facility houses all of their vehicles, the salt shed for Saddle Brook and Maywood, and the borough mechanic. Of utmost importance is the need to provide power to effect repairs to vehicles during long duration storms where vehicles on the road require constant attention. Also, for shift work during these emergencies life safety systems become in operable with loss of power, negating the use of the building for sleeping quarters for personnel.	Generator size that would be needed was identified.	Lack of funding	Action is still relevant. Anticipated completion date is dependent on funding.
2010	2014	235-001	Clearing, widening, rebuilding stream wall through Ridgewood Water Control Center in MP	Ridgewood Water & Borough of Midland Park	Deferred	The OEM has been in contact with Ridgewood Water in regards to the issue of flooding due to the steam that runs through there property and contains a aquifer & well below that supplies drinking water to several municipalities that the water company serves. They state that the stream is clear of obstructions that may impeded the flow of water in a storm.	Ridgewood water is aware of the importance of maintaining a clear stream bed to eliminate or minimize the chance of future flooding	Long delays between correspondence.	yes this would be a on going project

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2008	2014	236-001	Pascack Brook - Gabion Walls	Borough of Montvale	Withdrawn	** PLEASE REMOVE FROM PLAN ** Initial project was to replace or reinforce gabion walls along private property to protect borough owned sanitary sewer lines. Project is being withdrawn. Plans in place to abandon / re-route sewer lines, eliminating threat of storm erosion.	No - project never initiated.		Borough wishes to remove project from the Mitigation Plan at this time.
2008	2014	236-006	Replacement of gabion wall system / perm. floodwall install	Borough of Montvale	Withdrawn	** PLEASE REMOVE FROM PLAN ** Initial project was to replace or reinforce gabion walls along private property to protect borough owned sanitary sewer lines. Project is being withdrawn. Plans in place to abandon / re-route sewer lines, eliminating threat of storm erosion.	Project never initiated. Hurricane Irene caused damage resulting in pipe exposure prompting alternative project idea of re-routing sewer line.		** PLEASE REMOVE FROM PLAN ** Borough does not wish to continue with this project at this time.
			Inspect and clean, as necessary, storm drainage system flowing into the river near Roosevelt Ave.	Borough of New Milford	Ongoing	Inspect and clean, as necessary, storm drainage system flowing into the river near Roosevelt Ave. and New Bridge Rd., New Milford	Debris removed from storm drains on a regular basis and as needed before major	N/A	N/A
2008	2014	238-043	Feeder brooks to be cleaned on a regular basis	Borough of New Milford	Ongoing	Feeder brooks to be cleaned on a regular basis	Feeder brooks regularly inspected	N/A	N/A

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2011	2014	238-035	Bank stabilization need to be implemented that are harmonious and coexist with the river	Borough of New Milford	Ongoing	Bank stabilization need to be implemented that are harmonious and coexist with the river		N/A	Completion date should be revised as the effort is continual.
2008	3/1/2014	239-002	Riverine & Stormwater Flooding - Inspection of Catch Basins and Storm	North Arlington DPW	Deferred (due to lack of funding)	The Borough-wide maintenance plan to install all catch basins and storm sewers and remove debris that may restrict flow is currently deferred due to lack of funding.	No update to report.	Current economic issues have restricted funding abilities.	Yes
2008	3/1/2014	239-003	Loss of Utilities - Upgrade to Generator at 214 Ridge Road	North Arlington DPW	Deferred (due to lack of funding)	The upgrade to the Police Emergency Management Generator at 214 Ridge Road to ensure operation during power failure is currently deferred due to lack of funding.	No update to report.	Current economic issues have restricted funding abilities.	Yes
2008	3/1/2014	239-004	Hazards - Installation of an Audio Warning System	North Arlington DPW	Ongoing	The Borough had planned to install a Borough-wide audio warning system. The Borough is currently using Nixle to see if this technology serves purpose.	The Borough is currently using Nixle to see if this technology serves purpose.	Current economic issues have restricted funding abilities.	Yes

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2008	3/1/2014	239-005	Landslides & Erosions - River Bank Stabilization	North Arlington DPW	Deferred (Due to lack of funding)	River bank stabilization along the length of the river including planting trees, shrubs, and other ecological means that co-exist with the river is currently deferred due to the lack of funding.	No update to report.	Current economic issues have restricted funding abilities.	Yes
2008	3/1/2014	239-006	Riverine & Stormwater Flooding - Upgrades to Pump Station at	North Arlington DPW	Deferred (Due to lack of funding)	The upgrades to the pumping station to remove rain water that floods homes on Geraldine Road is currently deferred due to the lack of funding	No update to report.	Current economic issues have restricted funding abilities.	Yes
2008	3/1/2014	239-007	Loss of Utilities - Installation of an Emergency Generator at DPW Building	North Arlington DPW	Ongoing	The Borough had planned to install an emergency generator at the DPW Building (located at 1 Disposal Road). The Borough has now purchased a portable generator to power fuel pumps and limited office lighting until more funding becomes available.	The Borough purchased a portable generator to power fuel pumps and limited office lighting until more funding becomes available	Current economic issues have restricted funding abilities.	Yes
2008	2014	NJMC-002	Restoration and Upgrade of West Riser Tide Gates	NJMC	Ongoing-should be completed by July 2014	Partial replacement of obsolete tide gates.	See above	Project was delayed due to the Superfund cleanup of the Ventron/Velsicol site. In addition, the NJMC and Bergen County had to reach an agreement regarding maintenance of the tide gate.	Still relevant

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2008	2014	NJMC-003	Restoration and Upgrade of the Peach Island Creek Tide Gates	NJDEP	Not complete	This tide gate is on privately owned land	N/A	The NJMC does not have jurisdiction as the tide gate is on privately owned land. Funding source is unknown.	Still relevant
2008	7/6/1905	242-001	Create more efficient means of controlling water level in Crystal lake	OAKLAND	Not complete/Deferred	Create more efficient means of controlling water level in Crystal lake	Project not initiated	Priorities re: mitigation were shifted	Project no longer relevant
2008	2014	243-001	Stream Clearance	Old Tappan OEM	Ongoing	Culvert type bridge should be replaced with a higher bridge to prevent the blockage of the existing stream. The existing bridge is damaged due to Hurricane Sandy. FEMA has provided funding for required repairs.	Periodic maintenance of stream debris helps reduce blockage of the culvert. The existing bridge is damaged and should be replaced.	The inability to fund the construction of a new bridge at this time is an obstacle and causes delays in solving this issue.	This action is still relevant and should be completed at some future date. Anticipated completion date should be revised
9/1/2013	3/1/2014	244-001	Flood Warning System	Oradell Borough	Deferred to year 2015	Unable to implement the project at this time due to lack of funding		Budget Constraints	Project is still relevant, the anticipated completion date is now revised to end of Year 2015
9/1/2013	3/1/2014	244-004	Rebuilding of Culverts	Oradell Borough	Ongoing	Existing culverts are maintained by the Department of Public Works on regular basis	Culverts are checked every month to minimize potential flooding issues	Budget Constraints	Project is still relevant, the anticipated completion date is now revised to the end of Year 2015

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9/1/2013	3/1/2014	244-005	Widening of Drainage Ditches, Small Streams	Oradell Borough	Withdrawn				
2008	2014	245-001	Dredging of outfalls to Overpeck Creek	Palisades Park DPW/NJDEP	Ongoing	Have to still work with NJDEP to have work started.	Need was identified and still in planning process.	NJDEP studies and obtaining engineer.	This action is still relevant. There is still flooding that occurs.
2008	2014	245-002	Install larger storm drain in various low lying area	Palisades Park DPW	Ongoing	Install larger storm drains in low lying areas.	Problematic areas have been identified and are currently being addressed	Manpower and delay in equipment availability.	This action is still relevant and should be completed in the next two years.
2008	4/1/2014	246-003	Installation of New Generator @ Fire Station 2	Borough of Paramus	In progress	Installation should be completed within a month	Planning, funding, and installation of a new generator	Funding, study for required power and wiring configurations	In progress. Completion anticipated within a month
2008	4/1/2014	246-004	Installation of water tight doors @ all sewer pump stations	Borough of Paramus	Deferred	Has not been acted upon at this time	No action taken	Funding. No action followed	Action may still be relevant. It will be reviewed and discussed
2008	4/1/2014	246-005	Installation of Flood Protection System @ Prospect St Sewer Pump Station	Borough of Paramus	Deferred	Has not been acted upon at this time	No action taken	Funding. No action followed	Action may still be relevant. It will be reviewed and discussed

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2008	4/1/2014	246-002	Installation of a new generator @ Paramus High School	Paramus Public Schools	Ongoing	Awaiting funding. Scheduled for this year	Funding and initial plan	Unknown	Action should begin this year
1/1/2013	3/1/2014	247-005	Acquisition of a mobile EOC	Park Ridge OEM	Ongoing	A suitable mobile EOC vehicle has not come up for takeover by OEM	No action taken during this reporting period	A suitable vehicle could not be found	action is still relevant.
1/1/2013	3/1/2014	247-001	Establish a CERT Team	Park Ridge OEM	Ongoing	The CERT tea was formed, but no trailer of clothing was purchased.	Team was formed and I was told that they received minimal training.	There has been a change in the OEM Coordinator, and I am trying to update the training that they received, and determine what they need	The action is still relevant, and there was no closing date listed
2008	2013	248-002	Comprehensive Mitigation Study to Protect Water System	Ramsey DPW Water Department	Ongoing	Certain security measures have been implemented. Locking devises installed. PD observance. Security cameras and tamper alarms are needed.	Certain security measures have been implemented. Locking devises installed. PD observance.	Funding	Yes- Security cameras and tamper alarms are needed.
2008	2013	248-003	Improve Drainage Church St. and Island Ave.	Ramsey DPW	Withdrawn	As per Ramsey Municipal Engineer this area does not have a flooding problem.	N/A	This project was not acted upon by Ramsey because there is no flooding problem present at this location.	

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
4/1/2010	3/1/2014	249-001	Wolf Creek Clean Out	Ridgefield DPW	Ongoing	When Wolf Creek is clear of debris and erosion 5 critical facilities and 3 repetitive lossproperties will reduce the possibility of loss and flood damage.	Ridgefield Environmental Commission recruited volunteers to walk and clean debris from Wolf Creek.	DPW is prohibited by NJDEP to clean Wolf Creek with heavy equipment.	This is a continuous task as long as the vegetation grows and the Creek flows.
2008	2014	250-002	Clean and dredge ditch. West side of Rt. 95 South	NJDOT (Ridgefield Park)	Not completed	Cleaning out drainage ditch to mitigate flooding.	N/A		Yes
2008	2014	250-003	Engineering review of Bergen Turnpike/Overpeck Creek	NJDOT (Ridgefield Park)	Not completed	Study of options to mitigate flooding on Bergen Turnpike.	N/A		
2008	2014	251-001	Study: Reconstruction of Village Hall. Construction of new police annex.	Ridgewood DPW, Engineering Division	Ongoing	Police Annex construction is complete but due to lack of funding, generator and backup battery system is under sized for buildings demand.	Study and construction of annex was complete.	Since the Village funded the project without any grants, we ran into short comings with the generator system to back up the building during power outages.	Completion should be extended until the generator issues are resolved. Pending funding to replace or sister a second generator.

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
			Relocate DPW to	River Edge OEM	75% completed - 8 items completed - 1 proposed	The items identified in the 2013 submission for the River Edge DPW office area and the emergency generator at the DPW are completed. The identified items for Fire Company 2 have not been funded in the 2014 budget.	office area reconstructed--a 40 foot trailer has been purchased and all office equipment has wheels or is movable and fits into the 40 foot trailer. During high risk	Funding and building plans were not ready prior to 2013 -- since that time the generator located at the DPW has been upgraded and placed on a concrete pad that is over 4 feet	OEM requested flood doors for DPW office and Fire bay doors at Fire Co #2. Request denied, updated request for 2015 Budget or as a 2015 Capital Project. Grant app to raise emergency generator at Fire Co #2 submitted to FEMA, to date no response. Fire Co #2 has funding
2008	2014	252-011	Install check valves in control water back up by stormwater pipe from Hackensack River	River Edge	Ongoing	Check valves need to be installed in floor drains	The Boro is currently in the process of getting an engineering proposal to complete this project.		Yes, still relevant
2008	2014	253-010	Ongoing maintenance plan to inspect the river for fallen trees etc. that block flow	River Vale DPW	deferred	It is unknown what agency is ultimately responsible for this task	nothing	It is unknown what agency is ultimately responsible for this	n/a
2008	2014	254-006	Back Flow Protection	Rochelle Park	Not completed	Perform a feasibility assessment against possible back flow prevention to an existing storm water system.	N/A	lack of funding	Not relevant remove from plan.
2008	2014	255-001	Emergency Power for Shelter/Firehouse	Rockleigh Borough	Not Complete	Still trying to free up funds		Cost	Yes, still on the "To-Do" list of possible projects

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2008	2014	255-002	Bank/Stream Cleanup at Sparkill Creek	Rockleigh Borough	Not Complete	Still trying to free up funds		Cost	No - Not currently on any future plans to complete.
2008	2014	255-003	Dam Improvement/Fixing 20 Rockleigh Road	Rockleigh Borough	Not Complete	It was determined that dam improvement would not significantly help flooding issue		Cost	No - Not currently on any future plans to complete.
2008	2014	255-004	Vegetative Management/Wild fire Management	Rockleigh Borough	Not Complete	It was determined that continued Vegetative Management would be cost prohibitive.		Cost	No - Not currently on any future plans to complete.
2008	2014	256-001	Reverse 911 System	Borough of Rutherford	ongoing/com plete	Reverse 911 System	Borough funded 911 System & implemented its use in 2013. Borough in process of changing vendors to a more comprehensive system	Funding	N/A
2008	2014	257-001	Saddle River Dredging	Township of Saddle Brook	on-going	The Township of Saddle Brook has been seeking assistance in dredging the Saddle River to eliminate the flooding in our township. At this time the project has not been funded.	N/A	The Township of Saddle Brook has not received any funding.	The Saddle River needs to be dredged to eliminate and mitigate flooding within the township.
2008	2014	257-004	Saddle River Dredging in Saddle Brook	Township of Saddle Brook	on-going	The Township of Saddle Brook has been seeking assistance in dredging the Saddle River to eliminate the flooding in our township. At this time the project has not been funded.	N/A	The Township of Saddle Brook has not received any funding.	The Saddle River needs to be dredged to eliminate and mitigate flooding within the township.

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2008	2014	257-002	Study the reconstruction of Railroad Ave Bridge so debris flow unobstructed	Township of Saddle Brook	on-going	The Township of Saddle Brook has been seeking assistance reconfigure the Railroad Ave Bridge so the debris flow unobstructed. At this time the project has not been funded.	N/A	The Township of Saddle Brook has not received any funding.	The Railroad Ave Bridge needs to be reconfigured so debris flow free from obstructions.
2008	2014	259-004	Elevation of Sewer Ejector Station	Township of South Hackensack	Not completed	Construct second level to pump station & relocate panels, generator and all electrical to new second level.	N/A	Had to be repaired several times due to flooding from 1999 to present.	Still relevant. Yes.
2008	2014	259-002	Dredge Ditches	Township of South Hackensack/ BC Mosquito Control	Not completed	Desnag ditches and remove stumps, trees, rock and other miscellaneous debris.	N/A	Lack of funding.	Keep in plan. Yes, once funding is obtained.
2008	2014	259-003	Marsellus Avenue Bridge Reconstruction	Bergen County Engineering (S. Hackensack)	Currently in design phase	New bridge without center pier.	Design contract awarded to Boswell Engineering.	N/A	Still relevant. Anticipated construction completion date 2016.

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2008	2014	260-001	Belle Avenue Drainage Improvements: Installation of Larger and Additional Storm Drains	Teaneck Engineering Department	Ongoing	Pipes under Cedar Lane following south to railroad are grossly undersized. Result is heavy flooding in residential areas. Item being considered under Capital Improvement Plan.	No additional action taken.	Budgetary constraints preclude completion of work.	Action is still relevant and completion date is to be determined.
2008	2014	260-002	Fabry Terrace Drainage Improvements: Installation of Larger and Additional Storm Drains	Teaneck Engineering Department	Ongoing	General storm drain pipes are undersized. Result is flooding in residential areas. Item being considered under Capital Improvement Plan.	No additional action taken.	Budgetary constraints preclude completion of work.	Action is still relevant and anticipated completion date is to be determined.
2008	2014	263-001	School Shelter Generator Project	Boro of Upper Saddle River	incomplete	Seeking funding	Planning	funding	yes
2008	2014	264-001	Rehabilitate Whites Pond Dam at Hopper Avenue	Borough of Waldwick	On-Going	To identify and make repairs to Whites Pond Dam	During this period, the Borough of Waldwick hired Stantec Consulting to assess the condition of the dam and what was needed to be done. This assessment	Financial	The project and need is still relevant and work should be done in the next years.
2008	2014	265-001	Emergency Power at 178 Maple Ave	Borough of Wallington	ongoing	A study of the electrical usage and needs has been completed; the next step is to determine a location.	An electrical study has been completed.	Determination of location for generator is ongoing.	Project still relevant and proceeding; completion date will be extended into 2015.

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2013	2014	266-001	Replacement of earth and dam	Washington Lake Association (Wash Twp)	Withdrawn	The Twp of Washington is no longer responsible for matters related to Washington Lake. Through legal actions the Washington Lake Association is now responsible for all matters related to the lake and its associated properties.	None		Project is no longer relevant for the Township of Washington. However, it is still relevant for the Washington Lake Association
2008	2014	Proposed after 2008 Plan	Project #3: Formalize the stream banks of floodway - K-Mart Shopping Center	Borough of Westwood	Deferred	Formalize the floodway, also known as the ditch behind the K- Mart Shopping Center and across from Harding Ave and Steuben Ave.	No action for this reporting period.	Funding	This proposed project is still relevant and should have the start/completion date revised or extended.
2008	2014	Proposed after 2008 Plan	Project #2: Reline and/or replace sewer line Borough wide	Borough of Westwood	Deferred	Reline and/or replace sewer lines within our municipal boundaries.	No action for this reporting period.	Funding	This proposed project is still relevant and should have the start/completion date revised or extended.
2008	2014	Proposed after 2008 Plan	Project #1: Flood Control - Pascack Brook and Musquapsink Brook	Borough of Westwood	Deferred	Desilting, desnagging and channel formalization of the Pascack Brook and the Musquapsink Brook to ensure that water stays in the brook and does not flood structures and property on the banks of each of these brooks	No action for this reporting period.	Funding	This proposed project is still relevant and should have the start/completion date revised or extended.

2008 Hazard Mitigation Initiatives									
Report start	Report end	2008 Mitigation Action	Action Title	Responsible Agency	Action Progress Status	Summary Description	What was accomplished?	Obstacles, Problems or Delays Encountered	If not completed is action still relevant?
2008	2014	Proposed after 2008 Plan	Project #4: Lightning strike notification alarm system	Borough of Westwood	Partially completed	First portion of the project, specifically the installation of a lightning strike notification system, has been completed. The second portion of the project, specifically the purchase of two (2) electronic message boards , has not been completed and should be considered deferred at this time.	Installation of the lightning strike notification alarm system was completed and fully funded by a five (5) entity co-operative effort which included three (3) municipalities and two (2) regional school districts. The total cost for this project was approximately \$74,000.00	None	The second portion of this project, the purchase of two (2) electronic message boards, should be considered deferred at this time. The Borough of Westwood still considers this portion of the project relevant.
2008	2014	269-001	Tree Removal, Pruning and Planting	Wood-Ridge OEM	Ongoing	Tree roots are monitored continuously, and as streets are repaved, trees are maintained and/or removed and new trees are planted.	Ongoing effort		Not a mitigation action, action completed.
2008	2014	270-001	Emergency Power (Larkin House Meeting room), 380 Godwin Ave	Twp. of Wyckoff Buildings and Grounds/OEM	Withdrawn	The Township of Wyckoff has decided to withdraw this project in order to concentrate on other emergency generator projects for critical facilities, EOC, and shelter facilities listed in EOP. All of these facilities have been listed in our original LOI in February 2013.		Funding	The action/project is not relevant at this time.

Appendix K: HAZUS Data

Riverine Flooding

Hazus-MH: Flood Event Report

Region Name: Bergen_Co_NJ

Flood Scenario: Bergen_Co

Print Date: Wednesday, November 02, 2011

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

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General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- New Jersey

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 234 square miles and contains 12,721 census blocks. The region contains over 331 thousand households and has a total population of 884,118 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 288,625 buildings in the region with a total building replacement value (excluding contents) of 91,039 million dollars (2006 dollars). Approximately 88.45% of the buildings (and 69.52% of the building value) are associated with residential housing.

General Building Stock

Hazus estimates that there are 288,625 buildings in the region which have an aggregate total replacement value of 91,039 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

**Table 1
Building Exposure by Occupancy Type for the Study Region**

Occupancy	Exposure (\$1000)	Percent of Total
Residential	63,288,904	69.5%
Commercial	19,224,778	21.1%
Industrial	5,224,945	5.7%
Agricultural	198,219	0.2%
Religion	1,256,834	1.4%
Government	535,757	0.6%
Education	1,309,969	1.4%
Total	91,039,406	100.00%

**Table 2
Building Exposure by Occupancy Type for the Scenario**

Occupancy	Exposure (\$1000)	Percent of Total
Residential	6,674,400	50.0%
Commercial	4,341,818	32.6%
Industrial	1,717,656	12.9%
Agricultural	27,663	0.2%
Religion	165,929	1.2%
Government	129,987	1.0%
Education	280,539	2.1%
Total	13,337,992	100.00%

Essential Facility Inventory

For essential facilities, there are 7 hospitals in the region with a total bed capacity of 3,468 beds. There are 437 schools, 103 fire stations, 73 police stations and 14 emergency operation center.

Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Bergen_Co_NJ
Scenario Name:	Bergen_Co
Return Period Analyzed:	10
Analysis Options Analyzed:	No What-Ifs

General Building Stock Damage

Hazus estimates that about 1,012 buildings will be at least moderately damaged. This is over 8% of the total number of buildings in the scenario. There are an estimated 194 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	20	35.09	36	63.16	0	0.00	0	0.00	1	1.75	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	5	100.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	1	4.55	21	95.45	0	0.00	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	2	0.21	146	15.27	141	14.75	239	25.00	234	24.48	194	20.29
Total	28		203		141		239		235		194	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	1	20.00	4	80.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	6	75.00	2	25.00
Masonry	6	7.41	18	22.22	15	18.52	11	13.58	18	22.22	13	16.05
Steel	17	34.69	32	65.31	0	0.00	0	0.00	0	0.00	0	0.00
Wood	1	0.11	142	16.10	123	13.95	228	25.85	210	23.81	178	20.18

Essential Facility Damage

Before the flood analyzed in this scenario, the region had 3,468 hospital beds available for use. On the day of the scenario flood event, the model estimates that 3,468 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	103	4	0	4
Hospitals	7	0	0	0
Police Stations	73	3	0	3
Schools	437	4	0	4

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 36,338 tons of debris will be generated. Of the total amount, Finishes comprises 62% of the total, Structure comprises 22% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 1,454 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 7,556 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 19,619 people (out of a total population of 884,118) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 847.29 million dollars, which represents 6.35 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 840.01 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 35.16% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<u>Building Loss</u>						
	Building	179.70	91.48	34.38	9.03	314.58
	Content	117.75	250.87	84.77	53.56	506.95
	Inventory	0.00	6.16	12.16	0.16	18.47
	Subtotal	297.44	348.51	131.31	62.75	840.01
<u>Business Interruption</u>						
	Income	0.02	1.80	0.01	0.14	1.97
	Relocation	0.28	0.50	0.02	0.07	0.88
	Rental Income	0.13	0.34	0.00	0.01	0.48
	Wage	0.07	1.63	0.02	2.25	3.97
	Subtotal	0.50	4.27	0.06	2.47	7.29
ALL	Total	297.94	352.78	131.37	65.21	847.29

Appendix A: County Listing for the Region

New Jersey
- Bergen

Appendix B: Regional Population and Building Value Data

	Building Value (thousands of dollars)			Total
	Population	Residential	Non-Residential	
New Jersey				
Bergen	884,118	63,288,904	27,750,502	91,039,406
Total	884,118	63,288,904	27,750,502	91,039,406
Total Study Region	884,118	63,288,904	27,750,502	91,039,406

Hazus-MH: Flood Event Report

Region Name: Bergen_Co_NJ

Flood Scenario: Bergen_Co

Print Date: Wednesday, November 02, 2011

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Note:

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Industrial	5,224,945	5.7%
Agricultural	198,219	0.2%
Religion	1,256,834	1.4%
Government	535,757	0.6%
Education	1,309,969	1.4%
Total	91,039,406	100.00%

**Table 2
Building Exposure by Occupancy Type for the Scenario**

Occupancy	Exposure (\$1000)	Percent of Total
Residential	6,674,400	50.0%
Commercial	4,341,818	32.6%
Industrial	1,717,656	12.9%
Agricultural	27,663	0.2%
Religion	165,929	1.2%
Government	129,987	1.0%
Education	280,539	2.1%
Total	13,337,992	100.00%

Essential Facility Inventory

For essential facilities, there are 7 hospitals in the region with a total bed capacity of 3,468 beds. There are 437 schools, 103 fire stations, 73 police stations and 14 emergency operation center.

Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Bergen_Co_NJ
Scenario Name:	Bergen_Co
Return Period Analyzed:	25
Analysis Options Analyzed:	No What-Ifs

General Building Stock Damage

Hazus estimates that about 1,339 buildings will be at least moderately damaged. This is over 10% of the total number of buildings in the scenario. There are an estimated 253 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	44	44.44	51	51.52	3	3.03	0	0.00	1	1.01	0	0.00
Education	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	4	66.67	2	33.33	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	20	45.45	23	52.27	1	2.27	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	1	0.08	156	12.39	196	15.57	323	25.66	330	26.21	253	20.10
Total	69		232		200		323		331		253	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	2	25.00	6	75.00	0	0.00	0	0.00	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	42	95.45	2	4.55
Masonry	13	10.92	25	21.01	26	21.85	20	16.81	16	13.45	19	15.97
Steel	41	50.00	39	47.56	2	2.44	0	0.00	0	0.00	0	0.00
Wood	4	0.36	154	13.74	163	14.54	301	26.85	269	24.00	230	20.52

Essential Facility Damage

Before the flood analyzed in this scenario, the region had 3,468 hospital beds available for use. On the day of the scenario flood event, the model estimates that 3,468 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	103	5	0	5
Hospitals	7	0	0	0
Police Stations	73	2	0	2
Schools	437	4	0	4

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 47,637 tons of debris will be generated. Of the total amount, Finishes comprises 60% of the total, Structure comprises 23% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 1,905 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 9,101 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 23,867 people (out of a total population of 884,118) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 1,095.21 million dollars, which represents 8.21 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 1,086.02 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 33.66% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<u>Building Loss</u>						
	Building	223.84	122.16	49.27	10.30	405.57
	Content	144.19	327.94	119.22	62.23	653.58
	Inventory	0.00	8.54	18.15	0.19	26.88
	Subtotal	368.03	458.64	186.63	72.72	1,086.02
<u>Business Interruption</u>						
	Income	0.03	2.40	0.01	0.16	2.60
	Relocation	0.33	0.66	0.04	0.08	1.11
	Rental Income	0.17	0.45	0.00	0.01	0.63
	Wage	0.11	2.20	0.03	2.52	4.85
	Subtotal	0.64	5.71	0.08	2.77	9.19
ALL	Total	368.67	464.35	186.71	75.48	1,095.21

Appendix A: County Listing for the Region

New Jersey
- Bergen

Appendix B: Regional Population and Building Value Data

	Building Value (thousands of dollars)			Total
	Population	Residential	Non-Residential	
New Jersey				
Bergen	884,118	63,288,904	27,750,502	91,039,406
Total	884,118	63,288,904	27,750,502	91,039,406
Total Study Region	884,118	63,288,904	27,750,502	91,039,406

Hazus-MH: Flood Event Report

Region Name: Bergen_Co_NJ

Flood Scenario: Bergen_Co

Print Date: Wednesday, November 02, 2011

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

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General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- New Jersey

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 234 square miles and contains 12,721 census blocks. The region contains over 331 thousand households and has a total population of 884,118 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 288,625 buildings in the region with a total building replacement value (excluding contents) of 91,039 million dollars (2006 dollars). Approximately 88.45% of the buildings (and 69.52% of the building value) are associated with residential housing.

General Building Stock

Hazus estimates that there are 288,625 buildings in the region which have an aggregate total replacement value of 91,039 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

**Table 1
Building Exposure by Occupancy Type for the Study Region**

Occupancy	Exposure (\$1000)	Percent of Total
Residential	63,288,904	69.5%
Commercial	19,224,778	21.1%
Industrial	5,224,945	5.7%
Agricultural	198,219	0.2%
Religion	1,256,834	1.4%
Government	535,757	0.6%
Education	1,309,969	1.4%
Total	91,039,406	100.00%

**Table 2
Building Exposure by Occupancy Type for the Scenario**

Occupancy	Exposure (\$1000)	Percent of Total
Residential	6,674,400	50.0%
Commercial	4,341,818	32.6%
Industrial	1,717,656	12.9%
Agricultural	27,663	0.2%
Religion	165,929	1.2%
Government	129,987	1.0%
Education	280,539	2.1%
Total	13,337,992	100.00%

Essential Facility Inventory

For essential facilities, there are 7 hospitals in the region with a total bed capacity of 3,468 beds. There are 437 schools, 103 fire stations, 73 police stations and 14 emergency operation center.

Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Bergen_Co_NJ
Scenario Name:	Bergen_Co
Return Period Analyzed:	50
Analysis Options Analyzed:	No What-Ifs

General Building Stock Damage

Hazus estimates that about 1,975 buildings will be at least moderately damaged. This is over 11% of the total number of buildings in the scenario. There are an estimated 336 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	54	45.38	61	51.26	3	2.52	0	0.00	0	0.00	1	0.84
Education	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	7	77.78	2	22.22	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	19	41.30	25	54.35	2	4.35	0	0.00	0	0.00	0	0.00
Religion	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	1	0.05	183	9.72	303	16.10	603	32.04	457	24.28	335	17.80
Total	82		271		308		603		457		336	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	2	18.18	6	54.55	2	18.18	1	9.09	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	42	95.45	2	4.55
Masonry	15	7.18	28	13.40	50	23.92	60	28.71	33	15.79	23	11.00
Steel	49	49.49	47	47.47	3	3.03	0	0.00	0	0.00	0	0.00
Wood	6	0.37	182	11.08	240	14.62	531	32.34	378	23.02	305	18.57

Essential Facility Damage

Before the flood analyzed in this scenario, the region had 3,468 hospital beds available for use. On the day of the scenario flood event, the model estimates that 3,468 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	103	9	0	7
Hospitals	7	0	0	0
Police Stations	73	4	0	4
Schools	437	5	0	5

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 65,364 tons of debris will be generated. Of the total amount, Finishes comprises 61% of the total, Structure comprises 22% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 2,615 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 10,618 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 28,300 people (out of a total population of 884,118) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 1,374.29 million dollars, which represents 10.30 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 1,363.70 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 36.84% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<u>Building Loss</u>						
	Building	310.82	148.11	56.15	12.39	527.47
	Content	194.66	400.57	135.96	74.08	805.27
	Inventory	0.00	10.28	20.45	0.23	30.96
	Subtotal	505.48	558.96	212.56	86.70	1,363.70
<u>Business Interruption</u>						
	Income	0.04	2.79	0.01	0.17	3.02
	Relocation	0.41	0.77	0.04	0.09	1.31
	Rental Income	0.21	0.52	0.00	0.01	0.75
	Wage	0.12	2.62	0.04	2.76	5.53
	Subtotal	0.78	6.70	0.09	3.03	10.60
ALL	Total	506.25	565.66	212.65	89.73	1,374.29

Appendix A: County Listing for the Region

New Jersey
- Bergen

Appendix B: Regional Population and Building Value Data

	Building Value (thousands of dollars)			Total
	Population	Residential	Non-Residential	
New Jersey				
Bergen	884,118	63,288,904	27,750,502	91,039,406
Total	884,118	63,288,904	27,750,502	91,039,406
Total Study Region	884,118	63,288,904	27,750,502	91,039,406

Hazus-MH: Flood Event Report

Region Name: Bergen_Co_NJ

Flood Scenario: Bergen_Co

Print Date: Wednesday, November 02, 2011

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

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General Description of the Region

Hazus is a regional multi-hazard loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- New Jersey

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 234 square miles and contains 12,721 census blocks. The region contains over 331 thousand households and has a total population of 884,118 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 288,625 buildings in the region with a total building replacement value (excluding contents) of 91,039 million dollars (2006 dollars). Approximately 88.45% of the buildings (and 69.52% of the building value) are associated with residential housing.

General Building Stock

Hazus estimates that there are 288,625 buildings in the region which have an aggregate total replacement value of 91,039 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

**Table 1
Building Exposure by Occupancy Type for the Study Region**

Occupancy	Exposure (\$1000)	Percent of Total
Residential	63,288,904	69.5%
Commercial	19,224,778	21.1%
Industrial	5,224,945	5.7%
Agricultural	198,219	0.2%
Religion	1,256,834	1.4%
Government	535,757	0.6%
Education	1,309,969	1.4%
Total	91,039,406	100.00%

**Table 2
Building Exposure by Occupancy Type for the Scenario**

Occupancy	Exposure (\$1000)	Percent of Total
Residential	6,674,400	50.0%
Commercial	4,341,818	32.6%
Industrial	1,717,656	12.9%
Agricultural	27,663	0.2%
Religion	165,929	1.2%
Government	129,987	1.0%
Education	280,539	2.1%
Total	13,337,992	100.00%

Essential Facility Inventory

For essential facilities, there are 7 hospitals in the region with a total bed capacity of 3,468 beds. There are 437 schools, 103 fire stations, 73 police stations and 14 emergency operation center.

Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Bergen_Co_NJ
Scenario Name:	Bergen_Co
Return Period Analyzed:	100
Analysis Options Analyzed:	No What-Ifs

General Building Stock Damage

Hazus estimates that about 2,251 buildings will be at least moderately damaged. This is over 10% of the total number of buildings in the scenario. There are an estimated 408 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	49	38.58	74	58.27	3	2.36	0	0.00	0	0.00	1	0.79
Education	2	100.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	7	70.00	3	30.00	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	21	41.18	26	50.98	4	7.84	0	0.00	0	0.00	0	0.00
Religion	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	1	0.05	191	8.93	302	14.11	672	31.40	567	26.50	407	19.02
Total	80		295		309		672		567		408	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	2	18.18	6	54.55	0	0.00	3	27.27	0	0.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	44	91.67	4	8.33
Masonry	15	5.95	30	11.90	47	18.65	76	30.16	53	21.03	31	12.30
Steel	47	44.34	53	50.00	4	3.77	2	1.89	0	0.00	0	0.00
Wood	5	0.27	191	10.28	249	13.40	580	31.22	465	25.03	368	19.81

Essential Facility Damage

Before the flood analyzed in this scenario, the region had 3,468 hospital beds available for use. On the day of the scenario flood event, the model estimates that 3,468 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	103	11	0	10
Hospitals	7	0	0	0
Police Stations	73	5	0	4
Schools	437	5	0	5

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 75,861 tons of debris will be generated. Of the total amount, Finishes comprises 60% of the total, Structure comprises 23% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 3,034 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 11,254 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 30,127 people (out of a total population of 884,118) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 1,559.05 million dollars, which represents 11.69 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 1,547.16 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 37.18% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<u>Building Loss</u>						
	Building	357.05	165.64	63.56	14.45	600.69
	Content	221.75	445.53	156.00	88.19	911.47
	Inventory	0.00	11.57	23.14	0.29	35.00
	Subtotal	578.80	622.73	242.70	102.93	1,547.16
<u>Business Interruption</u>						
	Income	0.04	3.17	0.01	0.21	3.43
	Relocation	0.45	0.86	0.04	0.11	1.45
	Rental Income	0.24	0.58	0.00	0.01	0.84
	Wage	0.13	2.96	0.04	3.05	6.17
	Subtotal	0.86	7.56	0.09	3.38	11.89
ALL	Total	579.65	630.30	242.80	106.31	1,559.05

Appendix A: County Listing for the Region

New Jersey
- Bergen

Appendix B: Regional Population and Building Value Data

	Building Value (thousands of dollars)			Total
	Population	Residential	Non-Residential	
New Jersey				
Bergen	884,118	63,288,904	27,750,502	91,039,406
Total	884,118	63,288,904	27,750,502	91,039,406
Total Study Region	884,118	63,288,904	27,750,502	91,039,406

Hazus-MH: Flood Event Report

Region Name: Bergen_Co_NJ

Flood Scenario: Bergen_Co

Print Date: Wednesday, November 02, 2011

Disclaimer:

Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social

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General Description of the Region

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The flood loss estimates provided in this report were based on a region that included 1 county(ies) from the following state(s):

- New Jersey

Note:

Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 234 square miles and contains 12,721 census blocks. The region contains over 331 thousand households and has a total population of 884,118 people (2000 Census Bureau data). The distribution of population by State and County for the study region is provided in Appendix B.

There are an estimated 288,625 buildings in the region with a total building replacement value (excluding contents) of 91,039 million dollars (2006 dollars). Approximately 88.45% of the buildings (and 69.52% of the building value) are associated with residential housing.

General Building Stock

Hazus estimates that there are 288,625 buildings in the region which have an aggregate total replacement value of 91,039 million (2006 dollars). Table 1 and Table 2 present the relative distribution of the value with respect to the general occupancies by Study Region and Scenario respectively. Appendix B provides a general distribution of the building value by State and County.

**Table 1
Building Exposure by Occupancy Type for the Study Region**

Occupancy	Exposure (\$1000)	Percent of Total
Residential	63,288,904	69.5%
Commercial	19,224,778	21.1%
Industrial	5,224,945	5.7%
Agricultural	198,219	0.2%
Religion	1,256,834	1.4%
Government	535,757	0.6%
Education	1,309,969	1.4%
Total	91,039,406	100.00%

**Table 2
Building Exposure by Occupancy Type for the Scenario**

Occupancy	Exposure (\$1000)	Percent of Total
Residential	6,674,400	50.0%
Commercial	4,341,818	32.6%
Industrial	1,717,656	12.9%
Agricultural	27,663	0.2%
Religion	165,929	1.2%
Government	129,987	1.0%
Education	280,539	2.1%
Total	13,337,992	100.00%

Essential Facility Inventory

For essential facilities, there are 7 hospitals in the region with a total bed capacity of 3,468 beds. There are 437 schools, 103 fire stations, 73 police stations and 14 emergency operation center.

Flood Scenario Parameters

Hazus used the following set of information to define the flood parameters for the flood loss estimate provided in this report.

Study Region Name:	Bergen_Co_NJ
Scenario Name:	Bergen_Co
Return Period Analyzed:	500
Analysis Options Analyzed:	No What-Ifs

General Building Stock Damage

Hazus estimates that about 3,228 buildings will be at least moderately damaged. This is over 13% of the total number of buildings in the scenario. There are an estimated 653 buildings that will be completely destroyed. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus Flood Technical Manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 summarizes the expected damage by general building type.

Table 3: Expected Building Damage by Occupancy

Occupancy	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Commercial	84	35.59	146	61.86	5	2.12	0	0.00	0	0.00	1	0.42
Education	2	100.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Government	10	62.50	6	37.50	0	0.00	0	0.00	0	0.00	0	0.00
Industrial	0	0.00	85	92.39	3	3.26	3	3.26	1	1.09	0	0.00
Religion	0	0.00	2	100.00	0	0.00	0	0.00	0	0.00	0	0.00
Residential	3	0.10	262	8.79	426	14.30	929	31.18	707	23.73	652	21.89
Total	99		501		434		932		708		653	

Table 4: Expected Building Damage by Building Type

Building Type	1-10		11-20		21-30		31-40		41-50		Substantially	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Concrete	2	8.00	16	64.00	1	4.00	3	12.00	3	12.00	0	0.00
ManufHousing	0	0.00	0	0.00	0	0.00	0	0.00	6	9.84	55	90.16
Masonry	15	4.24	64	18.08	63	17.80	92	25.99	72	20.34	48	13.56
Steel	63	31.82	124	62.63	6	3.03	4	2.02	1	0.51	0	0.00
Wood	7	0.27	272	10.37	358	13.65	824	31.41	619	23.60	543	20.70

Essential Facility Damage

Before the flood analyzed in this scenario, the region had 3,468 hospital beds available for use. On the day of the scenario flood event, the model estimates that 3,468 hospital beds are available in the region.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate	At Least Substantial	Loss of Use
Fire Stations	103	11	0	11
Hospitals	7	0	0	0
Police Stations	73	6	0	6
Schools	437	8	0	7

If this report displays all zeros or is blank, two possibilities can explain this.

- (1) None of your facilities were flooded. This can be checked by mapping the inventory data on the depth grid.
- (2) The analysis was not run. This can be tested by checking the run box on the Analysis Menu and seeing if a message box asks you to replace the existing results.

Induced Flood Damage

Debris Generation

Hazus estimates the amount of debris that will be generated by the flood. The model breaks debris into three general categories: 1) Finishes (dry wall, insulation, etc.), 2) Structural (wood, brick, etc.) and 3) Foundations (concrete slab, concrete block, rebar, etc.). This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 104,432 tons of debris will be generated. Of the total amount, Finishes comprises 58% of the total, Structure comprises 23% of the total. If the debris tonnage is converted into an estimated number of truckloads, it will require 4,177 truckloads (@25 tons/truck) to remove the debris generated by the flood.

Social Impact

Shelter Requirements

Hazus estimates the number of households that are expected to be displaced from their homes due to the flood and the associated potential evacuation. Hazus also estimates those displaced people that will require accommodations in temporary public shelters. The model estimates 13,227 households will be displaced due to the flood. Displacement includes households evacuated from within or very near to the inundated area. Of these, 35,768 people (out of a total population of 884,118) will seek temporary shelter in public shelters.

Economic Loss

The total economic loss estimated for the flood is 2,183.10 million dollars, which represents 16.37 % of the total replacement value of the scenario buildings.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the flood. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the flood.

The total building-related losses were 2,168.81 million dollars. 1% of the estimated losses were related to the business interruption of the region. The residential occupancies made up 35.69% of the total loss. Table 6 below provides a summary of the losses associated with the building damage.

Table 6: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Residential	Commercial	Industrial	Others	Total
<u>Building Loss</u>						
	Building	482.34	235.70	92.52	19.02	829.57
	Content	295.76	636.18	240.80	113.97	1,286.71
	Inventory	0.00	16.81	35.28	0.43	52.52
	Subtotal	778.10	888.68	368.60	133.43	2,168.81
<u>Business Interruption</u>						
	Income	0.05	3.79	0.01	0.26	4.11
	Relocation	0.57	1.01	0.05	0.14	1.76
	Rental Income	0.29	0.70	0.00	0.02	1.01
	Wage	0.15	3.50	0.04	3.71	7.40
	Subtotal	1.07	9.00	0.11	4.12	14.29
ALL	Total	779.17	897.68	368.70	137.55	2,183.10

Appendix A: County Listing for the Region

New Jersey
- Bergen

Appendix B: Regional Population and Building Value Data

	Building Value (thousands of dollars)			Total
	Population	Residential	Non-Residential	
New Jersey				
Bergen	884,118	63,288,904	27,750,502	91,039,406
Total	884,118	63,288,904	27,750,502	91,039,406
Total Study Region	884,118	63,288,904	27,750,502	91,039,406

Appendix L: Community Capabilities Spreadsheet

Jurisdiction	Plans	Plans	Plans	Ordinances	Ordinances	Programs	Programs	Programs	Studies/Reports	Studies/Reports	Staffing
Borough of Allendale, NJ	January, 2008. The plan addresses flooding hazards to critical infrastructure.	March, 2014. The plan addresses emergency power for critical infrastructure.	Increase flow of Allendale and Hohokus Brooks	Meets minimum NFIP standards, new development is adequately protected from flooding	Flood Plain Ordinance	Emergency power supply would support Fire Headquarters and the Borough Department of Public Works, both critical functions in a disaster.	By increasing the flow of the brooks along with the retention pond above them, the over flow that always results down stream will not impact the borough's middle school and the borough's DPW.	Emergency backup Generators			
Bergen County Utilities Authority	December 2013. Plan addresses flood and coastal storm hazards. Yes. Yes.		BCUA Flood Hazard Mitigation Plan						Flood Risk and Vulnerability Assessment	This was used to complete the above BCUA hazard mitigation plan.	ARCADIS assists the BCUA with the preparation of the hazard mitigation approach and projects. ARCADIS staff is trained on hazards and mitigation. ARCADIS has developed a working relationship with the State and FEMA representatives for recovery and mitigation for Superstorm Sandy.
Borough of Bergenfield	Evaluated annually to address high priority projects and budget capital funds accordingly.	The plan will be evaluated and updated.	Capital Improvements Plan	An ordinance that meets the minimum NFIP standards is to be evaluated and updated.	Floodplain Ordinance		DPW cleans and maintains existing storm sewers as necessary.				Full time. Maintains existing infrastructure. Full time. Enforces regulations.
Borough of Bogota	Repaving of local roads (Elm Avenue) and including rebuilding of roads and street sewer catch basins as needed.		2013-2014 Capital Improvements	Cleaning after winter season of debris out of operational street storm sewer drains.	Annual Policy		On going as required after street sewer basins are cleaned of silt and debris, repairs to grates or brick lining repairs or replacement.			No active studies or reports at this time.	No personnel assigned at this time all activities monitored by Dept. of Public Works Superintendent
Carlstadt, NJ	Identify ways to mitigate flood prone zones.	Dredging and cleanup of creeks to prevent additional flooding into the industrial areas.		Flood plain ordinances are in place.			properly addressed in order to prevent future flooding, such as the one experienced during Superstorm Andy			No studies have been done.	No staff has been assigned to this program.
Cliffside Park	Completed in 2006. Currently being updated, will include goals and objectives related to land use and mitigation	Plan addresses hazards	Master Plan Re-Examination	developed to reduce the impacts of hazards are adequately enforced			Information is provided to residents and area businesses with regard to mitigation efforts and resiliency				Part time staff, trained in mitigation
Borough of Closter	Identifies projects that will mitigate some flooding issues within the borough. . The plan also identifies buildings needing generator power, as electrical outages.	A plan will be developed in 2014 to help with electrical outages. The Borough is 98% developed with no build able lands with flood planes.	Capital Improvement Plan	Ordinances is being developed involving use of emergency generators.	Ordinacne	The OEM office continual throughout the year informs the public about disaster planning through mailings, newspaper articles, social media and use of a reverse phone calling system.	The Department of Public Works has a regular maintenance program for storm sewer and stream cleaning within NJ DEP rules and when manpower allows	Public Outreach		No reports have been commissioned	Staffing for OEM office is part-time. The borough has a full time code endorsement officer with part-time code officers in building department. The OEM department has had training in mitigation and some of the code officers. There is good coordination with agencies, as the borough is small, all employees have direct contact with each other during a weekly bases and have regular schedule LEPC Meetings.
Cresskill, NJ	2005. Plan addresses flooding hazards from Tenakill Brook. Addresses limits on future development w/r/t runoff and preventative measures.		Stormwater Mangement Plan								Staffing is adequate to enforce regulations. Coordination between staff and agencies is effective. Full time staff covers OEM
Demarest	This plan addresses hazards and will include mitigation projects, can be used to implement mitigation actions		Stromwater Management			Mitigation project	Mitigation project	Replacement of pipe at Tenakill Brook	Scope/camera exam of stormwater pipes	Used to assess risk	Mitigation staff (DPD) is trained in hazards and mitigation Coordination in northern valley is very effectiv. Full time staff

Jurisdiction	Plans	Plans	Plans	Ordinances	Ordinances	Programs	Programs	Programs	Studies/Reports	Studies/Reports	Staffing
Borough of Dumont	There is no present plan in place. Developing a plan would be a good idea.	Present plan is approved by OEM and NJSP should have a section related to mitigation.	Hazard Mitigation Plan	no ordinance exists. This may something to consider.	Floodplain ordinance	A public awareness program would need to be presented to residents so that they may provide us with points of contact so that we may enter information in a data base and use this to alert residents when there is a hazardous condition.	maintaining clear brooks, feeder water ways and run off culverts allows for a properly operating storm water management system.	Information and registration for alerting systems	no known study	feedback has been received related to residents not receiving notifications during major events. An alerting system that would allow notifications to be broadcast over phones, internet, and e-mail addresses this would allow us to insure all residents receive emergency alerting.	Communication staff (full time) is fully trained and certified to make emergency notifications. DPW employees (full time) have basic hazard awareness training and understand flood water management.
Englewood Cliffs	Most recent version completed in 2012; addresses all hazards in the Borough. EOP is updated every five years	No mitigation related projects currently planned; CIP was used to implement upgrade of storm sewer lines in Castle Drive neighborhood	Emergency Operations Plan				Localized flooding is a concern if systems are not kept clear of debris				Deputy Police Chief serves as OEM Coordinator for EC. He is trained on hazards and mitigation. Coordination between agencies and staff is effective.
Borough of Elmwood Park	- The plan was amended through February 21, 2013 and addresses hazards in the Borough.- The plan identifies projects that are included in the mitigation strategy.		Hazard Mitigation Plan	The code is adequately enforced and protects new and existing development from damage due to storm events. The ordinance is an effective measure for reduction hazard impacts, when accounted for as part of the overall Borough hazard mitigation plan.	Stormwater Control Ordinance		Maintenance of the municipal storm sewer system minimizes potential damage caused by severe rain events.		Market Street Pump Station Study	The Borough has completed an assessment of the necessary upgrades to the Market Street Pump Station (Pump Station #6). The study identifies the deficiencies of the pump station and provides recommendations to mitigate risk.	The Department of Public Works Director is also the Borough OEM director, and is a full-time employee. The DPW staff is adequate to complete mitigation work. The Borough Consulting Engineering firm is part-time and assists the Borough in planning and enforcement. The Building Department is part-time and assists in enforcement.
EAST RUTHERFORD	Plan includes mitigation efforts, specifically generator installations	Plan guides and determines responsibility based on hazard assessment	2013-14 Capital Plan	Code is enforced to ensure appropriate building methods are followed.	Uniform Construction Code/Fire Code		Program is maintained to protect against flooding and protect infrastructure		N/A		Staff is trained dependent on function and department. Staff works collectively to determine correct hazard mitigation strategy and meets to discuss potential hazards and vulnerability.Full time OEM, Police, Public Works, Fire, and Council partake in mitigation and response planning
Borough of Edgewater	Marina dredging, culvert clean out, River Road/ Old River Road. Identify the culvert clean out.	Storm Water Management 880 River Road.	CIP	Requirements for construction flood hazard areas.	Zoning		Reduce maintenance to help mitigate flooding.		Emergency Survey	Survey of flood water tight Boro structures.	Full Time OEM Coordinator
Borough of Emerson	March 2014, Yes it addresses Hazard plan. Yes, it is both part of mitigation strategy and can implement other actions.	2010. Yes, the plan addresses hazards and is part of mitigation strategy and action.	Back up Power (Generators)		None present	Would keep residents from having to deal with flooding and would keep a major county road from being closed.	Will allow residents and students keep normal routines while recovering from disaster. As well as keep the Fire Dept. up and running during a storm.	Drainage Project			

Jurisdiction	Plans	Plans	Plans	Ordinances	Ordinances	Programs	Programs	Programs	Studies/Reports	Studies/Reports	Staffing
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Englewood, NJ	The City of Englewood updates the listing of potential capital improvement projects yearly for current, and future budgeting cycles, often including projects associated with mitigation.	The 2014 City of Englewood Master Plan includes documentation on land usage, zoning, redevelopment, facilities, open space, sustainability, and other topics. this document includes mitigation related information, and provides policies and key recommendations for development strategies, eco incentives, and land use controls. The 2014 version is an update of a version issued in 2009, and presents an accurate snapshot of the City at this moment in time, in the past, and provides projections for the future.	Capital Improvement Plan	Englewood maintains ordinances that support the Plans, and which aim to promote land use, address env hazards, and control general mitigation matters. Ordinances are enforced by a Police Dept, Fire Dept, Health Dept, Building Dept, and DPW. Ordinances are an effective measure for reducing impacts; the City also relies on personnel from all disciplines for input, advice, and provide notice on any hazard related issues. The ordinances of the City are adequately administered, and enforced. Add'l personnel, and training for current personnel would aid in future enforcement, and administration.	General Ordinances/Code of the City of Englewood	The City of Englewood Health Department offers community outreach programs to assist residents and businesses in disaster, preparedness and mitigation activities. A prime partner of the City of Englewood OEM, the Health Department provides fliers and disseminates other hand out items at key times throughout the year to those in attendance at "booths" maintained during health fairs, specially weeks and through various other programs and presentations.	Englewood Police Dept OEM is coordinating group for disaster response and resiliency for the community. Heavily relying on it's govt sector and private sector partners, OEM plans, practices and organizes activities associated with both aforementioned fields. Add'l personnel, training, resources and \$ could assist this department in becoming more effective and efficient in both coord. and assisting with mit and resiliency projects.	Health Department	Environmental Resources Inventory	The Environmental Resource Inventory is a compilation of text and visual info about the natural resource characteristics and env features of Englewood. 2010 Env Resource Inventory is an unbiased report and provides baseline documentation for measuring and evaluating resource protection issues. Identifying significant environmental resources is the first step in their protection and preservation, thus the Environmental Resource Inventory is an important tool.	Personnel from across a variety of depts are involved in mit related hazard identification, rectification and associated enforcement of ordinances, codes, laws and regulations. The City has both full time and part time officials and relies on outside private vendors for assist. and guidance. Add'l personnel and training for current personnel could assist in more effective and efficient enforcement and identification of mitigation related matter in the future in Englewood. Coordination amongst agencies and staff from both the public and private sector is effective with a variety of committees, ad hoc groups and personnel meeting regularly to discuss mitigation associated topics.
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Borough of Fair Lawn	To purchase and put property back to open space		Open Space and Recreation Plan	All departments enforce policies and ordinances to reduce hazard impacts			Information is disseminated to residents/businesses related to mit and disaster resilience		N/A		Stipend position and volunteers
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Fairview	New plan expected to be completed in June 2014. Addresses flooding in Bellman creek area.		Master Plan	Expected to be passed in April 2014. Implements flooding measures in impact areas. It will be enforced accordingly by building inspectors.	Flood Ordinance						
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Fort Lee, NJ	2008 plan that addresses, identifies and mitigates the hazards for Fort Lee and is used to implement mitigation projects.	2010 plan that addresses and mitigates hazards and actions	2008 Hazard Mitigation Plan	Policies are adequately enforced and effectively reduce hazard impacts.	Municipal Policies and Ordinances		Information on mitigation and resilience is handed out to the public		N/A		2 full time employees - 1 part time coordinator. Staff attends training on hazard mitigation and assists with coordination of resources between agencies and has proven effective
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Franklin Lakes, NJ	2013 Plan addresses need for large scale sheltering	Periodic Local Emergency Planning Committee	Emergency Disaster Plan				Having a fully functional shelter will mitigate possible injury/exposure to residents unable to reach shelters outside of area			Class 1 Dam Review	Part time 100 trained volunteers Full time
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Borough of Glen Rock	Identifies need for replacement of larger monetary items. Glen Rock Borough #1 was added to 2014 Capital request for funding	Identifies areas of potential flooding as well as areas dedicated to green growth and open area	Capital Improvement Plan	Meets minimum NFIP standards	Floodplain Ordinance	Teach fire safety and the use of 911 each year	Flyers out about disasters, flyers out about how to protect yourself and home	Visits to children classes	None at this time		Trained in Hazard mitigation, works with other agencies on enforcement and continues to take yearly classes to keep updated. Trained in Hazard mitigation, works with other agencies on enforcement and continues to take yearly classes to keep updated
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Borough of Ho-Ho-Kus	2013yesyesyes			yes yesyes			All coordinated with the Office of Emergency Managementyes			The Borough Master Plan has various studies and reports	yes
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Jurisdiction	Plans	Plans	Plans	Ordinances	Ordinances	Programs	Programs	Programs	Studies/Reports	Studies/Reports	Staffing
Borough of Hasbrouck Heights				Building codes and local ordinances are adequately enforced							
Borough of Harrington Park	Borough is awaiting FEMA money to coordinate safe shelters at the Municipal Center and the school as well as the DPW			Stormwater management plans are upheld by the DPW and Borough Engineers when required for construction. Currently under the approval of Council is the steep slope and riparian water ways ordinances.	Flood Damage Prevention		Borough has in order ongoing preventative measures to protect against natural disasters. Streets are kept clean, waterways cleared of debris, and constant notification to utilities about grounds maintenance of their properties				Full time staff as well as part time inspectors and volunteers. All authorized personnel are available during pending hazards. Police are trained by United Water to address reservoir issues and safety. Also included in this training are the DPW, Fire Dept and Ambulance Corps
City of Hackensack	Identifies Riser's Ditch and pond as an area that needs enlargements to reduce local flooding. New Emergency operations Center planned.		Capital Improvements	Being developed to meet the minimum NFIP standards	Ordinances	Educational materials provided to residents and attendees.	Maintenance of storm sewers prevents flooding problems.	Various City Fairs	Riser's Ditch & Pond	The report provides data to mitigate flooding in this area.	Communication between local agencies is effective in meeting our flood plan goals.
Borough of Haworth	One of the primary purposes is to "To secure safety from fire, flood, panic and other natural and man-made disasters."	Can be used to identify culvert replacements and other flooding mitigation actions.	Sustainable Master Plan (2012)	Dwelling alterations and new construction require the installation of on-site stormwater management systems. Strictly enforced.	Stormwater Management		Catch basins are routinely checked/cleaned by the DPW to help prevent flooding and keep streams clean/clear.		Rain-Derived Infiltration and Inflow (BCUA)	Ongoing - to help identify and reduce the entrance of rainwater in the sewage system, causing over-taxation and possible contamination.	Part -time, trained on hazards and mitigation.
Borough of Hillsdale	The Plan recommends the Borough seeks funding from the NJ Blue Acres program and FEMA to acquire properties highly prone to flooding.	The Borough identifies and includes infrastructure improvements that reduce localized flooding.	Master Plan Re-Examination Report(2010)	Dwelling alterations and new construction require the installation of on-site stormwater management systems. Construction in the floodplain is strictly monitored for requirements with NJDEP regulations.	Stormwater Management	Information about disaster preparedness and proper construction practices within the floodplain can be disseminated.	Catch basins are routinely checked/cleaned by the DPW to help prevent flooding and keep streams clean/clear.	Borough Events	Flood Study	The Borough could undergo a flood study to isolate specific flooding causes and find alternative mitigation methods.	Part -time OEM Coordinator, trained on hazards and mitigation.
Borough of Little Ferry	The Borough Administrator and the consultant working on the Post Sandy Planning Assistance Grant have not been provided this by local OEM.		Local OEM Plan						Local OEM Plan	The Borough Administrator and the consultant working on the Post Sandy Planning Assistance Grant have not been provided this by local OEM.	
Borough of Leonia	The 2014 plan is addressing the loss of power at crucial facilities such as the Borough Hall and the community Recreation Center which will serve as a potential shelter as needed.		Emergency Generators	The municipality effectively and strictly enforces all municipal and state codes including the NJ UCC and UFC.			N/A			N/A	The staffing of all OEM members and code enforcement officials work part time. At this time the staffing does seem adequate. The staff of the Borough has received training and the various agencies are coordinated in code enforcement and OEM responsibilities.

Jurisdiction	Plans	Plans	Plans	Ordinances	Ordinances	Programs	Programs	Programs	Studies/Reports	Studies/Reports	Staffing
Lodi	Identifies methods to protect traffic from entering flood prone areas. A means to store materials at the flood prone locations.	Identifies a program to prevent urban flooding.	Barricades for flood prone roadways	The DPW has permanently assigned a person to ensure compliance with the regulations	NJ State Storm Water Regulations	Barricades have been purchased and used to prevent motorists from entering flooded roadways during rain events.	Proper maintenance of storm drainage systems prevents flooding problems.Scheduling of regular cleaning of debris before heavy rains prevents urban flooding.	Barricades for flood prone roadways	N/A		This is a small part of the Borough's Construction Official's duties. There is not much progress in this area. He has received no formal training for this title.
Lodi	Identifies a means to direct flood waters away from an artificial grass field.	Identifies a means to stabilize steep slopes in a residential community.A retaining wall system will be placed at the bottom of the slopes.	Flood water current diverters	The ordinance places regulations into effect to protect against steep slope erosion.	Sleep Slope Ordinance		The Inspection Department inspects Slopes as part of the permit process.		N/A		
Township of Lyndhurst	The township is weeks away from completing the elevation and instillation of a pump station located in the flood prone north western section of the township. Aside from elevation, two 125 horse power pumps and a back up generator have been installed. This project, funded through the New Jersey Environmental Infrastructure Trust, began three years ago, approval is in hand and the project has been awarded.	The Twp. of Lyndhurst successfully negotiated a \$150,000 grant from the Co-operating Parties Group (CPG), a consortium of businesses formerly operating at the River. This money will be applied toward the installation of backflow preventers designed to keep river water from siphoning back into the Township at unusually high tides	Capital Improvement Plan	The ordinance meets the minimum NFIP standards, and new development is adequately protected from flooding. Enforcement for existing development is an issue because of lack of trained staff.	Floodplain ordinance	As of February 28, 2014 the township's first Emergency Preparedness Guidebook was released to residents in digital format. This comprehensive guidebook addresses topics on what to do during all types of disasters.	Proper maintenance of all storm drainage systems in the township annually will decrease the risk of flooding. DPW will clear all catch basins and drainage pipes of debris prior to peak hurricane and summer rain season.	Annual Emergency Preparedness Guidebook issued by Lyndhurst OEM	Report to the Governor:Recommendations of the Passaic River Basin Flood Advisory Commission	The report addresses 10, 50, and 100 year flood elevations for the Passaic River. It addresses mitigation strategies to decrease the potential of flooding such as river walls and elevation of homes.	The township building official and building department is full time while the planning board is volunteer. All parties have minimum training of Hazard Mitigation, and could enroll in online hazard mitigation training classes. Coordination between both is effective.
Midland Park	stream flow restrictions due to vegetative overgrowth	Ridgewood Water understands the importance of stream bed maintenance	235-001	meets NFIP standards and new development is protected	floodplain ordinance	from any debris	Ridgewood Water Will Continue to maintain the stream and keep it clear		235-001	Ridgewood water states that post IRENE that the stream bed has been cleared and is free from any debris that may impede adequate flow	Part time and no hazard mitigation experience
Township of Mahwah	2013 Adoption. Environmentally sensitive areas in the Preservation and Planning areas have been identified. Development is restricted to prevent or reduce flooding.	2013 update to prevent or reduce flooding.	Highlands Master Plan and Environmental Resource Inventory	Current floodplain, NFIP, standards are implemented and enforced by the municipal planning board and the by the Township Engineer	Storm water and floodplain ordinance	The two township newsletter contain information on stormwater activities and property maintenance.	All stormwater facilities are inspected and maintained at least annually and before all major predicted storms.	Township Newsletter	Cragmere Drainage Study	The Comprehensive area report identifies regional stormwater protection facilities and proposed improvements. Two of the five projects have been completed. The report indicates areas which are suitable for development and the areas for preservation and non development.	The Engineer coordinates storm water activities with a full staff of specialists. The DPW director coordinates all maintenance activities.
Maywood	Updated bi-annually, focusses on overall preparedness, response, and recovery of an emergency effecting the Borough.	By pre-planning the most hazardous/critical facilities in town, emergency services has a playbook in advance of any response. These pre-plans also help identify potential gaps in safety measures for the facilities. These pre-plans are living documents and updated routinely throughout the year.	Emergency Operations Plan	Since the Nor'easter of April 2007, the Borough has worked aggressively with the borough's engineer and dpw to identify the reason for pump stations being overwhelmed. Findings showed an alarming amount of properties having sump pump drains tied into the municipal sewer system. Ordinance was passed making this practice illegal and that all sump pumps must be drained to the street	Sump Pump Ordinance		Working through Maywood OEM, CERT has helped provide awareness to regular citizens on the value of emergency management. These volunteers have provided feedback on potential hazards in the community and conducted outreach to their neighbors on the value of emergency preparedness.				Staffing of OEM, EMS and Fire Department is volunteer. Staffing of Police and Borough Officials (building inspector, engineer) is full time. Staffing is adequate for preparedness activities, but is often stretched to it's limits during response and recovery.
Borough of Montvale NJ 0236	When our Waste Water Consultant submits project for Capital Improvement funds, these project can be routed directly to UHMA, if applicable.	During the annual LEPC review, hazards are discussed within the jurisdiction and could be considered for UHMA application at that time.	Capital Improvement Plan	Chapter 128 of the Borough Code is reviewed, consulted and followed prior to any new construction is authorized.	Zoning Ordinances	OEM / FEMA educational flyers are available at the Borough Hall and Internet links are provided on the borough website.	Police & DPW are briefed annually on Bergen County's Bridge Scour Critical policies. Both departments monitor both applicable bridges in the boro during heavy flooding.	OEM Disaster Education			The borough has a mix of full and part time employees who handle zoning and building regulation establishment, as well as enforcement. They are all well trained and adequately staffed. The borough hires an outside firm as our Waste Water Engineer consultant.

Jurisdiction	Plans	Plans	Plans	Ordinances	Ordinances	Programs	Programs	Programs	Studies/Reports	Studies/Reports	Staffing
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Borough of Moonachie, Bergen County, NJ	We are in the process of applying for CRS designation.			We are currently reviewing ordinances and policies for resiliency issues						We are working on Storm Drain issues with the County. We have participated in Rebuild by Design. It is going to mitigate the risk at the mobile home communities. The Stormwater outfall assesment will help mitigate backflow risk.	The county OEM is very supportive of the communities. We have had a lot of interaction with the NJMC as well. There is no one staff member dedicated to resiliency issues. Training is always necessary.
Borough of North Arlington - Sheet 1 of 2	Currently 2008 plan being updated. Provides for a comprehensive assessment of municipal issues. Identifies critical facilities, repetitive damage areas, mitigation.		Hazard Mitigation Plan	Enforced by Construction Department and applies to approvals issued by Planning & Zoning Boards. Overall intent is to reduce flood damage potential through education and development and construction regulations.	Ordinance Chapter 173Flood Damage Prevention		Those who sign up for the classes are taught to handle disaster preparedness, disaster medical operations, fire suppression, light search and rescue, fire suppression and disaster psychology.				Consulting Engineer and Certified Floodplain ManagerFull time, former fire chief
				The upgrade to the Police Emergency Management Generator at 214 Ridge Road to ensure operation during power failure is currently deferred due to lack of funding.	Loss of Utilities - Upgrade to Generator at 214 Ridge Road (239-003)	201-991-6060				Stephen Lo locono	Deferred (due to lack of funding)
	Identifies areas where stream bank improvements and drainage issues could ease local flooding problems.	Identifies areas where runoff and tidal flow affects flooding in residential areas.	Flood Mitigation Plan	Regulations to promote protection of life and property, minimize impact on the municipal budget, minimize the need for rescue operations	Flood Damage Prevention Ordinance		Regular inspection and cleaning of drain conditions in flood prone areas especially in advent of heavy rains or snow melt off.		Boswell Engineering	Maps of flood possibilities with regard to 5-100 yr. storm events.	Fully qualified for hazard mitigation. Available on an on call basis. Coordinates with Borough Administrator's Office and DPW. Part Time OEM Co Or Staffing adequate presently Not trained in hazard mitigation
Borough of Northvale			N/A		Yes				N/A		
NORWOOD, NEW JERSEY		Identifies the flood zones in the Borough of Norwood	Proposed Flood Mitigation	The plan and ordinances prevent development in flood zones.	Master Plan maps & ordinance.		The DPW has policy governing the scheduling of cleaning and maintaining all storm drains in Norwood.				
Oakland	In the process of completing CRS program.	ongoing and identifying mitigation actions H.		Have identified issues within the Borough.	River Issues		Maintaining storm drain system.		Trout unlimited	Has evaluated Ramapo River and devised restoration program	part time
Borough Of Old Tappan, NJ	Would include a new bridge or culvert enlargement to address local flooding problems, which could be included in the mitigation strategy.		Capital Improvements Plan or Grant Award	The Borough of Old Tappan floodplain plan/policies/ordinances meets the minimum NFIP standards.	Floodplain Plans		Maintenance of storm drainage systems helps reduce flooding. Scheduling stream debris removal prior to storms is little help in preventing flooding.			There are no studies or reports available.	The staffing of Borough Departments is minimal and creates limitations on how much time can be dedicated to stream debris removal. Limited human resources must be used at priority locations when needed.
Oradell Borough	Improvements to Emergency Operations Center. Upgrading the Borough Hall and Senior Center with generators. The plan will be updated to identify other potential mitigation sites and will be completed by the fall of 2014.		Capital Improvements Plan	The Borough will work on creating a Floodplain Policy that will meet the minimum NFIP standards and will be consistent with Borough's Stormwater Management Plan.	Flood Plain Policy	Every year, the Environmental Committee has a booth at the event and distributes literature related to environmental issues and mitigation techniques.	The Department of Public Works maintains storm drainage system on regular basis to prevent and minimize flooding, clearing debris before heavy rains.	Oradell Family Day	Municipal Stormwater Management Plan	The report is an excellent tool to guide Borough officials whose goal is to reduce flooding damage and stormwater related issues and to insure proper design and maintenance of stormwater management facilities.	Full time employees who can identify dangers to public safety and will notify proper authorities, i.e. Police, Fire Department/Hazmat for follow up. Coordination between agencies and staff is effective. The training on hazards and mitigation is pursued at every opportunity.
Palisades Park, NJ	The plan addresses all hazards and identifies projects to include mitigation strategy.		2008 Hazard Mitigation Plan	Codes are enforced and administered for reducing hazards.	Borough Ordinances		Information on mitigation practices are disseminated.		2008 Hazard Plan	It identified and assessed a risk.	Further training is needed.

Jurisdiction	Plans	Plans	Plans	Ordinances	Ordinances	Programs	Programs	Programs	Studies/Reports	Studies/Reports	Staffing
Borough of Paramus	Since the original 2008 Mitigation Plan submission we completed the Police Dept generator project and have almost completed the Fire Company #2 generator project. Additionally, we added the purchase of a trailer mounted generator that will supply emergency power to any building that is pre-wired to accept its power. During Hurricane Sandy, we lost power at the Borough Hall which caused a shut down of the building and local government. The building has now been wired to be able to be powered by the trailer mounted generator. We also funded the installation of new generators at Fire Companies 1 and 4. These projects should be completed by the end of Summer 2014. The Life Safety Complex has a generator that does not cover the entire building. The Emergency Operations Center is located in this building. Funds were allocated to purchase an automatic transfer switch that will allow emergency power for the entire building. Since power disruption is a common hazard in the area, these projects do address the hazard and the mitigation strategy.	Following a shooting incident at one of our shopping malls, we are in the process of revising all mall plans based on lessons learned	Capital Improvements		N/A		The Borough of Paramus and all of its Emergency Services have web sites that allow the sharing of information to the public. Additionally we maintain an emergency telephone notification system. We also have Nixle, Twitter, and Facebook accounts that allow for public notification and information sharing. Residents can receive this information via home telephone, mobile telephone, text messaging and computers. The police department maintains 3 visual messaging boards that can be located in specific areas to provide emergency information.		None		We have increased our Emergency Management Staff to 16 members. There is one full time employee who serves as the EMC and one part time employee who serves as a DEMC. There are representatives from the police department. The other members are senior members who have all served in high ranks in an emergency department. The staff is adequate to manage planning, response, recovery and mitigation strategies. They do attend emergency management seminars and conferences. There is an excellent relationship among all of the emergency services in the borough and all are represented in the Emergency Management Staff and the Local Emergency Planning Committee.
Park Ridge, NJ	Each department is required to submit a 5 year capital plan that details large purchases to be made. The plan forces each department to plan for the obsolescence and replacement of critical infrastructure such as buildings, fire apparatus, police cars and DPW equipment.	The plan is reviewed every year, with comprehensive review every 4th year. The reviews keep the plan current and make changes according to experience, need and manpower.	Capital Improvement Plan			The Borough owned electrical utility conducts maintenance on all fire hydrants in the borough annually to ensure their readiness. They also add/relocate hydrants as part of the overall plans review system where each department comments on new construction projects before they are undertaken.	The DPW implements a plan for maintenance of the stormwater runoff system to ensure that drains are open and functioning on a regular basis.	Fire Hydrant Maintenance Program	Mill Pond Dam Project	The Mill Pond Dam was studied for structural stability and compliance with current standards. Work has been ongoing and is almost complete, to bring the facility to compliance.	The PD is staffed by 17 sworn full time LE officers and one support person. They are supplemented by approximately 15 volunteer Reserve Officers. The FD is staffed by 40 active volunteer members, who are all trained to at least the Firefighter level 1. The DPW/Utility Department are staffed by 19 line personnel and several management personnel to keep the electric, water and roads open. OEM Maintains a CERT team of approximately 30 volunteers to assist with whatever is necessary in the event of a flooding situation.
Borough of Ramsey	Updated 2013- 2014	2013- Addresses some upgrades and mitigation projects for the dam. Report is available at Ramsey OEM.	Bergen County Hazard Mitigation Plan	Yes- Municipal Engineer, Zoning Officer, Planning Board and Zoning Board	Municipal Zoning Ordinances				Crystal Spring Lake Dam EAP	Emergency action plan for the Crystal Spring Lake Dam (a NJDEP High Hazard Dam).	Ramsey Engineer- Full time. Ramsey OEM part time. NOTE- Funding is not in place at this time to perform upgrades, repairs, mitigation initiatives.
Ridgefield	Retrofits to Municipal Buildings for use during Emergency Operations.		Capital Improvements Plan	The ordinance covers the "All hazard approach"	Emergency Operation Plan	Information is disseminated to residents on preparedness during emergencies.	Programs promote preparedness during emergencies.	Annual Health Fair	Reports done by FEMA	FEMA reports are used as not to re-OEM, CERT, JEMSinvent the wheel.	Staff is volunteer and part time. There is always training available, and there is always open enrollment to increase staff.
Ridgefield Park, NJ	The Plan addresses flood prone areas in the Village.		Master Plan	Adequately enforced and effectively reduces impacts from natural hazards.	Construction Ordinance						Part time OEM staff. Staff is adequate to enforce regulations. Staff is trained on hazards and mitigation. Excellent coordination between agencies and staff.
Township of Rochells Park						Flood insurance.	Grant monies from state received for project.	CRS			

Jurisdiction	Plans	Plans	Plans	Ordinances	Ordinances	Programs	Programs	Programs	Studies/Reports	Studies/Reports	Staffing
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Township of River Vale	Used to identify and address on-going issues that can affect local flooding problems. Examples include repairing culverts, repairing stormwater pipes and constructing additional drainage to protect property.	Identifies opportunities for open space to be preserved. The majority of these opportunities are within the floodplain and development of these areas would increase flooding in the area.	Capital Improvements Plan	The Township ensures all new developments meet the Stormwater Management regulations to ensure runoff is maintained on-site. Additionally, new construction within the floodplain is strictly monitored.	Stormwater Management/ Floodplain Construction	Information about disaster preparedness and proper construction practices within the floodplain can be disseminated.	The DPW inspects and maintains storm drains within the Township. Storm drains are routinely cleaned and repaired to prevent blockages and flooding.	Annual Township Events	Flood Study (In Progress)	Goals are to identify area of localized flooding, research alternative solutions to alleviate flooding and provide public outreach/information. Will be used to identify Township owned property in high risk and create a mitigation plan to address those risks.	The Township maintains a team of volunteers all trained through Bergen County classes.
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	Plan is from 2008. Since then, we have had various disasters which have enhanced our awareness of mitigation.	The purpose of this annual plan is to track the progress of the improvements made towards removing or remediate the repetitive loss structures out of there "high risk situations".	Emergency Operations Plan	The building department and Engineering Division rely heavily on these regulations to control over development and building below BFE.	UCC, NJDEP regulations, Zoning Regulations	Provide awareness for Stormwater management, CRS flooding awareness (includes a website).	Drainage system maintenance. Scheduled pre and post cleaning of "hot spots" of known flooding issues.	Earth Day Kiosk	In-house Engineering Staff	Having an in-house staff is invaluable. They track all damage assesment and PW Field staff has been reduced from 4 to 2 employees. Enforcement of document stream flow gages and maintain all storm and sanitary sewer systems.	stormwater regulations, future planning and resident interaction as at an all time low.
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River Edge, NJ	The Borough has from time to time, authorized capital finding to address local flooding problems and/or funds which could be used in a mitigation strategy. Examples include but are not limited to the authorization of \$55,000 out of Ordinance #1568 for stormwater outfalls. The first of several reconstructions has recently been completed. In addition, a generator for the Department of Public Works which was elevated out of Ordinance #1495 was completed several years ago. An elevated replacement generator for Fire Company #2 is in the planning stages, but funds have been authorized in the amount of \$39,000.00. A recently completed Public Safety Building Generator is done with increased capacity now powers Borough Hall as well. Finally, an area prone to flooding primarily located on Voorhis Avenue recently received catch basin upgrades and a cleaning of pipe lines with an authorization of \$141,000.00.	The zoning map which identifies development and conservation areas was updated in August of 2000. The Master Plan which addresses some of those same issues had a re-examination report in September of 2009.	Capital Improvement Plan	Ordinance 844 as amended by Ordinance 1141.	Floodplain Ordinance	The Emergency Management Coordinator has provided information to the Library Director to hand out to residents and is also planning to put a program together at the library within the next few months. He has attended meetings for the Senior Citizens of River Edge (SCORE) and handed out emergency information. He is also planning a program for them as well in May 2014. There is a possibility that Emergency Management will participate in River Edge Day and use that as an opportunity to provide flyers regarding what to do during a disaster as well as mitigation techniques.	River Edge has implemented an annual catch basin cleaning program to maintain catch basis function and efficiency. All catch basins have been inspected once each year. If, at the time of inspection, no sediment, trash or debris is observed in the catch basin, then that catch basin will not be cleaned. All catch basins will be inspected yearly, even if they were found to be "clean" the previous year. At the time of cleaning, the catch basins will also be inspected for proper function. Maintenance will be scheduled for those catch basins that are in disrepair. Repairs are done on a priority work list. River Edge has Implemented a stormwater facility maintenance program to ensure that all Stormwater facilities operated by the Borough function properly. River Edge operates the following: catch basins, storm drains. Of the 658 storm drain inlets, 93% or 611 are in compliance. 7% or 47 are basins that need to be retrofitted and will be accomplished as the street paving takes place.	Annual Village Fair (River Edge Day)	Coles Brook	The Borough has written to a neighboring municipality to determine whether they have like interest in having waterway study with the potential work being dredging of the brook. The brook recently underwent a de-snagging treatment preformed by the Department of Public Works.	Part time independent Contractor part time volunteer full time full time volunteer
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Borough of Rockleigh	Continue involvement in Community Rating Program for Flood Insurance		Community Rating Program	All ordinance meets minimum NFIP standards and building codes	Floor Plain Ordinance						Paid borough planner trained in all hazards and mitigation planning. Makes recommendations to planning/zoning board for implementation.
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Jurisdiction	Plans	Plans	Plans	Ordinances	Ordinances	Programs	Programs	Programs	Studies/Reports	Studies/Reports	Staffing
Borough of Rutherford	Rutherford part of regional plan to address Passaic River flooding.		Passaic River Basin Plan	Addresses development in floodplain. Prohibits renovation or habitation of basements.	Zoning Code						part time, has training on hazards & mitigation (planner)
Oakland	In the process of completing CRS program.	ongoing and identifying mitigation actions H.		Have identified issues within the Borough.	River Issues		Maintaining storm drain system.		Trout unlimited	Has evaluated Ramapo River and devised restoration program	part time
Township of South Hackensack	Plan addresses all hazards & can be used to implement mitigation action.		Emergency Operation Plan	Reduce runoff from impervious areas and procedures for maintaining existing drainage structures.	Stormwater Management Ordinance		proper maintenance of storm drainage systems to prevent flooding problems.Scheduling of regular cleaning of debris from catch basins.				Part time OEM Coordinator
Township of Saddle Brook	The date of this plan is 20014. The plan addresses the hazards as a result of flooding within the township. Funding is very important to the township since there has been losses within the last 15 years as a result of the river flooding.			The Township has ordinances and building code requirements when new construction is presented while within the 50 year and 100 year flood zones. They are strictly enforced.			These programs will mitigate flooding and safely assist the residents in emergency situations.			Studies have been conducted by the army corps of engineers.	Currently the staff is part time and coordinates with other agencies for assistance.
Borough of Saddle River	Camera Surveillance Completed		2008		none	water run off of the 100 year storm		Requires all new houses to maintain storm water on site up to 150% of the	none		Adequate
Township of Teaneck	Reduces flooding in certain areas of Township and prevents damage to strategic property and vital equipment.	Provides for continuance of government operations during emergencies, as well as enhancement of communications during power outages.	Flood/Hazard Mitigation	N/A		N/A	N/A				
Borough of Tenafly	2014 - yes- yes-yes		Shelter Generator Project	n/a			It enables residents to continue with their daily lives after a disaster and provides them with a sense of security			2 locations have been deemed as suitable shelters, but the facilities require generators to be an effective shelter	n/a
Teterboro, NJ	All flooded areas are identified and are currently being addressed.		Hazard Mitigation Plan 2013	Has been prepared in accordance with Title 44 part 201.6 of the Code of Federal Regulations pertaining to the requirements for mitigation planning.	Bergen County Hazardous Multi-Jurisdictional Plan	Dredging and cleaning of debris on a periodical basis will also help control the storm water.	Will help control storm water in the area of the airport and west riser ditch.	Maintenance of East and West Riser Ditch			
Upper Saddle River	???		Master Plan	Yes, Yes and new development is protected via ordinance	Boro Code		Maintainence of Storm Drains and Catch Basins				Staffing is both part time and full time and some are trained in mitigation. Staffing is inadequate. Coordination is effective
Borough of Woodcliff Lake	Raise control panels out of manholes at sewer pump stations	Add second culvert under Woodcliff Avenue causeway.Add aux. power supply to county traffic lights.	Capital Improvement Plan		Work in progress		Check fore damage and flow several times per year.		None current		Borough Administrator Full time.OEM coordinator, part time.Construction Code, part time.Borough engineer, on call as neededPolice Chief, full time.Fire Chief, volunteer.All staff work well together.
Borough of Waldwick	The study addresses the needs and what has to be done to the Dam.		Sept. 2010	In this case an ordinance or policy is not relevant	N/A		It would minimize potential of breach of the structure		Sept. 2010	Complete engineering review of the structure and it provides background of what needs to be done.	Staffing is not relevant
Borough of Wallington				Building codes are vigorously enforced, especially storm water regulations as well as, building codes in flood plains.			Flood plain building codes address the proper elevations adequately.			several studies have been conducted by the Army Corps of Engineers. Which recommendation has not been chosen.	The staff is part-time, but have over thirty years experience in flood plain management.
Township of Washington	Spring, 2014 various road improvements will be conducted which will all comply with DEP storm water regulations along with the upgrade to current DEP standards for storm water basin heads.		Road improvements	Initial filing was 11/05/76 and it was last updated, 09/30/05. Enforcement for floodplain ordinances are enforceable by sub-code official and engineer.	Floodplain ordinance	Currently in the process of putting a CERT program together which will be built into future mitigation activities.	The Township has been allocated monies for the HMGP under which several energy related mitigation projects have been proposed.	CERT			Part-time sub-code on staff that is responsible for the enforcement of local ordinances. Does not have hazard mitigation training.

Jurisdiction	Plans	Plans	Plans	Ordinances	Ordinances	Programs	Programs	Programs	Studies/Reports	Studies/Reports	Staffing
Westwood, NJ	Recognize all flood prone areas as well as known waterways.		Master Plan 2011	Meets the minimum NFIP standards and new development will be protected from flooding.	Flood Damage Prevention	Aiding residents in flood area to reduce their flood insurance premiums.	Funds used to buy and demolish substantially damaged homes.	Application to the CRS Program			Full time, trainedPart time, Trained and Certified
	The plan addresses measures to mitigate against flooding, including the installation of french drains at the Civic Center post-Irene. Louvers were also installed to prevent water form coming in.	Number of catch basins has been increased as roads are repaved to alleviate localized flooding	Capital Improvement Plan				Ongoing planning for maintenance and mitigation efforts to reduce flooding				Mitigation trained, involved in all aspects of emergency management
WYCKOFF, NEW JERSEY , BERGEN COUNTY	Limited flooding hazards and exposure. Wind hazards and utility emergencies. Proactive trimming and pruning of trees ongoing effort to minimize power interruption.		2006 HMP	Ordinance is enforced and applied to residential and commercial development to mitigate stormwater runoff from the expansion of structures. Zero net increase in runoff required.	Stormwater Management Ordinance	Promote public awareness to proactively educate the public on hazards, disaster relief areas, environmental responsibility, community participation.	Sanitary and storm sewer facilities maintenance prevents flooding and environmental impacts. Annual personnel training and awareness promotes effectiveness of mitigation strategies.	Public information - social media, websites, newsletters. 208	NJDOT drainage study at	Currently in progress of infrastructure upgrade to improve integrity and function.	Full time employee. Member of OEM team, First Responder, Damage assessment coordinator, facilities and infrastructure management.

Appendix M: NFIP Insurance Occupancy Data

**Insurance Occupancy – Residential/non residential
Source NFIP Community Information System as of 12/31/2014**

BERGEN COUNTY	NJ ID#	CID#	Policies in force				Total
			Single family	2-4 Family	All other Residential	Non-Residential	
Allendale Borough	0201	340019	70	2	0	6	78
Alpine Borough	0202	340581					
Bergenfield Borough	0203	340020	140	14	49	21	224
Bogota Borough	0204	340021	11	1	0	4	16
Carlstadt Borough	0205	340022	6	4	0	39	49
Cliffside Park Borough	0206	340582					
Closter Borough	0207	340023	27	2	0	10	39
Cresskill Borough	0208	340024	71	2	3	7	83
Demarest Borough	0209	340025	40	0	0	0	40
Dumont Borough	0210	340026	132	17	7	6	162
Elmwood Park Borough	0211	340500	45	17	1	17	80
East Rutherford Borough	0212	340028	83	54	28	32	197
Edgewater Borough	0213	340029	46	30	1836	61	1973
Emerson Borough	0214	340030	20	0	0	1	21
Englewood City	0215	340031	186	38	184	93	501
Englewood Cliffs Boro	0216	340580					
Fair Lawn Borough	0217	340033					351
Fairview Borough	0218	340034	5	4	0	8	17
Fort Lee Borough	0219	340035	14	4	2	0	20
Franklin Lakes Borough	0220	340036	54	3	0	3	60
Garfield City	0221	340037	57	111	2	40	210
Glen Rock Borough	0222	340038	68	0	0	3	71
Hackensack City	0223	340039	86	51	511	157	805
Harrington Park Borough	0224	340040	33	3	2	0	38
Hasbrouck Heights Bor.	0225	340041	17	1	0	6	24
Haworth Borough	0226	340042	17	0	0	0	17
Hillsdale Borough	0227	340043	117	2	1	22	142
Ho Ho Kus Borough	0228	340044	84	4	0	11	99
Leonia Borough	0229	340045	28	0	7	7	42
Little Ferry Borough	0230	340046	704	234	184	60	1182
Lodi Borough	0231	340047	52	84	138	57	331
Lyndhurst Township	0232	340048	131	45	89	14	279
Mahwah Township	0233	340049	138	1	27	20	186
Maywood Borough	0234	340050	36	2	12	5	55
Midland Park Borough	0235	340051	9	2	3	11	25

Montvale Borough	0236	340052	37	0	0	3	40
Moonachie Borough	0237	340053	227	21	0	42	290
New Milford Borough	0238	340054	178	5	18	15	216
North Arlington Borough	0239	340055					
Northvale Borough	0240	340056	28	3	22	43	96
Norwood Borough	0241	340057	38	0	0	11	49
Oakland Borough	0242	345309	207	9	1	6	223
Old Tappan Borough	0243	340059	31	0	0	0	31
Oradell Borough	0244	340060	33	0	0	7	40
Palisades Park Borough	0245	340061	5	5	1	5	16
Paramus Borough	0246	340062	174	4	4	62	244
Park Ridge Borough	0247	340063	38	2	17	10	67
Ramsey Borough	0248	340064	97	9	15	16	137
Ridgefield Borough	0249	340066	68	23	4	21	116
Ridgefield Park Village	0250	340065	81	26	140	26	273
Ridgewood Village	0251	340067	338	3	1	12	354
River Edge Borough	0252	340068	39	0	6	19	64
River Vale Township	0253	340069	74	0	0	1	75
Rochelle Park Township	0254	340070	339	2	12	28	381
Rockleigh Borough	0255	340071	4	0	0	3	7
Rutherford Borough	0256	340072	112	12	41	15	180
Saddle Brook Township	0257	340074	207	50	47	30	334
Saddle River Borough	0258	340073	31	0	0	11	42
South Hackensack Twp.	0259	340515	13	8	0	42	63
Teaneck Township	0260	340075	140	1	29	9	179
Tenafly Borough	0261	340076	66	11	1	1	79
Teterboro Borough	0262	340537	0	1	1	4	6
Upper Saddle River Bor.	0263	340077	74	0	0	2	76
Waldwick Borough	0264	340078	29	2	0	1	32
Wallington Borough	0265	340079	125	302	41	48	516
Washington Township	0266	340080	43	0	1	1	45
Westwood Borough	0267	340081	192	6	124	15	337
Woodcliff Lake Borough	0268	340082	48	0	0	2	50
Wood-Ridge Borough	0269	340083	20	7	1	10	38
Wyckoff Township	0270	340084	58	2	0	0	60
Hackensack Meadowlands Commission	0299	340570	444	182	1039	679	2344



Community Information System

Release 4.07.00.00, 09/15/2014 -- Build 002, Skip Navigation

Insurance Occupancy

As of 12/31/2014

- CIS Home
- Search
- Previous Search
- Community
- CRS
- CAC/CAV
- Maps
- SOS
- Insurance
- CAP-SSSE
- CAV Selection

- CIS Reports
- Links
- Request/Feedback

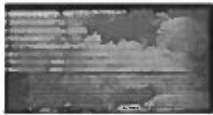
FAMS

Log Out

Community:	BERGEN COUNTY*	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	345529

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family							
2-4 Family							
All Other Residential							
Non Residential							
Total	0	\$0	\$0	0	\$0.00	\$0.00	

	Policies in Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo						
Non Condo						
Total	0	\$0	\$0	0	\$0.00	\$0.00



Community Information System

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Insurance Occupancy

As of 12/31/2014

Community:	ALLENDALE, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340019

Overview	Occupancy	Zone	Pre/Post FIRM
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	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	70	\$81,366	\$18,480,700	36	\$430,236.19	\$27,726.85
2-4 Family	2	\$2,674	\$355,000	0	\$0.00	\$0.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	6	\$14,319	\$2,180,000	1	\$141,344.45	\$3,487.72
Total	78	\$98,359	\$21,015,700	37	\$571,580.00	\$31,213.00

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	Policies in Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	2	\$887	\$390,000	0	\$0.00	\$0.00
Non Condo	76	\$97,672	\$20,625,700	37	\$571,580.64	\$31,214.57
Total	78	\$98,359	\$21,015,700	37	\$571,580.00	\$31,214.00



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Insurance Occupancy

As of 12/31/2014

Community:	BERGENFIELD, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340020

Overview	Occupancy	Zone	Pre/Post FIRM
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	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	140	\$208,537	\$33,727,300	65	\$255,356.50	\$32,815.00
2-4 Family	14	\$21,126	\$3,203,000	5	\$36,525.47	\$3,530.00
All Other Residential	49	\$19,521	\$7,663,200	0	\$0.00	\$0.00
Non Residential	21	\$74,427	\$7,993,600	10	\$234,742.72	\$8,735.25
Total	224	\$323,611	\$52,587,100	80	\$526,623.00	\$45,080.00

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	45	\$6,007	\$6,012,800	7	\$9,082.50	\$1,160.00
Non Condo	179	\$317,604	\$46,574,300	73	\$517,542.19	\$43,920.25
Total	224	\$323,611	\$52,587,100	80	\$526,624.00	\$45,080.00

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Insurance Occupancy

As of 12/31/2014

Community:	BOGOTA, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340021

Overview	Occupancy	Zone	Pre/Post FIRM
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	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	11	\$6,913	\$3,218,000	4	\$50,508.37	\$3,965.00
2-4 Family	1	\$348	\$140,000	0	\$0.00	\$0.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	4	\$13,822	\$1,500,000	17	\$381,984.83	\$11,685.94
Total	16	\$21,081	\$4,858,000	21	\$432,490.00	\$15,650.00

	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	0	\$0.00	\$0.00
Non Condo	16	\$21,081	\$4,858,000	21	\$432,491.20	\$15,650.94
Total	16	\$21,081	\$4,858,000	21	\$432,491.00	\$15,650.00

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Insurance Occupancy

As of 12/31/2014

Community:	CARLSTADT, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340022

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	8	\$4,908	\$1,531,100	3	\$11,035.37	\$1,900.00
2-4 Family	4	\$2,607	\$1,177,900	1	\$38,448.15	\$1,200.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	39	\$212,617	\$22,692,900	73	\$7,310,011.97	\$202,561.06
Total	49	\$220,130	\$25,401,900	77	\$7,359,494.00	\$205,661.00

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	0	\$0.00	\$0.00
Non Condo	49	\$220,130	\$25,401,900	77	\$7,359,495.49	\$205,661.06
Total	49	\$220,130	\$25,401,900	77	\$7,359,495.00	\$205,661.00

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Insurance Occupancy

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Community:	CLIFFSIDE PARK, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340582

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family						
2-4 Family						
All Other Residential						
Non Residential						
Total	0	\$0	\$0	0	\$0.00	\$0.00

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo						
Non Condo						
Total	0	\$0	\$0	0	\$0.00	\$0.00



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Community:	CLOSTER, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340023

	Policies in Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	27	\$32,105	\$7,583,400	26	\$284,510.42	\$16,850.00
2-4 Family	2	\$3,837	\$652,500	0	\$0.00	\$0.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	10	\$39,511	\$6,000,000	2	\$6,979.21	\$520.00
Total	39	\$75,453	\$14,235,900	28	\$291,489.00	\$17,370.00

	Policies in Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	1	\$2,979.21	\$240.00
Non Condo	39	\$75,453	\$14,235,900	27	\$288,510.42	\$17,130.00
Total	39	\$75,453	\$14,235,900	28	\$291,489.00	\$17,370.00



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Community:	CRESSKILL, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340024

Overview	Occupancy	Zone	Pre/Post FIRM
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	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	71	\$96,863	\$20,436,800	39	\$405,900.51	\$25,655.00
2-4 Family	2	\$3,290	\$600,000	1	\$1,337.89	\$425.00
All Other Residential	3	\$3,023	\$1,351,400	0	\$0.00	\$0.00
Non Residential	7	\$28,999	\$3,997,300	2	\$117,338.51	\$1,975.00
Total	83	\$132,175	\$26,385,500	42	\$524,575.00	\$28,055.00

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	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	5	\$404,866.73	\$3,180.00
Non Condo	83	\$132,175	\$26,385,500	38	\$419,710.18	\$26,575.00
Total	83	\$132,175	\$26,385,500	43	\$824,576.00	\$29,755.00

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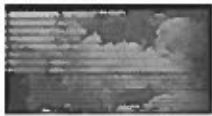
Insurance Occupancy

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Community:	DEMAREST, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340025

	Overview	Occupancy	Zone	Pre/Post FIRM			
		Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family		40	\$39,549	\$10,918,800	15	\$101,226.12	\$10,760.00
2-4 Family		0	\$0	\$0	0	\$0.00	\$0.00
All Other Residential		0	\$0	\$0	0	\$0.00	\$0.00
Non Residential		0	\$0	\$0	0	\$0.00	\$0.00
Total		40	\$39,549	\$10,918,800	15	\$101,226.00	\$10,760.00

	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	1	\$235	\$70,000	0	\$0.00	\$0.00
Non Condo	39	\$39,314	\$10,848,800	15	\$101,226.12	\$10,760.00
Total	40	\$39,549	\$10,918,800	15	\$101,226.00	\$10,760.00



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Community:	DUMONT, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340026

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	132	\$271,775	\$30,953,400	58	\$284,907.19	\$30,215.00	
2-4 Family	17	\$31,561	\$3,479,400	8	\$41,573.75	\$4,185.00	
All Other Residential	7	\$17,143	\$2,624,700	0	\$0.00	\$0.00	
Non Residential	6	\$24,866	\$2,039,100	0	\$0.00	\$0.00	
Total	162	\$345,345	\$39,096,600	66	\$326,480.00	\$34,400.00	

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	1	\$99	\$4,700	6	\$7,747.77	\$970.00
Non Condo	161	\$345,246	\$39,091,900	60	\$318,733.17	\$33,430.00
Total	162	\$345,345	\$39,096,600	66	\$326,480.00	\$34,400.00



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Community:	EAST RUTHERFORD, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340028

	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	83	\$175,200	\$17,279,700	86	\$1,279,601.33	\$82,176.13
2-4 Family	54	\$115,337	\$12,124,400	91	\$2,141,798.46	\$110,133.06
All Other Residential	28	\$6,882	\$4,802,900	0	\$0.00	\$0.00
Non Residential	32	\$95,040	\$19,016,000	18	\$3,103,426.18	\$85,473.66
Total	197	\$392,459	\$53,223,000	195	\$6,524,825.00	\$277,782.00

	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	29	\$4,876	\$4,853,600	0	\$0.00	\$0.00
Non Condo	168	\$387,583	\$48,369,400	195	\$6,524,825.97	\$277,782.85
Total	197	\$392,459	\$53,223,000	195	\$6,524,825.00	\$277,782.00



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Insurance Occupancy

As of 12/31/2014

Community:	EDGEWATER, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340029

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	46	\$24,648	\$11,818,600	7	\$501,706.37	\$15,306.12
2-4 Family	30	\$11,552	\$8,216,500	4	\$36,402.51	\$3,390.00
All Other Residential	1,836	\$431,307	\$405,968,100	15	\$1,136,980.23	\$35,897.01
Non Residential	61	\$147,237	\$27,425,800	28	\$4,495,685.38	\$120,290.79
Total	1,973	\$614,742	\$453,429,000	54	\$6,170,773.00	\$174,883.00

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	1,868	\$429,938	\$413,921,400	13	\$1,332,678.48	\$40,830.00
Non Condo	105	\$184,804	\$39,507,600	41	\$4,838,096.01	\$134,053.92
Total	1,973	\$614,742	\$453,429,000	54	\$6,170,774.00	\$174,883.00



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As of 12/31/2014

Community:	ELMWOOD PARK, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340500

Overview	Occupancy	Zone	Pre/Post FIRM
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	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	45	\$49,744	\$10,741,500	65	\$888,023.98	\$43,436.29
2-4 Family	17	\$13,397	\$4,626,000	17	\$97,928.33	\$11,760.00
All Other Residential	1	\$424	\$275,000	0	\$0.00	\$0.00
Non Residential	17	\$41,922	\$8,181,200	4	\$753,406.34	\$17,415.49
Total	80	\$105,487	\$23,823,700	86	\$1,739,357.00	\$72,611.00

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	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	22	\$69,349.21	\$5,350.00
Non Condo	80	\$105,487	\$23,823,700	64	\$1,670,009.42	\$67,261.78
Total	80	\$105,487	\$23,823,700	86	\$1,739,358.00	\$72,611.00



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Insurance Occupancy

As of 12/31/2014

Community:	EMERSON, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340030

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	20	\$11,306	\$4,807,800	17	\$205,320.92	\$11,243.68
2-4 Family	0	\$0	\$0	2	\$61,153.47	\$2,225.19
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	1	\$116	\$200	5	\$56,833.86	\$2,690.00
Total	21	\$11,422	\$4,808,000	24	\$323,308.00	\$16,158.00

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	4	\$4,235.04	\$630.00
Non Condo	21	\$11,422	\$4,808,000	20	\$319,073.21	\$15,528.87
Total	21	\$11,422	\$4,808,000	24	\$323,308.00	\$16,158.00



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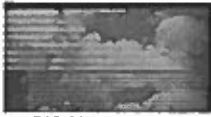
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Community:	ENGLEWOOD CLIFFS, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340580

Overview	Occupancy	Zone	Pra/Post FIRM				
	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family							
2-4 Family							
All Other Residential							
Non Residential							
Total	0	\$0	\$0	0	\$0.00	\$0.00	

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo						
Non Condo						
Total	0	\$0	\$0	0	\$0.00	\$0.00



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Insurance Occupancy

As of 12/31/2014

Community:	ENGLEWOOD, CITY OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340031

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	186	\$320,618	\$45,940,100	136	\$771,456.22	\$84,073.00
2-4 Family	38	\$58,378	\$9,081,600	18	\$153,466.89	\$14,150.00
All Other Residential	184	\$98,541	\$79,554,800	6	\$57,476.56	\$3,525.00
Non Residential	93	\$352,809	\$46,007,800	33	\$2,634,048.22	\$76,760.29
Total	501	\$828,346	\$180,564,300	193	\$3,616,446.00	\$178,508.00

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	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	179	\$56,550	\$77,459,500	9	\$91,768.23	\$2,550.00
Non Condo	322	\$771,796	\$103,104,800	184	\$3,524,679.66	\$175,958.29
Total	501	\$828,346	\$180,564,300	193	\$3,616,447.00	\$178,508.00



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Insurance Overview

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Community: FAIR LAWN, BOROUGH OF		State: NEW JERSEY	
County: BERGEN COUNTY		CID: 340033	
Overview	Occupancy	Zone	Pre/Post FIRM
Total by Community		Group Flood Insurance	
Total Number of Policies:	351	Total Number of Policies:	0
Total Premiums:	\$588,067	Total Premiums:	\$0
Insurance In Force:	\$88,366,600	Insurance in Force:	\$0
Total Number of Closed Paid Losses:	271	Total Number of Closed Paid Losses:	0
\$ of Closed Paid Losses:	\$5,349,658	\$ of Closed Paid Losses:	\$0
Post Firm Minus Rated Policies		Manufactured Homes	
Total Number of Minus Rated Policies:	7	Total Number of Policies:	0
A Zone Minus Rated Policies:	7	Total Number of Closed Paid Losses:	0
V Zone Minus Rated Policies:	0	\$ of Closed Paid Losses:	\$0
ICC		1316	
Total Number of ICC Closed Paid Losses:	0	Number of Properties by Community:	0
\$ of ICC Closed Paid Losses:	\$0		
Substantial Damage Losses			
Number of Substantial Damage Closed Paid Losses:		3	



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Community:	FAIRVIEW, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340034

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	5	\$6,830	\$1,242,000	3	\$59,623.16	\$2,755.00
2-4 Family	4	\$1,464	\$1,078,000	1	\$1,493.25	\$180.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	8	\$28,920	\$3,657,500	8	\$660,523.33	\$15,250.00
Total	17	\$37,214	\$5,977,500	12	\$721,639.00	\$18,185.00

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	2	\$57,950.00	\$1,120.00
Non Condo	17	\$37,214	\$5,977,500	10	\$663,689.74	\$17,065.00
Total	17	\$37,214	\$5,977,500	12	\$721,639.00	\$18,185.00



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Community:	FORT LEE, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340035

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	14	\$6,078	\$4,440,000	7	\$51,782.86	\$4,255.00
2-4 Family	4	\$1,971	\$1,190,000	1	\$600.00	\$110.00
All Other Residential	2	\$874	\$700,000	0	\$0.00	\$0.00
Non Residential	0	\$0	\$0	0	\$0.00	\$0.00
Total	20	\$8,923	\$6,330,000	8	\$52,382.00	\$4,365.00

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	2	\$579	\$380,000	3	\$13,975.20	\$660.00
Non Condo	18	\$8,344	\$5,950,000	5	\$38,407.66	\$3,705.00
Total	20	\$8,923	\$6,330,000	8	\$52,382.00	\$4,365.00



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Community:	FRANKLIN LAKES, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340036

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	54	\$52,610	\$15,933,300	12	\$101,605.70	\$8,435.00
2-4 Family	3	\$5,367	\$395,000	9	\$152,451.85	\$8,100.46
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	3	\$6,952	\$1,600,000	0	\$0.00	\$0.00
Total	60	\$64,929	\$17,928,300	21	\$254,056.00	\$16,535.00

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	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	1	\$4,944.89	\$320.00
Non Condo	60	\$64,929	\$17,928,300	20	\$249,112.66	\$16,215.46
Total	60	\$64,929	\$17,928,300	21	\$254,056.00	\$16,535.00



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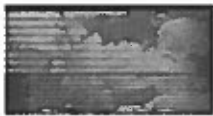
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Community:	GARFIELD, CITY OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340037

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	57	\$98,320	\$12,366,100	65	\$577,738.80	\$44,315.00	
2-4 Family	111	\$212,369	\$23,180,900	158	\$2,077,065.75	\$124,770.46	
All Other Residential	2	\$6,528	\$660,100	3	\$77,348.54	\$3,785.14	
Non Residential	40	\$149,420	\$15,716,300	51	\$1,514,195.16	\$56,518.88	
Total	210	\$466,637	\$51,923,400	277	\$4,246,346.00	\$229,388.00	

	Policies in Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	1	\$124	\$28,000	38	\$103,832.65	\$7,900.00
Non Condo	209	\$466,513	\$51,895,400	239	\$4,142,515.40	\$221,489.46
Total	210	\$466,637	\$51,923,400	277	\$4,246,347.00	\$229,389.00



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Community:	GLEN ROCK, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340038

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	68	\$89,818	\$17,230,800	25	\$188,088.05	\$15,102.17
2-4 Family	0	\$0	\$0	0	\$0.00	\$0.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	3	\$4,118	\$1,246,500	2	\$204,181.13	\$4,900.00
Total	71	\$93,936	\$18,477,300	27	\$392,269.00	\$20,002.00

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	4	\$7,069.60	\$740.00
Non Condo	71	\$93,936	\$18,477,300	23	\$385,199.58	\$19,262.17
Total	71	\$93,936	\$18,477,300	27	\$392,268.00	\$20,002.00



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Community:	HACKENSACK, CITY OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340039

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	86	\$122,619	\$18,711,900	63	\$528,197.82	\$47,997.87	
2-4 Family	51	\$73,869	\$9,987,700	51	\$705,217.08	\$47,083.30	
All Other Residential	511	\$213,684	\$65,949,700	82	\$2,324,030.46	\$91,423.80	
Non Residential	157	\$469,463	\$64,614,700	121	\$7,563,514.83	\$237,815.24	
Total	805	\$879,635	\$159,264,000	317	\$11,120,958.00	\$424,318.00	

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	509	\$197,031	\$64,505,700	47	\$727,056.75	\$39,746.75
Non Condo	296	\$682,604	\$94,758,300	270	\$10,393,903.44	\$384,573.46
Total	805	\$879,635	\$159,264,000	317	\$11,120,959.00	\$424,319.00



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Community:	HARRINGTON PARK, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340040

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	33	\$28,581	\$9,267,000	9	\$98,045.89	\$5,915.00	
2-4 Family	3	\$2,032	\$830,000	3	\$60,934.05	\$3,765.00	
All Other Residential	2	\$3,066	\$98,000	0	\$0.00	\$0.00	
Non Residential	0	\$0	\$0	11	\$491,148.44	\$13,870.00	
Total	38	\$33,659	\$10,195,000	23	\$650,127.00	\$23,550.00	

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	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	1	\$452	\$48,000	3	\$3,685.00	\$470.00
Non Condo	37	\$33,207	\$10,147,000	20	\$646,443.38	\$23,080.00
Total	38	\$33,659	\$10,195,000	23	\$650,128.00	\$23,550.00



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Community:	HASBROUCK HEIGHTS, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340041

	Policies in Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	17	\$6,894	\$4,634,000	10	\$48,327.45	\$4,245.00
2-4 Family	1	\$315	\$105,000	0	\$0.00	\$0.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	6	\$20,583	\$2,950,000	10	\$702,320.43	\$29,056.25
Total	24	\$27,792	\$7,689,000	20	\$750,647.00	\$33,301.00

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	2	\$12,332.88	\$640.00
Non Condo	24	\$27,792	\$7,689,000	20	\$750,647.88	\$33,301.25
Total	24	\$27,792	\$7,689,000	22	\$762,979.00	\$33,941.00



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Community:	HAWORTH, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340042

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	17	\$11,574	\$4,908,000	5	\$37,664.26	\$3,150.00
2-4 Family	0	\$0	\$0	0	\$0.00	\$0.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	0	\$0	\$0	3	\$52,544.00	\$1,340.00
Total	17	\$11,574	\$4,908,000	8	\$90,208.00	\$4,490.00

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	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	0	\$0.00	\$0.00
Non Condo	17	\$11,574	\$4,908,000	8	\$90,208.26	\$4,490.00
Total	17	\$11,574	\$4,908,000	8	\$90,208.00	\$4,490.00



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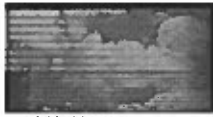
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Community:	HILLSDALE, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340043

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	117	\$180,800	\$28,942,800	273	\$4,036,129.40	\$225,012.34	
2-4 Family	2	\$1,934	\$652,500	12	\$105,169.32	\$8,630.00	
All Other Residential	1	\$1,853	\$250,000	0	\$0.00	\$0.00	
Non Residential	22	\$142,331	\$11,824,800	28	\$2,007,954.47	\$58,179.45	
Total	142	\$326,918	\$41,670,100	313	\$6,149,252.00	\$291,821.00	

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	1	\$3,104	\$500,000	15	\$91,117.82	\$5,674.87
Non Condo	141	\$323,814	\$41,170,100	298	\$6,058,135.37	\$286,146.92
Total	142	\$326,918	\$41,670,100	313	\$6,149,252.00	\$291,820.00



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Community:	HO-HO-KUS, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340044

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	84	\$157,051	\$21,470,800	32	\$308,172.29	\$21,289.32	
2-4 Family	4	\$7,096	\$1,129,000	0	\$0.00	\$0.00	
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00	
Non Residential	11	\$39,787	\$5,702,500	3	\$10,864.93	\$985.00	
Total	99	\$203,934	\$28,302,300	35	\$319,038.00	\$22,274.00	

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	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Condo	0	\$0	\$0	4	\$5,795.61	\$620.00	
Non Condo	99	\$203,934	\$28,302,300	31	\$313,241.61	\$21,654.32	
Total	99	\$203,934	\$28,302,300	35	\$319,038.00	\$22,274.00	



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Community: LEONIA, BOROUGH OF	State: NEW JERSEY
County: BERGEN COUNTY	CID: 340045

Overview	Occupancy	Zone	Pre/Post FIRM			
	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	28	\$14,366	\$7,225,300	8	\$52,740.22	\$3,615.00
2-4 Family	0	\$0	\$0	0	\$0.00	\$0.00
All Other Residential	7	\$2,531	\$1,900,000	1	\$1,957.67	\$200.00
Non Residential	7	\$19,388	\$4,696,800	2	\$150,327.36	\$6,521.10
Total	42	\$36,285	\$13,822,100	11	\$205,024.00	\$10,336.00

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	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	8	\$2,940	\$2,250,000	2	\$4,179.30	\$420.00
Non Condo	34	\$33,345	\$11,572,100	9	\$200,845.95	\$9,916.10
Total	42	\$36,285	\$13,822,100	11	\$205,024.00	\$10,336.00



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Community:	LITTLE FERRY, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340048

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	704	\$1,351,881	\$137,480,600	785	\$17,981,601.24	\$973,852.64
2-4 Family	234	\$459,089	\$51,375,400	323	\$7,238,772.80	\$404,023.97
All Other Residential	184	\$143,523	\$23,825,600	19	\$604,677.28	\$30,743.65
Non Residential	60	\$199,581	\$23,032,900	64	\$3,866,390.65	\$134,414.92
Total	1,182	\$2,153,874	\$235,714,500	1,191	\$29,671,440.00	\$1,543,032.00

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	161	\$74,751	\$17,273,500	22	\$577,134.51	\$30,951.73
Non Condo	1,021	\$2,079,123	\$218,441,000	1,169	\$29,094,307.28	\$1,512,083.45
Total	1,182	\$2,153,874	\$235,714,500	1,191	\$29,671,441.00	\$1,543,034.00



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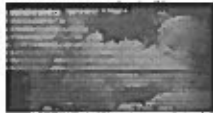
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Community:	LODI, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340047

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	52	\$86,022	\$10,171,800	227	\$2,731,533.69	\$143,588.29
2-4 Family	84	\$147,838	\$18,722,900	289	\$4,660,962.41	\$250,145.23
All Other Residential	138	\$87,981	\$23,145,700	71	\$2,988,293.47	\$88,940.73
Non Residential	57	\$139,338	\$17,610,500	311	\$12,433,935.48	\$336,917.12
Total	331	\$461,179	\$69,650,900	898	\$22,814,723.00	\$819,590.00

	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	113	\$19,320	\$15,719,300	162	\$1,940,552.72	\$59,484.41
Non Condo	218	\$441,859	\$53,931,600	738	\$20,888,984.51	\$760,876.96
Total	331	\$461,179	\$69,650,900	900	\$22,829,538.00	\$820,360.00



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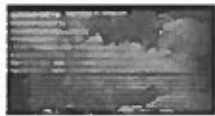
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Community:	LYNDHURST, TOWNSHIP OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340048

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	131	\$232,859	\$29,581,500	264	\$8,950,921.44	\$334,244.41
2-4 Family	45	\$87,482	\$9,052,100	69	\$1,140,576.53	\$68,965.57
All Other Residential	89	\$25,301	\$17,516,500	1	\$102,647.93	\$3,400.00
Non Residential	14	\$53,156	\$6,466,200	27	\$1,550,893.88	\$55,890.31
Total	279	\$378,798	\$62,616,300	361	\$9,745,037.00	\$462,499.00

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	87	\$20,643	\$18,761,500	3	\$5,224.00	\$520.00
Non Condo	192	\$358,155	\$45,854,800	358	\$9,739,815.78	\$461,980.29
Total	279	\$378,798	\$62,616,300	361	\$9,745,039.00	\$462,500.00



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Community:	MAHWAH, TOWNSHIP OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340049

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	138	\$217,383	\$34,721,000	171	\$3,366,584.98	\$162,240.48	
2-4 Family	1	\$346	\$140,000	0	\$0.00	\$0.00	
All Other Residential	27	\$3,011	\$1,188,000	0	\$0.00	\$0.00	
Non Residential	20	\$78,903	\$9,045,600	7	\$350,713.65	\$10,814.67	
Total	186	\$299,643	\$45,094,600	178	\$3,717,297.00	\$173,054.00	

	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	30	\$4,012	\$1,723,000	7	\$29,718.43	\$1,900.00
Non Condo	156	\$295,631	\$43,371,600	171	\$3,687,580.20	\$171,155.15
Total	186	\$299,643	\$45,094,600	178	\$3,717,298.00	\$173,055.00



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Community: MAYWOOD, BOROUGH OF	State: NEW JERSEY
County: BERGEN COUNTY	CID: 340050

	Overview	Occupancy	Zone	Pre/Post FIRM			
		Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family		36	\$52,705	\$7,771,000	22	\$144,641.74	\$15,020.00
2-4 Family		2	\$3,487	\$400,000	5	\$25,637.86	\$3,375.00
All Other Residential		12	\$31,282	\$2,950,300	0	\$0.00	\$0.00
Non Residential		5	\$15,633	\$2,133,100	3	\$47,593.10	\$2,500.00
Total		55	\$103,087	\$13,254,400	30	\$217,871.00	\$20,895.00

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	1	\$502	\$50,300	0	\$0.00	\$0.00
Non Condo	54	\$102,585	\$13,204,100	30	\$217,872.70	\$20,895.00
Total	55	\$103,087	\$13,254,400	30	\$217,872.00	\$20,895.00



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Community:	MIDLAND PARK, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340051

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	9	\$16,104	\$1,915,000	10	\$51,768.87	\$7,170.00	
2-4 Family	2	\$4,260	\$383,000	1	\$8,977.04	\$500.00	
All Other Residential	3	\$6,828	\$1,275,000	0	\$0.00	\$0.00	
Non Residential	11	\$30,002	\$5,077,500	2	\$88,153.98	\$2,781.96	
Total	25	\$57,194	\$8,650,500	13	\$146,899.00	\$10,451.00	

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	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	0	\$0.00	\$0.00
Non Condo	25	\$57,194	\$8,650,500	13	\$146,899.89	\$10,451.96
Total	25	\$57,194	\$8,650,500	13	\$146,899.00	\$10,451.00



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Community:	MONTVALE, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340052

	Policies in Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	37	\$28,878	\$10,095,100	11	\$85,916.86	\$6,105.00
2-4 Family	0	\$0	\$0	1	\$2,039.00	\$200.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	3	\$13,030	\$1,500,000	0	\$0.00	\$0.00
Total	40	\$41,908	\$11,595,100	12	\$87,955.00	\$6,305.00

	Policies in Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	1	\$341	\$140,000	1	\$2,039.00	\$200.00
Non Condo	39	\$41,567	\$11,455,100	11	\$85,916.86	\$6,105.00
Total	40	\$41,908	\$11,595,100	12	\$87,955.00	\$6,305.00



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Community:	MOONACHIE, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340053

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	227	\$354,821	\$47,680,000	165	\$5,189,612.58	\$248,624.75	
2-4 Family	21	\$39,383	\$3,977,600	23	\$1,074,251.08	\$44,384.67	
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00	
Non Residential	42	\$242,403	\$25,752,800	45	\$12,679,334.89	\$307,289.15	
Total	290	\$636,607	\$77,410,400	233	\$18,943,197.00	\$600,297.00	

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	3	\$7,917	\$882,000	5	\$27,820.91	\$1,450.00
Non Condo	287	\$628,690	\$76,528,400	228	\$18,915,377.64	\$598,848.57
Total	290	\$636,607	\$77,410,400	233	\$18,943,197.00	\$600,298.00



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Community:	NEW JERSEY MEADOWLANDS COMMISSION	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340570

Overview	Occupancy	Zone	Pre/Post FIRM
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	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	444	\$587,469	\$79,868,700	309	\$9,587,451.84	\$458,027.26
2-4 Family	182	\$251,239	\$41,616,700	128	\$4,089,706.90	\$190,503.24
All Other Residential	1,039	\$680,066	\$351,974,100	41	\$5,778,313.98	\$162,323.78
Non Residential	679	\$2,393,090	\$351,271,100	245	\$49,194,880.00	\$1,298,229.58
Total	2,344	\$3,911,864	\$824,730,600	723	\$68,650,350.00	\$2,109,082.00

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	1,099	\$711,533	\$381,607,700	48	\$6,075,840.74	\$177,169.08
Non Condo	1,245	\$3,200,331	\$463,122,900	675	\$62,574,511.98	\$1,931,914.78
Total	2,344	\$3,911,864	\$824,730,600	723	\$68,650,351.00	\$2,109,083.00

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Community:	NEW MILFORD, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340054

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	178	\$325,082	\$43,737,900	541	\$19,781,003.26	\$762,002.05
2-4 Family	5	\$9,422	\$1,247,900	26	\$483,282.55	\$22,774.51
All Other Residential	18	\$99,375	\$9,016,600	20	\$434,755.89	\$22,957.22
Non Residential	15	\$27,102	\$4,653,700	23	\$1,945,962.94	\$59,039.30
Total	216	\$460,981	\$58,656,100	610	\$22,625,002.00	\$866,772.00

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	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	9	\$17,216.88	\$1,760.00
Non Condo	216	\$460,981	\$58,656,100	601	\$22,607,787.76	\$865,013.08
Total	216	\$460,981	\$58,656,100	610	\$22,625,003.00	\$866,773.00



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Community:	NORTHVALE, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340056

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	28	\$43,681	\$6,908,000	18	\$308,750.19	\$15,849.58	
2-4 Family	3	\$6,071	\$885,000	0	\$0.00	\$0.00	
All Other Residential	22	\$1,939	\$600,000	0	\$0.00	\$0.00	
Non Residential	43	\$186,533	\$20,580,900	14	\$1,387,630.43	\$40,148.06	
Total	96	\$238,224	\$28,973,900	32	\$1,696,380.00	\$55,997.00	

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	22	\$1,939	\$600,000	0	\$0.00	\$0.00
Non Condo	74	\$236,285	\$28,373,900	32	\$1,696,380.62	\$55,997.64
Total	96	\$238,224	\$28,973,900	32	\$1,696,380.00	\$55,997.00



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Community:	NORWOOD, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340057

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	38	\$60,221	\$10,100,200	9	\$42,518.67	\$4,285.00
2-4 Family	0	\$0	\$0	0	\$0.00	\$0.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	11	\$52,345	\$5,625,000	2	\$55,793.45	\$2,390.00
Total	49	\$112,566	\$15,725,200	11	\$98,311.00	\$6,675.00

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	1	\$1,087	\$210,000	0	\$0.00	\$0.00
Non Condo	48	\$111,479	\$15,515,200	11	\$98,312.12	\$6,675.00
Total	49	\$112,566	\$15,725,200	11	\$98,312.00	\$6,675.00



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Community:	OAKLAND, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	345309

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	207	\$356,636	\$43,882,700	532	\$9,271,863.80	\$423,549.58
2-4 Family	9	\$17,568	\$1,993,900	27	\$230,516.70	\$15,465.00
All Other Residential	1	\$271	\$100,000	1	\$2,391.25	\$220.00
Non Residential	6	\$14,491	\$3,450,000	6	\$293,153.81	\$8,332.67
Total	223	\$388,966	\$49,426,600	566	\$9,797,923.00	\$447,566.00

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	2	\$726	\$450,000	25	\$46,997.42	\$4,320.00
Non Condo	221	\$388,240	\$48,976,600	541	\$9,750,928.14	\$443,247.25
Total	223	\$388,966	\$49,426,600	566	\$9,797,925.00	\$447,567.00



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Community:	OLD TAPPAN, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340059

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	31	\$25,217	\$9,030,000	24	\$527,208.65	\$20,018.81
2-4 Family	0	\$0	\$0	0	\$0.00	\$0.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	0	\$0	\$0	0	\$0.00	\$0.00
Total	31	\$25,217	\$9,030,000	24	\$527,208.00	\$20,018.00

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	1	\$455	\$350,000	1	\$7,844.55	\$380.00
Non Condo	30	\$24,762	\$8,680,000	24	\$527,208.65	\$20,018.81
Total	31	\$25,217	\$9,030,000	25	\$535,052.00	\$20,398.00



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Community:	ORADELL, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340060

Overview	Occupancy	Zone	Pre/Post FIRM
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	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	33	\$14,222	\$10,213,000	12	\$65,192.12	\$5,175.00
2-4 Family	0	\$0	\$0	0	\$0.00	\$0.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	7	\$30,373	\$3,700,000	10	\$750,622.39	\$23,857.43
Total	40	\$44,595	\$13,913,000	22	\$815,814.00	\$29,032.00

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	3	\$3,936.45	\$490.00
Non Condo	40	\$44,595	\$13,913,000	19	\$811,878.06	\$28,542.43
Total	40	\$44,595	\$13,913,000	22	\$815,814.00	\$29,032.00



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Community:	PALISADES PARK, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340061

Overview	Occupancy	Zone	Pre/Post FIRM
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	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	5	\$1,611	\$707,000	5	\$12,653.95	\$1,200.00
2-4 Family	5	\$1,824	\$1,062,000	2	\$24,484.55	\$920.00
All Other Residential	1	\$289	\$108,000	0	\$0.00	\$0.00
Non Residential	5	\$20,605	\$2,450,000	12	\$2,817,764.28	\$62,133.92
Total	16	\$24,329	\$4,327,000	19	\$2,854,901.00	\$64,253.00

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	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	1	\$208	\$42,000	2	\$102,926.82	\$1,190.00
Non Condo	15	\$24,123	\$4,285,000	17	\$2,751,975.98	\$63,063.92
Total	16	\$24,329	\$4,327,000	19	\$2,854,901.00	\$64,253.00



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Community:	PARAMUS, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340082

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	174	\$177,160	\$47,908,200	92	\$910,982.87	\$64,954.97
2-4 Family	4	\$5,002	\$1,085,000	3	\$107,243.22	\$4,290.49
All Other Residential	4	\$1,825	\$867,000	0	\$0.00	\$0.00
Non Residential	82	\$180,400	\$32,403,500	19	\$1,036,650.95	\$35,274.77
Total	244	\$364,387	\$82,263,700	114	\$2,054,875.00	\$104,518.00

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	4	\$4,475	\$750,300	7	\$54,862.31	\$3,460.00
Non Condo	240	\$359,912	\$81,513,400	107	\$2,000,014.73	\$101,060.23
Total	244	\$364,387	\$82,263,700	114	\$2,054,876.00	\$104,520.00



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Community:	PARK RIDGE, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340063

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	38	\$23,317	\$9,216,200	7	\$246,593.03	\$8,737.77	
2-4 Family	2	\$1,928	\$292,000	0	\$0.00	\$0.00	
All Other Residential	17	\$21,466	\$2,256,100	0	\$0.00	\$0.00	
Non Residential	10	\$28,789	\$3,721,800	3	\$118,523.32	\$4,490.27	
Total	67	\$75,500	\$15,486,100	10	\$365,116.00	\$13,227.00	

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	25	\$29,534	\$4,079,200	1	\$1,925.00	\$200.00
Non Condo	42	\$45,966	\$11,406,900	9	\$363,191.35	\$13,028.04
Total	67	\$75,500	\$15,486,100	10	\$365,116.00	\$13,228.00



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Insurance Occupancy

As of 12/31/2014

Community:	RAMSEY, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340064

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	97	\$121,324	\$24,957,300	10	\$58,957.04	\$6,080.00
2-4 Family	9	\$10,967	\$1,618,600	1	\$1,058.18	\$600.00
All Other Residential	15	\$6,678	\$1,144,800	0	\$0.00	\$0.00
Non Residential	16	\$30,955	\$6,232,400	2	\$63,753.17	\$2,254.41
Total	137	\$169,924	\$33,953,100	13	\$123,768.00	\$8,934.00

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	23	\$10,638	\$1,781,400	2	\$10,135.72	\$550.00
Non Condo	114	\$159,286	\$32,171,700	11	\$113,632.67	\$8,384.41
Total	137	\$169,924	\$33,953,100	13	\$123,767.00	\$8,934.00



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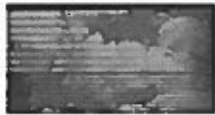
Insurance Occupancy

As of 12/31/2014

Community:	RIDGEFIELD PARK, VILLAGE OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340066

	Overview	Occupancy	Zone	Pre/Post FIRM			
		Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family		81	\$153,816	\$16,843,100	124	\$1,178,180.21	\$104,416.89
2-4 Family		26	\$49,145	\$6,800,300	39	\$467,847.77	\$37,620.00
All Other Residential		140	\$85,858	\$22,981,400	7	\$477,267.29	\$16,592.22
Non Residential		26	\$95,860	\$8,231,400	15	\$933,227.11	\$32,638.83
Total		273	\$384,679	\$54,856,200	185	\$3,056,521.00	\$191,266.00

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	133	\$61,534	\$20,757,000	5	\$7,276.21	\$1,395.00
Non Condo	140	\$323,145	\$34,099,200	180	\$3,049,246.17	\$189,872.94
Total	273	\$384,679	\$54,856,200	185	\$3,056,522.00	\$191,267.00



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As of 12/31/2014

Community:	RIDGEFIELD, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340065

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	68	\$110,814	\$16,427,400	23	\$154,303.10	\$12,830.00	
2-4 Family	23	\$34,213	\$5,886,400	15	\$139,055.50	\$10,520.00	
All Other Residential	4	\$17,408	\$2,010,000	0	\$0.00	\$0.00	
Non Residential	21	\$71,371	\$10,259,500	14	\$597,687.05	\$20,498.15	
Total	116	\$233,806	\$34,583,300	52	\$891,045.00	\$43,848.00	

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	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	9	\$44,477.95	\$2,210.00
Non Condo	116	\$233,806	\$34,583,300	43	\$846,567.70	\$41,638.15
Total	116	\$233,806	\$34,583,300	52	\$891,044.00	\$43,848.00



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Community:	RIDGEWOOD, VILLAGE OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340067

Overview	Occupancy	Zone	Pre/Post FIRM			
	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	338	\$559,844	\$85,747,000	296	\$4,349,953.48	\$248,890.43
2-4 Family	3	\$6,367	\$773,800	2	\$12,290.81	\$775.00
All Other Residential	1	\$5,141	\$500,000	1	\$38,064.92	\$1,400.00
Non Residential	12	\$74,416	\$7,185,800	9	\$689,130.90	\$21,500.23
Total	354	\$645,768	\$94,206,600	308	\$5,089,437.00	\$272,565.00

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	2	\$1,615	\$449,600	19	\$86,578.26	\$5,220.00
Non Condo	352	\$644,153	\$93,756,800	289	\$5,002,861.85	\$267,345.66
Total	354	\$645,768	\$94,206,600	308	\$5,089,439.00	\$272,565.00



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Community:	RIVER EDGE, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340068

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	39	\$25,731	\$9,190,200	29	\$282,875.08	\$19,354.05	
2-4 Family	0	\$0	\$0	1	\$6,178.89	\$650.00	
All Other Residential	6	\$18,954	\$1,500,000	7	\$467,284.06	\$17,305.30	
Non Residential	19	\$61,334	\$7,704,300	34	\$2,776,314.99	\$84,006.51	
Total	64	\$104,019	\$18,394,500	71	\$3,532,651.00	\$121,315.00	

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	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	1	\$264	\$70,000	7	\$15,458.88	\$1,310.00
Non Condo	63	\$103,755	\$18,324,500	64	\$3,517,193.94	\$120,005.86
Total	64	\$104,019	\$18,394,500	71	\$3,532,651.00	\$121,315.00



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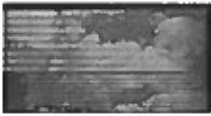
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Community:	RIVER VALE, TOWNSHIP OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340069

Overview	Occupancy	Zone	Pre/Post FIRM			
	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	74	\$76,307	\$19,956,400	95	\$3,099,952.81	\$111,489.34
2-4 Family	0	\$0	\$0	0	\$0.00	\$0.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	1	\$5,336	\$600,000	1	\$7,594.24	\$925.00
Total	75	\$81,643	\$20,556,400	96	\$3,107,546.00	\$112,414.00

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	1	\$310	\$105,000	2	\$3,820.68	\$420.00
Non Condo	74	\$81,333	\$20,451,400	94	\$3,103,626.37	\$111,994.34
Total	75	\$81,643	\$20,556,400	96	\$3,107,546.00	\$112,414.00



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Community:	ROCHELLE PARK, TOWNSHIP OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340070

Overview	Occupancy	Zone	Pra/Post FIRM						
				Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
	Single Family			339	\$574,265	\$78,735,700	640	\$19,921,074.29	\$816,651.27
	2-4 Family			2	\$2,795	\$578,500	3	\$15,819.35	\$1,950.00
	All Other Residential			12	\$14,715	\$15,227,100	6	\$278,342.46	\$9,594.46
	Non Residential			28	\$93,064	\$12,817,100	25	\$3,484,938.87	\$89,571.81
	Total			381	\$684,839	\$107,358,400	674	\$23,700,173.00	\$917,766.00

	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	7	\$7,552	\$13,910,500	8	\$53,361.82	\$2,640.00
Non Condo	374	\$677,287	\$93,447,900	666	\$23,646,813.15	\$915,127.54
Total	381	\$684,839	\$107,358,400	674	\$23,700,174.00	\$917,767.00



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Community:	ROCKLEIGH, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340071

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	4	\$9,979	\$1,200,000	1	\$6,550.60	\$800.00
2-4 Family	0	\$0	\$0	0	\$0.00	\$0.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	3	\$32,464	\$2,500,000	1	\$185,091.74	\$5,032.82
Total	7	\$42,443	\$3,700,000	2	\$191,641.00	\$5,832.00

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	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	0	\$0.00	\$0.00
Non Condo	7	\$42,443	\$3,700,000	2	\$191,642.34	\$5,832.82
Total	7	\$42,443	\$3,700,000	2	\$191,642.00	\$5,832.00



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Insurance Occupancy

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Community:	RUTHERFORD, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340072

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	112	\$159,451	\$28,269,000	169	\$3,333,438.67	\$174,994.62	
2-4 Family	12	\$18,563	\$2,494,900	30	\$603,724.77	\$32,133.33	
All Other Residential	41	\$20,352	\$5,710,900	13	\$415,484.48	\$16,815.00	
Non Residential	15	\$36,063	\$4,570,000	3	\$1,500,000.00	\$36,000.00	
Total	180	\$234,429	\$41,044,800	215	\$5,852,644.00	\$259,942.00	

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	34	\$11,156	\$5,581,000	13	\$229,590.83	\$11,050.00
Non Condo	146	\$223,273	\$35,463,800	202	\$5,623,055.09	\$248,892.95
Total	180	\$234,429	\$41,044,800	215	\$5,852,645.00	\$259,942.00



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Community:	SADDLE BROOK, TOWNSHIP OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340074

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	207	\$346,068	\$52,283,300	253	\$5,234,246.51	\$257,772.81	
2-4 Family	50	\$75,323	\$10,400,400	65	\$1,630,416.67	\$76,961.32	
All Other Residential	47	\$49,549	\$8,626,900	1	\$41,303.00	\$1,587.00	
Non Residential	30	\$120,795	\$14,921,600	14	\$2,169,684.40	\$56,798.08	
Total	334	\$591,735	\$86,234,200	333	\$9,075,649.00	\$393,118.00	

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	46	\$19,622	\$6,985,400	3	\$9,911.75	\$670.00
Non Condo	288	\$572,113	\$79,248,800	330	\$9,065,738.83	\$392,449.21
Total	334	\$591,735	\$86,234,200	333	\$9,075,649.00	\$393,119.00



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Community:	SADDLE RIVER, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340073

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	31	\$33,710	\$9,690,500	37	\$371,754.38	\$21,925.00	
2-4 Family	0	\$0	\$0	0	\$0.00	\$0.00	
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00	
Non Residential	11	\$55,713	\$4,530,800	23	\$238,856.64	\$17,600.00	
Total	42	\$89,423	\$14,221,300	60	\$610,610.00	\$39,525.00	

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	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	10	\$27,688.58	\$2,380.00
Non Condo	42	\$89,423	\$14,221,300	50	\$582,922.44	\$37,145.00
Total	42	\$89,423	\$14,221,300	60	\$610,610.00	\$39,525.00



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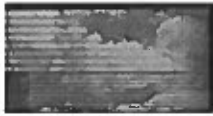
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Community:	SOUTH HACKENSACK, TOWNSHIP OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340515

Overview	Occupancy	Zone	Pra/Post FIRM				
	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	13	\$28,936	\$3,174,200	18	\$404,471.45	\$19,690.48	
2-4 Family	8	\$8,786	\$2,172,000	7	\$136,383.69	\$6,745.00	
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00	
Non Residential	42	\$86,680	\$10,084,100	18	\$1,155,196.48	\$34,906.73	
Total	63	\$124,402	\$15,430,300	43	\$1,696,050.00	\$61,341.00	

	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Condo	0	\$0	\$0	2	\$3,622.33	\$400.00	
Non Condo	63	\$124,402	\$15,430,300	41	\$1,692,429.29	\$60,942.21	
Total	63	\$124,402	\$15,430,300	43	\$1,696,051.00	\$61,342.00	



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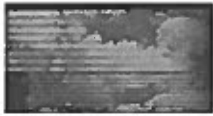
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County:	BERGEN COUNTY	CID:	340075

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	140	\$80,272	\$38,758,200	53	\$369,611.84	\$38,730.00	
2-4 Family	1	\$460	\$350,000	2	\$24,744.91	\$1,500.00	
All Other Residential	29	\$10,579	\$6,760,000	2	\$8,459.67	\$720.00	
Non Residential	9	\$40,149	\$4,200,000	4	\$47,798.88	\$2,695.00	
Total	179	\$131,460	\$50,068,200	61	\$450,612.00	\$43,645.00	

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Condo	26	\$7,988	\$6,163,300	3	\$5,963.00	\$610.00	
Non Condo	153	\$123,472	\$43,904,900	58	\$444,652.30	\$43,035.00	
Total	179	\$131,460	\$50,068,200	61	\$450,615.00	\$43,645.00	

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Community:	TENAFLY, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340076

	Overview	Occupancy	Zone	Pre/Post FIRM			
		Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family		66	\$48,391	\$21,168,900	22	\$106,350.12	\$12,275.00
2-4 Family		11	\$5,007	\$2,451,300	0	\$0.00	\$0.00
All Other Residential		1	\$981	\$91,000	0	\$0.00	\$0.00
Non Residential		1	\$704	\$55,000	2	\$8,018.25	\$925.00
Total		79	\$53,083	\$23,766,200	24	\$114,368.00	\$13,200.00

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	2	\$1,390	\$441,000	1	\$700.00	\$130.00
Non Condo	77	\$51,693	\$23,325,200	23	\$113,668.37	\$13,070.00
Total	79	\$53,083	\$23,766,200	24	\$114,368.00	\$13,200.00



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Community:	TETERBORO, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340537

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	0	\$0	\$0	0	\$0.00	\$0.00	
2-4 Family	1	\$414	\$350,000	0	\$0.00	\$0.00	
All Other Residential	1	\$1,853	\$250,000	0	\$0.00	\$0.00	
Non Residential	4	\$14,322	\$3,400,000	1	\$404,804.86	\$9,552.56	
Total	6	\$16,589	\$4,000,000	1	\$404,804.00	\$9,552.00	

	Policies in Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	1	\$870.00	\$150.00
Non Condo	6	\$16,589	\$4,000,000	1	\$404,804.86	\$9,552.56
Total	6	\$16,589	\$4,000,000	2	\$405,674.00	\$9,702.00



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Community:	UPPER SADDLE RIVER, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340077

Overview	Occupancy	Zone	Pre/Post FIRM			
	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	74	\$69,002	\$22,510,400	31	\$308,657.75	\$22,526.71
2-4 Family	0	\$0	\$0	0	\$0.00	\$0.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	2	\$842	\$80,000	3	\$13,810.35	\$1,625.00
Total	76	\$69,844	\$22,590,400	34	\$322,467.00	\$24,151.00

	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	5	\$22,380.28	\$1,310.00
Non Condo	76	\$69,844	\$22,590,400	29	\$300,087.84	\$22,841.71
Total	76	\$69,844	\$22,590,400	34	\$322,467.00	\$24,151.00



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Community:	WALDWICK, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340078

	Overview	Occupancy	Zone	Pre/Post FIRM			
		Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family		29	\$29,389	\$8,069,400	19	\$476,478.23	\$20,653.38
2-4 Family		2	\$1,136	\$700,000	1	\$3,359.38	\$350.00
All Other Residential		0	\$0	\$0	0	\$0.00	\$0.00
Non Residential		1	\$582	\$500,000	0	\$0.00	\$0.00
Total		32	\$31,087	\$9,269,400	20	\$479,837.00	\$21,003.00

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	Policies In Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	1	\$409	\$350,000	2	\$4,047.88	\$350.00
Non Condo	31	\$30,678	\$8,919,400	18	\$475,789.73	\$20,653.38
Total	32	\$31,087	\$9,269,400	20	\$479,836.00	\$21,003.00



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Insurance Occupancy

As of 12/31/2014

Community:	WALLINGTON, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340079

Overview	Occupancy	Zone	Pre/Post FIRM
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	Policies in Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	125	\$238,697	\$24,262,600	136	\$1,422,320.86	\$112,947.00
2-4 Family	302	\$603,126	\$60,308,000	333	\$5,764,737.02	\$352,205.94
All Other Residential	41	\$68,211	\$13,784,100	24	\$1,022,444.08	\$37,187.52
Non Residential	48	\$141,555	\$14,219,300	42	\$1,842,622.61	\$68,089.73
Total	516	\$1,051,589	\$112,574,000	535	\$10,052,123.00	\$568,428.00

	Policies in Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	22	\$27,098	\$9,542,500	3	\$23,201.94	\$1,615.00
Non Condo	494	\$1,024,491	\$103,031,500	532	\$10,028,922.63	\$566,816.09
Total	516	\$1,051,589	\$112,574,000	535	\$10,052,123.00	\$568,431.00

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Community:	WASHINGTON, TOWNSHIP OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340080

	Policies in Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	43	\$46,395	\$9,806,700	36	\$412,466.84	\$32,768.43
2-4 Family	0	\$0	\$0	0	\$0.00	\$0.00
All Other Residential	1	\$365	\$250,000	0	\$0.00	\$0.00
Non Residential	1	\$1,395	\$1,000,000	0	\$0.00	\$0.00
Total	45	\$48,155	\$11,056,700	36	\$412,466.00	\$32,768.00

	Policies in Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	6	\$4,353	\$1,270,000	0	\$0.00	\$0.00
Non Condo	39	\$43,802	\$9,786,700	36	\$412,466.84	\$32,768.43
Total	45	\$48,155	\$11,056,700	36	\$412,466.00	\$32,768.00



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As of 12/31/2014

Community:	WESTWOOD, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340081

Overview	Occupancy	Zone	Pre/Post FIRM				
	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense	
Single Family	192	\$357,575	\$46,740,700	501	\$10,494,578.85	\$507,696.70	
2-4 Family	6	\$10,026	\$1,668,900	18	\$239,713.64	\$15,844.03	
All Other Residential	124	\$25,603	\$23,340,200	6	\$1,789,054.03	\$48,348.39	
Non Residential	15	\$56,852	\$5,079,000	40	\$2,533,125.91	\$76,528.97	
Total	337	\$450,056	\$76,828,800	565	\$15,056,470.00	\$648,416.00	

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	Policies In Force	Premium	Insurance In Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	122	\$17,294	\$22,140,200	25	\$1,616,053.90	\$47,328.39
Non Condo	215	\$432,762	\$54,688,600	540	\$13,440,418.53	\$601,089.70
Total	337	\$450,056	\$76,828,800	565	\$15,056,471.00	\$648,417.00



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Community:	WOOD-RIDGE, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340083

Overview	Occupancy	Zone	Pre/Post FIRM
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	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	20	\$25,431	\$5,311,500	21	\$270,799.70	\$20,980.98
2-4 Family	7	\$10,173	\$1,832,300	3	\$63,810.10	\$3,630.00
All Other Residential	1	\$701	\$350,000	1	\$9,042.27	\$1,100.00
Non Residential	10	\$33,314	\$6,215,100	2	\$70,821.86	\$4,640.00
Total	38	\$69,619	\$13,708,900	27	\$414,472.00	\$30,350.00

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	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	5	\$3,434	\$1,468,500	4	\$21,669.33	\$3,110.00
Non Condo	33	\$66,185	\$12,240,400	23	\$392,804.60	\$27,240.98
Total	38	\$69,619	\$13,708,900	27	\$414,473.00	\$30,350.00



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Community:	WOODCLIFF LAKE, BOROUGH OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340082

Overview	Occupancy	Zone	Pre/Post FIRM
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	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	48	\$44,998	\$13,172,000	16	\$221,673.30	\$13,719.28
2-4 Family	0	\$0	\$0	0	\$0.00	\$0.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	2	\$1,659	\$200,000	0	\$0.00	\$0.00
Total	50	\$46,657	\$13,372,000	16	\$221,673.00	\$13,719.00

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	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	0	\$0.00	\$0.00
Non Condo	50	\$46,657	\$13,372,000	16	\$221,673.30	\$13,719.28
Total	50	\$46,657	\$13,372,000	16	\$221,673.00	\$13,719.00



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Community:	WYCKOFF, TOWNSHIP OF	State:	NEW JERSEY
County:	BERGEN COUNTY	CID:	340084

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Single Family	58	\$52,663	\$16,138,500	22	\$239,075.74	\$13,987.04
2-4 Family	2	\$889	\$630,000	0	\$0.00	\$0.00
All Other Residential	0	\$0	\$0	0	\$0.00	\$0.00
Non Residential	0	\$0	\$0	0	\$0.00	\$0.00
Total	60	\$53,552	\$16,768,500	22	\$239,075.00	\$13,987.00

	Policies in Force	Premium	Insurance in Force	Number of Closed Paid Losses	\$ of Closed Paid Losses	Adjustment Expense
Condo	0	\$0	\$0	1	\$747.00	\$110.00
Non Condo	60	\$53,552	\$16,768,500	21	\$238,328.74	\$13,877.04
Total	60	\$53,552	\$16,768,500	22	\$239,075.00	\$13,987.00