Appendix 10: Borough of New Providence

This appendix is part of the 2016 Union County Hazard Mitigation Plan (HMP) update, and includes only jurisdiction-specific information about the Borough of New Providence, which is one of the 20 municipalities within Union County that is participating in the plan update. Union County led the planning process and outreach for this update. For a detailed description of the planning process and the public outreach efforts for this update, see Section 3 of the 2016 HMP.

1. Planning Process and Participation

The County formed a Steering Committee, which was responsible for key decisions during the plan update. This committee sent a letter to the Mayor of each municipality within the County. The Mayors and local officials selected a single individual to represent the town in the broader process. This person was the point of contact for the plan update, but worked with other municipal employees, consultants, volunteers, and other stakeholders throughout the planning process. This collection of participants, considered the local planning committee, is listed below. The committee was responsible for various decisions that informed the development of this appendix, including: prioritizing the natural hazards that can affect the community, reviewing and prioritizing the mitigation actions that are included in Table 10-1, and informing community leaders about the status of the County mitigation plan update, including this appendix

The Borough of New Providence Planning Committee evaluated and identified the hazards of concern, completed the request for information (RFI), reviewed the plan documents and vulnerability assessment, identified local stakeholders for outreach, and worked collectively to update the mitigation strategy. In order to complete the update process New Providence attended the kickoff meeting held by Princeton Hydro in May 2014. To further the plan development, the Planning Committee met with Princeton Hydro to review the plan documents and revise the mitigation strategy in a workshop format on July 23rd, 2014.

Table 10-1
Local Planning Committee (Source: Borough of New Providence**)**

Name	Title	Organization
Doug Marvin	Borough Administrator	Borough of New Providence
James Johnston	Public Works Manager	Borough of New Providence
Keith Lynch	Construction Official	Borough of New Providence
Anthony Buccelli, Jr.	Chief of Police	Borough of New Providence
Andrew Hipolt	Borough Engineer	Maser Consulting, P.A.
Brett Peskin	Project Manager	Maser Consulting, P.A.

2. Community Profile

The Borough of New Providence has a total area of 3.7 square miles and is located in the western region of Union County, New Jersey.

As of 2010, the population was estimated at 12,039. This is a 2.22 percent increase from the 2000 population, which was estimated at 11,907. Figure 10-1 is a map of the Borough of New Providence. See Section 2 of the 2016 Plan update for a map of Union County.

The area of New Providence was first settled by the brother to King Charles II, the Duke of York at the time, in 1664. The first colonists were Puritans who arrived years later in 1720. Its name was born from an accident in which the balcony of the local Presbyterian Church collapsed in 1759, but injured no one. The incident was viewed as divine act of "providence", which led to the area being called "New Providence". At the time, the town included present-day Summit and Berkeley Heights. In 1869 Summit seceded, and thirty years later the Borough of New Providence was formally incorporated. The Borough of New Providence was formally incorporated on March 14th, 1899.

The Borough is governed by an elected mayor and six councilpersons. The mayor serves a four year term. Each of the councilpersons is elected at-large, and serves a three-year term. The seats are staggered so two positions are elected each year.

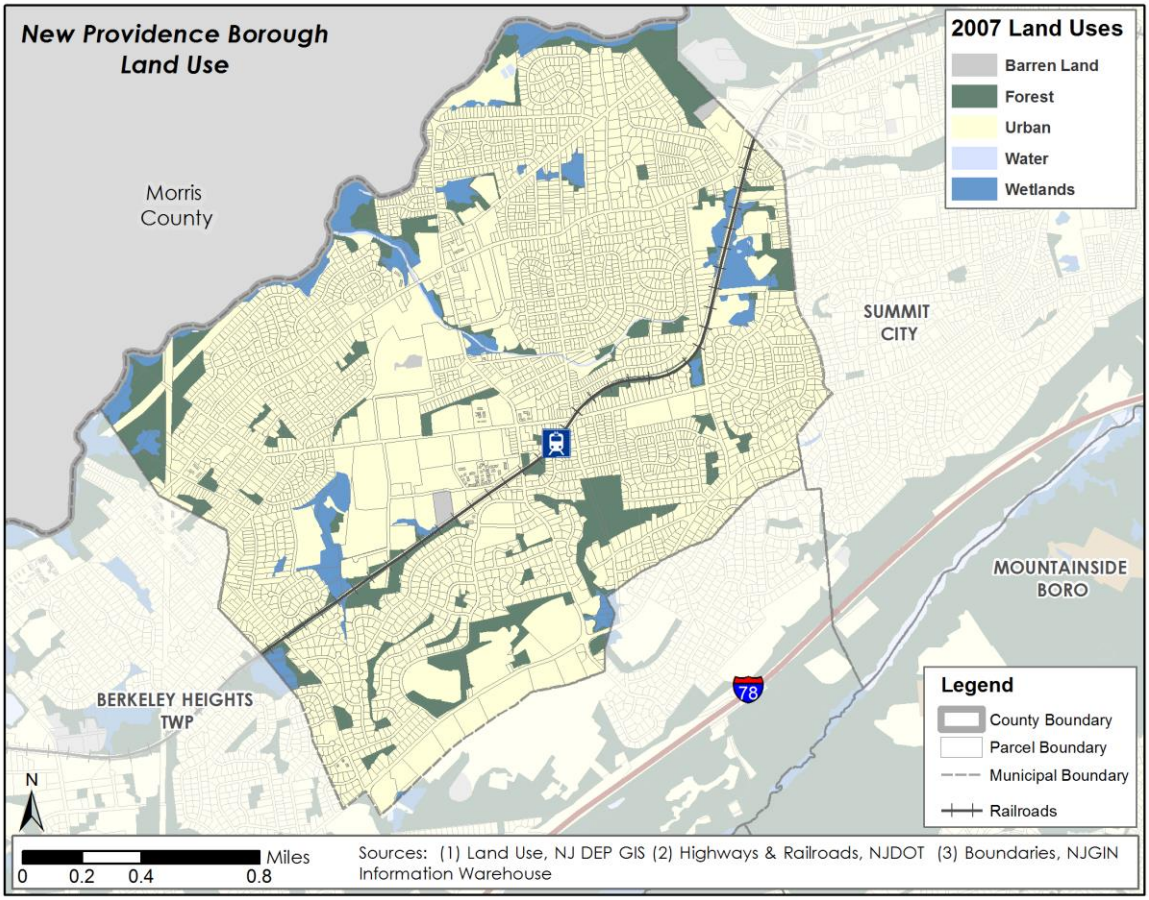
2.1 Land Use and Development

New Providence is a community of mixed use development, with nearly 83.45 percent of its 3.7 square miles of land area classified as urban/developed. Over 90 percent of the parcels within New Providence are classified as residential, based on tax assessment data. Between 2004 and 2012, 151 building permits were issued for residential homes within the Borough. This is 1.84 percent of the total building permits issued for Union County during this time period. Almost 59% percent of these permits were for 1- and 2-family homes. New Providence has a population density of 3289 people per square mile. The 2010 census estimates that 23.4 percent of the housing within the Borough was renter-occupied, lower than the County average of 30.5 percent renter-occupied properties.

Table 10-2
Land Use/Land Cover Trends (*NJDEP GIS, 2007*)

Land Cover Class	2002 (*acres*)	2007 (*acres*)	Percent Change	Percent of Total Land[1]
Agriculture	-	-	-	-
Barren Land	2.98	7.95	166.33%	0.33%
Forest	248.37	243.56	-1.94%	10.26%
Urban	1980.85	1981.35	0.02%	83.45%
Water	21.69	21.89	0.93%	0.92%
Wetlands	120.33	119.48	-0.71%	5.03%

Figure 10-1
Land Use/Land Cover in Borough *NJDEP GIS, 2007*)



[1] Uses the 2007 land cover values

3. Hazard Identification and Risk Assessment

This section of the New Providence Borough mitigation plan appendix describes the natural hazards and risks that can affect the community. It should be noted that -- in accordance with FEMA requirements -- only the hazards with aspects that are unique to the community are included in detail in this appendix.

3.1 Background and Hazard Rankings

Like all the other jurisdictions in Union County, the Borough of New Providence is potentially subject to the effects of all the hazards that are considered in this mitigation plan. However, the majority of these hazards have minimal impacts on the area, and are discussed in detail in the County part of the mitigation plan. FEMA mitigation planning guidance requires that County mitigation plans include a risk assessment section that "assess[es] each jurisdiction's risks where there vary from the risks facing the entire planning area" (44CFR 201.6 (c) (2) (iii). Because the Union County HMP update includes separate appendices for each jurisdiction, this requirement is met in the appendices, while risks that affect the entire County uniformly are discussed in the County part of the HMP.

One of the first steps in developing jurisdictional appendices was for participating municipalities to review and prioritize the hazards that can affect them. This was done based on how often a hazard has occurred, how significant effects have been in the past, the difficulty and cost of recovering from such events. Jurisdictions ranked the list of hazards as either high, medium, low, or no concern.

Table 10-3 shows New Providence's hazard rankings. The level of discussion and detail about specific hazards in this section are based on these rankings. Hazards that are ranked *high* include the most detail, and to the extent possible include probabilistic assessments of risk, i.e. likely future damages in the community based on the likelihood of occurrence. Hazards that are ranked *medium* have less detail and may in some cases refer to the main part of the county mitigation plan; they usually do not have probabilistic risk assessments, although potential future losses are discussed based on best available data. Hazards ranked *low*

Table 10-3
Borough of New Providence Hazard Identification and Prioritization

Hazard	Priority
Dam failure	High
Erosion	High
Extreme temperature – cold	Med
Extreme temperature – heat	Med
Flood	Med
Severe storm – winter weather	Med
Drought	Low
Earthquake / Geological	Low
Hail	Low
Hazmat release – fixed site	Low
Hazmat release – transportation	Low
High wind – tornado	Low
Ice storm	Low
Landslide (non-seismic)	Low
Severe storm – lightning	Low
Storm surge	Low
Straight-line winds	Low
Wildfire	Low

**Only the hazards ranked high and medium are analyzed in this appendix*

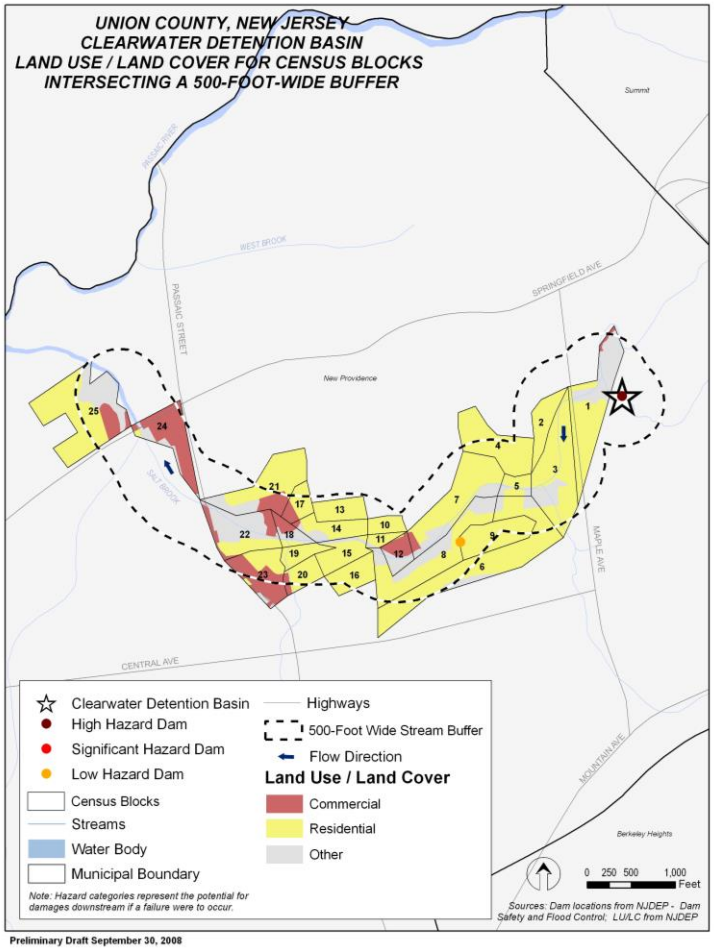
and *none* are not addressed in this jurisdictional appendix because they are discussed in the County part of the HMP, and there are no significant differences in risk between the County and the municipality.

3.2 Dam Failure

3.2.1 Type, Location, and Extent

Figure 10-2 is map of Clearwater Detention Dam located along the Salt Brook in New Providence Borough. As indicated in the County Section of the Plan, Clearwater Detention Dam is listed as one of the three high hazard dams. The map identifies the land use/land cover for the census blocks intersecting a 500- foot-wide stream buffer.

Figure 10-2
Clearwater Detention Dam
Land Use/Land Cover for Census Blocks Intersecting a 500 Foot-Wide Buffer
(Source: NJDEP)



3.2.2 Previous Occurrences and the Probability of Future Occurrences

There is no record of the Clearwater Detention Dam every having failed. This does not ensure that no event will occur in the future, but it is impossible to quantify the probability of such an event. The probability of dam failure increases in situations when the impoundment is not routinely maintained, reaches the end of its design-life, or is operated outside of its designed intention.

3.2.3 Impacts and Vulnerabilities to Dam Failure

The primary land use along the stream below the dam is residential parcels. Table 10-4 identifies the population and housing units for each of the 25 census blocks included on Figure 10-2.

Table 10-4
Land Use/Land Cover (in acres) for Selected Census Blocks Intersecting the 500-Foot-Wide Stream Buffer Downstream of Clearwater Detention Dam
(Source: NJDEP – Land Use Land Cover)

Map ID	Block Number	Population	Housing Units	Commercial (Acres)	Other (Acres)	Residential (Acres)	Grand Total
1	8019	22	9	0.22	4.44	6.60	11.27
2	8017	32	12	0	0	3.45	3.45
3	8018	38	13	0	1.72	9.88	11.60
4	8015	78	26	0	0	8.06	8.06
5	8020	14	5	0	0.50	1.40	1.90
6	8040	111	43	0	1.73	14.18	15.91
7	8021	57	17	0.41	2.14	8.61	11.16
8	8022	82	30	0	4.08	7.41	11.49
9	8041	60	18	0	0	5.80	5.80
10	8025	34	12	0	0	1.81	1.81
11	8024	1	1	0.02	0.09	0.97	1.08
12	8023	0	0	1.30	1.10	0.08	2.48
13	8029	39	15	0	0	3.24	3.24
14	8026	31	12	0.12	0.68	3.15	3.95
15	8030	48	19	0	0.44	3.36	3.79
16	8037	37	11	0	0	3.57	3.57
17	8027	22	7	0.65	0	1.79	2.45
18	8032	0	0	0.75	0.94	0.34	2.03
19	8031	13	6	0	0.02	2.05	2.07
20	8035	22	9	0.39	0	2.37	2.75
21	8008	214	62	1.42	1.68	6.54	9.64
22	8033	21	12	1.57	4.57	2.18	8.33
23	8034	28	12	3.99	0.22	2.18	6.39
24	6000	0	0	5.60	0.87	0.15	6.62
25	7002	114	42	1.62	4.00	10.14	15.76
Total	**----**	**1,118**	**393**	**18.06**	**29.21**	**109.30**	**156.57**

There are a total of 1,118 residents and 393 housing units within the selected census blocks located along the 500-foot-wide stream buffer downstream of Clearwater Detention Dam. Table 10-4 also identifies the number of acres within each of the 25 census blocks for the three land use categories identified on the Green Street Dam map (Figure 7.3.6-2). The table shows that the residential land use category has the highest acreage within the selected census blocks.

3.3 Erosion

3.3.1 Type, Location and Extent

The Borough of New Providence has ranked erosion, meaning riverine and not coastal erosion, as a high hazard because of its imminent concern within the municipality. All portions of Salt Brook that have not been channelized and lined with concrete are subject to erosion. Specifically this includes

- Salt Brook from Pine Grove Avenue to Maple Terrace.
- Salt Brook from South Street to Passaic River.
- South Fork Salt Brook from headwaters to Salt Brook.
- West Brook from Pitney Avenue to Passaic River
- West Brook Tributary from Springfield Avenue to West Brook
- Passaic River from Passaic Street to Charnwood Road.
- Passaic River along Charnwood Road from terminus to Gardon Place and Oxbow Drive

3.3.2 Previous Occurrences and the Probability of Future Occurrences

Riverine erosion is a naturally occurring process within a streamshed and therefore will continue to happen within the Borough. There is not a record of previous occurrences. Erosion will continue to be a potential hazard within streamsheds where banks have become unstable from increased runoff and flows.

3.3.3 Impacts and Vulnerability to Erosion

Albeit erosion is listed as a hazard of high concern on municipal level, there is limited information on actual riverine erosion hazard. More information is needed to perform proper risk assessment of erosion hazard in New Providence. The erosion can result in subsidence of land and property, which may result in damage. However, it also causes deposition of sediment and debris that can constrict flows and exacerbate flooding.

3.6 Extreme Temperature - Heat

3.6.1 Type, Location, and Extent

Heat risks are discussed in detail in Section 4 of this mitigation plan. There are no significant differences in the type, location or extent of this hazard between the County and New Providence Borough, and

there are no aspects of the hazard that are unique to this jurisdiction.

3.6.2 Previous Occurrences and the Probability of Future Floods

Previous **occurrences** of the heat hazard are discussed in detail in the County portion of this hazard mitigation plan (see Section 4), and for reasons of brevity are not repeated here. There are no meaningful differences between the County as a whole versus New Providence Borough with regard to occurrences or the **future probability** of this hazard.

3.6.2 Heat Impacts and Community Vulnerabilities to the Hazard

Heat **impacts** in New Providence Borough are substantially similar to the County as a whole. There are various potential impacts from this hazard, including stresses on electrical systems, damage to infrastructure such as roads, and illness/death. There are no reliable data related to the first two effects, but there is some information related to deaths from heat-related hazards from a U.S. Centers for Disease Control report (National Health Statistics Reports, *Deaths Attributed to Heat, Cold and Other Weather Events in the United States, 2006-2010.*). As explained in the County portion of this mitigation plan, national-level data about such deaths were scaled to the local level by population.

Table 10-5
Heat-related Risks, New Providence Borough
Annual, 50- and 100-year Planning Horizons

Horizon	Damages
Annual risk	$117,504
50-year risk	$1,621,557
100-year risk	$1,676,784

3.2 Flood Hazard

3.2.1 Type, Location and Extent

As shown in Figure 10-2 below, the New Providence Borough has four significant areas of Special Flood Hazard Area (100-year floodplain). One of them is along the Passaic River itself, along the low-lying floodplain that extends across almost entire northern jurisdictional boundary. The other two areas are the Central Branch and the South Fork of Salt Brook, tributaries of Salt Brook. Salt Brook flows from the eastern side of the community, intersects the ConRail tracks and flowing through the central part of Borough eventually joins the Passaic River. The floodplains in the lower reach of Salt Brook are inundated by the backflow from Passaic River floods; on the other side, the upper reach of the Salt Brook and its two tributaries exhibit flooding that is contributed to by inadequate interior drainage and seemingly insufficient capacity of culverts under the railroad. The fourth area of flooding is really attributed to the localized flooding throughout the community. A good example is an unnamed, previously unmapped stream, West Brook, that flows parallel to Walton Avenue in New Providence. It

has properties that are flooding, and one of them is a repetitive loss property on Pitney Avenue. There are significant concentrations of NFIP insurance claims (including properties classified as repetitive loss (see below) along the banks of all four of these sources.

The number of flood insurance claims (84) and the average amount of the claims ($4,171) in New Providence Borough suggests a relatively low to moderate level of vulnerability to floods in this community, in terms of both the numbers of claims versus the overall number of parcels (4,007) and the presumed severity of flooding based on the claims amounts.

One of the best resources for determining flood risk in a jurisdiction is Flood Insurance Rate Maps (FIRMs), which are produced by FEMA. The FIRM is the official map of a community on which FEMA has delineated both the special flood hazard areas (1% annual chance of flooding) and the risk premium zones applicable to the jurisdiction.[2] The effective FIRM date for Union County is September 20th, 2006. An enhanced version of the FIRM is shown in Figure 10-2.

Current FEMA guidance uses the term *extent* as analogous to potential severity. Compared to most other jurisdictions in Union County, New Providence Borough has a relatively small area of floodplain, but numerous flooding sources. Although it is difficult to deduce potential severity accurately, it is safe to assume that the extent of flooding in New Providence Borough is low to moderate; in more severe events such as tropical cyclones and nor'easters some areas along the northern Borough boundary can expect to have more severe flooding, but that would be predominantly in function of Passaic River. Some additional, more severe flooding may also occur along the three afore mentioned streams along the railroad tracks.

Table X-X shows the number of parcels in The New Providence Borough with at least 60% of their area in the 100-year (1% annual) and 500-year (0.2% annual) floodplain. Although these figures offer some insight into the flood hazard in this jurisdiction, they are not particularly reliable as a risk indicator because in many cases structures and infrastructure (where the risk-producing impacts occur) are not located in the specific areas that are in the floodplain.

Table 10-6:
Floodprone Parcels

Flood hazard area	Number of Parcels
100-year (1%) floodplain	149
500-year (0.2%) floodplain	0

[2] FEMA online - Floodplain Management. Flood Insurance Rate Map (FIRM) definition

3.2.2 Previous Occurrences and the Probability of Future Floods

Minor flooding occurs in the New Providence Borough at least annually, although the severity of these frequent events is minimal. As discussed in the main (County) section of the mitigation plan, more significant events like tropical cyclones and nor-easters occur every few years (section citation to main plan), and can result in significant flooding. Notwithstanding the potential effects of climate change on weather patterns, the Borough can probably expect to experience some level of flooding every year or two, with more significant events happening every five to ten years on average. The main (County) part of this HMP discusses past occurrences in detail, and that history and statistics are generally the same as for New Providence Borough.

3.2.3 Flood Impacts and Vulnerability to Flooding

As discussed elsewhere, flood impacts in the New Providence Borough are not significant compared to other jurisdictions in Union County. Usually these impacts are limited to flooding of structures (especially basements) and roads. There is no significant history of flood damage to critical facilities or populations in the jurisdiction. As expected, the most frequent and serious damages appear to be related to structures that are well within the boundaries of the floodplain, i.e. close to the stream or river center line, particularly along the Passaic River. A basic review of NFIP claims for New Providence Borough shows a wide range of claims dates, with some concentrations related to the remnants of Hurricane Floyd in 1999, and Irene in 2011. The main County HMP includes more information about events that have impacted this area.

Figure 10-3
Borough of New Providence Effective FIRM

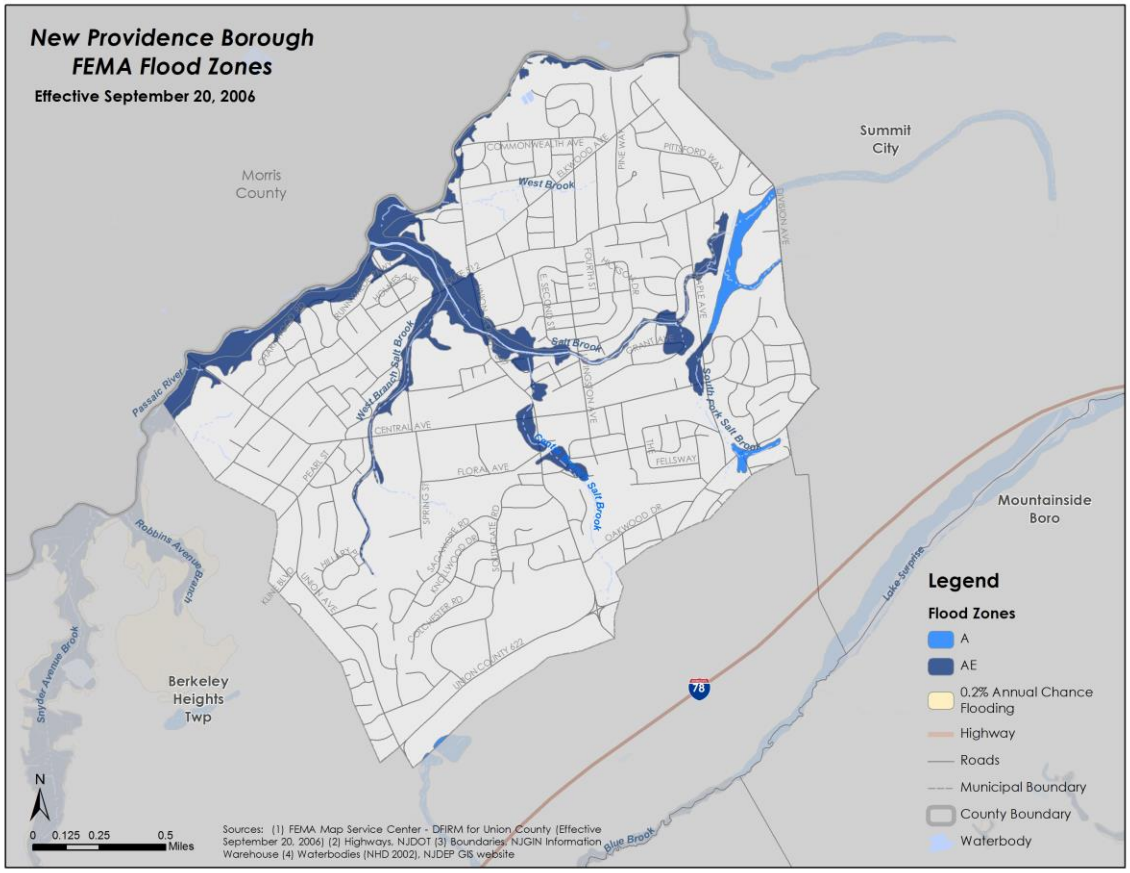


Table 10-7
NFIP Policies and Claims

Number of Parcels:	
New Providence:	4,007
Union County:	199,489
Number of Policies In-Force:	
New Providence:	151
Union County:	6,055
Number of Claims:	
New Providence:	84
Union County:	5,560
Total Paid Claims	
New Providence:	$350,354
Union County:	$96,782,279
Repetitive Loss Properties:	
New Providence:	7
Union County:	729
Total Building	
New Providence:	$163,102
Union County:	$16,597,500
Total Contents	
New Providence:	$26,635
Union County:	$3,787,671
Number of Claims	
New Providence:	14
Union County:	2,061
Average Claim	
New Providence:	$13,553
Union County:	$9,891

3.2.4 National Flood Insurance Program and Repetitive Loss Properties

To provide a sense of the flood risk in a community it is also beneficial to summarize the policies in force and claims statistics from the National Flood Insurance Program (NFIP). The U.S. Congress established the NFIP with the passage of the National Flood Insurance Act of 1968. The NFIP is a Federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the Federal Government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, the federal government will make flood insurance available within the community as a financial protection against flood losses. The New Providence Borough has been a member of the NFIP since 1973.

FEMA NFIP statistics indicate that as of February 2014, federal flood insurance policies were in-force on 151 properties in the New Providence Borough. This represents a dollar value of property and contents coverage totalling $43,576,500. Between 1978 and 2014, there have been a total of 84 NFIP insurance claims in the New Providence Borough with a total claims value of $350,354. [3] Table 10-7 compares the number of policies in-force and paid claims in the jurisdiction. The Table shows that New Providence Borough comprises 2.5% of the NFIP policies in-force in Union County.

The New Providence Borough is not a member of FEMA's Community Rating System (CRS), a voluntary program for communities participating in the NFIP. The CRS is an incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. For CRS participating communities, flood insurance premium rates are discounted in increments of 5% based on creditable activities.[4] CRS communities are ranked between 1 and 10, with Class 1 communities receiving a 45% premium discount.

It should be noted that NFIP claims are not a direct or completely accurate proxy for flood risk in a

[3] FEMA – Policy and Claim Statistics for Flood Insurance
[4] FEMA – Community Rating System (CRS).

community. The data does not include flood damages to structures that had no flood insurance. Also, in some cases, structures or contents may have been underinsured. The NFIP claims data also does not include any damages to public facilities, which may be insured via other means (such as self insurance or non-FEMA policies); such damages may also be addressed through other federal programs such as FEMA's Public Assistance Program. Figure 10-3 shows all NFIP claims in The New Providence Borough between 1978 and 2014.

FEMA requires a discussion of NFIP Repetitive Loss and Severe Repetitive flood loss statistics in hazard mitigation plans. The NFIP defines *repetitive loss* properties as those with two or more claims of more than $1,000 each during any rolling ten-year period.

The flood risk assessment method is based on analysis of NFIP data on repetitive flood loss properties The NFIP defines repetitive loss (RL) properties as those that have received at least two NFIP insurance payments of more than $1,000 each in any rolling ten-year period. As of February 2014, Union County had 707 such properties based on a query of the FEMA BureauNet NFIP interface. Of this total, seven (7) were located within New Providence Borough; this comprises 1.0% of the County total. Table 10-7 provides a comparison of the residential repetitive loss claims for Union County and The New Providence Borough. The tables below include the number of repetitive loss properties, building and contents damages, the total number of claims, and the average claim amounts. The New Providence Borough has properties, and the total of claims on them is relatively small, as shown in Table 10-7. These properties are also shown in Figure 10-3.

In general, the RL claims can be broken down by focusing on specific areas in the jurisdiction where flood losses are concentrated. For the reasons of practicality, the areas of concentration are defined as streets with three or more repetitive loss properties. There are no such concentrated areas within the municipality of New Providence Borough.

3.2.5 Flood Risk to Repetitive Loss Properties in New Providence

Residential flood risk is calculated by a simple methodology that uses the FEMA default present-value coefficients from the benefit-cost analysis software modules. To perform this calculation, the flood insurance claims data were reviewed to determine an approximate period over which the claims occurred. This method should be used only for very general estimates of flood risk because the NFIP data represents only part of the flood losses in any jurisdiction. This is because there are always properties that are uninsured or under-insured. Most of the flood claims in the most recent query occurred between 1978 and 2011, a period of 34 years.

Table 10-8
Projected 100-year Flood
based on Past Flood Insurance Claims

Data	Value
Period in years	34
Number of claims	14
Average claims per year	0.41
Total value of claims	$189,737
Average value of claims per year	$5,581
Projected risk, 100-year horizon	**$79,634**

As shown in Table 10-8, there have been 14 flood insurance claims in the 34-year period, for an average number of claims per year of 0.41. Based on a 100-year horizon and a present value coefficient of 14.27 (the coefficient for 100 years using the mandatory OMB discount rate of 7.0 percent), the projected flood risk to these properties is $79,634. It must be understood that individuals can obtain and cancel flood insurance policies, and the flood hazard depends on many variables, including the weather, so this projection is simply an estimate of potential damages. Nevertheless, it offers a useful metric that can be used in assessing the potential cost effectiveness of mitigation actions, although in this case, site-specific loss estimates are fairly small, meaning that the amount of grant funds that could be expended on projects will probably be limited.

3.2.6 Flood Risk to Severe Repetitive Loss Properties in New Providence

The definition of Severe Repetitive Flood Loss is included in the County portion of this mitigation plan. As of February 2014, the New Providence Borough had no severe repetitive flood loss properties.

3.4 Winter Weather Hazard in the Community

3.4.1 Type, Location, and Extent

Because the hazards severe storm – winter weather, ice storms and extreme temperatures – cold are closely related, they are combined in this subsection of the appendix. Severe storms and winter weather risks are discussed in detail in Section 4 of the County portion of this mitigation plan. There are no significant differences in the type, location or extent of this hazard between the County and New Providence Borough, and there are no aspects of the hazard that are unique to this jurisdiction.

3.4.2 Previous Occurrences and the Probability of Future Occurrences

Previous **occurrences** of the severe storm-winter weather/ice storm/extreme temperature - cold hazards are discussed in detail in the County portion of this hazard mitigation plan (see Section 4), and for reasons of brevity are not repeated here. There are no meaningful differences between the County as a whole versus New Providence Borough with regard to occurrences or the **future probability** of these hazards.

3.4.3 Severe Storm – Winter Weather Impacts and Vulnerabilities to the Hazard

The **impacts** from these three hazards in New Providence Borough are substantially similar to the County as a whole, and include lost productivity, traffic accidents, downed trees (and related power losses), medical events (such as heart attacks), and hypothermia (which rarely causes any significant or long-term problems). The community has no unique or pronounced **vulnerabilities** to these hazards. Like most established communities, over time New Providence Borough has adapted its systems and infrastructure to minimize the effects of cold weather and associated meteorological effects. In rare cases, buildings may experience structural problems due to snow loads, and public or private infrastructure may fail due to freezing. However, these problems are usually minor and are addressed by private citizens (through their own work, or via insurance proceeds) or by the government in the case of infrastructure.

Table 10-4: Winter Storm-related Risks (traffic injuries and fatalities), New Providence Borough 50- and 100-year Planning Horizons

	Injuries (combined)	Deaths
Snow/sleet	$1,671,635	$189,833
Icy pavement	$1,300,545	$143,177
Snow/sleet	$1,253,575	$126,144
Total annual risk (all hazards)	$4,225,756	$459,155
50-year risk	$58,315,428	$6,336,332
100-year risk	$60,301,533	$6,552,135

Perhaps the most significant potential impacts of winter weather are traffic accidents (with related injuries and fatalities), and power losses from ice and downed trees. For the most part, damage to vehicles is addressed via private insurance, records of which are proprietary. However, there are national statistics regarding injuries and deaths related to such weather. Local values for injuries and deaths can be deduced from national statistics. Figures for New Providence Borough are displayed in the table below. Refer to the County portion of this mitigation plan for source citations and an explanation

of the methodology.

An additional source of risk from cold and winter weather is hypothermia deaths. Although the risk from this hazard is relatively small, it can nevertheless be calculated by deduction from national statistics. Annual deaths nationwide were obtained from a U.S. Centers for Disease Control report (National Health Statistics Reports, *Deaths Attributed to Heat, Cold and Other Weather Events in the United States, 2006-2010*).

Table 10-10
Risks from Hypothermia New Providence Borough
Annually and 50- and 100-year Planning Horizons

2010 Population	% of US	Annual Death $	50-year Horizon	100-year Horizon
12,171	0.0038%	$328,419	$4,532,181	$4,686,538

3.7 Public and Critical Facilities

The buildings below were listed by the County as Important Buildings in a GIS layer; it shows that only 2 of the public buildings within the Borough are within the Special Flood Hazard Area. Both of these are schools, one private and one public. During Irene the Borough of New Providence put in$46,981.36 for public assistance in category E (Public Buildings). The Borough did not experience significant flooding associated with Hurricane Sandy, though they did have wind damage from that storm. Since Sandy, the Borough has sought funding to retrofit the Department of Public Works building for wind.

Facility	Address	SFHA
Our Lady of Peace School	99 South St	Y
Developmental Learning Center	330 Central Ave.	
Salt Brook School	40 Maple St.	Y
A.W. Roberts School	80 Jones Dr.	
New Providence M.S & H.S.	35 Pioneer Dr.	
Mun. Bldg. & Police H.Q.	360 Elkwood Ave.	
Publice Library	377 Elkwood Ave.	
Fire Headquarters		

4. Borough of New Providence Mitigation Strategy

This section contains goals, objectives, and action items for the Borough of New Providence, as part of the Union County Plan Update. The goals are similar to the goals outlined in the County plan, but the objectives are adjusted for the jurisdiction. The definitions for these terms can be found in Section 5 of the Union County Plan Update.

4.1 Goals

- Goal 1: Improve **LOCAL KNOWLEDGE** about the potential impacts of hazards, and the identification of specific measures that can be taken to reduce their impacts
- Goal 2: Improve **DATA COLLECTION, USE, AND SHARING** to reduce the impacts of hazards
- Goal 3: Improve **CAPABILITIES, COORDINATION, AND OPPORTUNITIES** to plan and implement risk reduction projects, programs, and activities
- Goal 4: Pursue a range of **MITIGATION OPPORTUNITIES**, including addressing NFIP repetitive and severe repetitive loss properties, and reducing risk to public properties and infrastructure

4.2 Objectives

- Objective 1.A: Increase risk awareness among officials and citizens.
- Objective 1.B: Maintain and improve jurisdiction-level awareness regarding funding opportunities for mitigation, including that provided by FEMA and other federal and State agencies.
- Objective 2.A: Improve the availability and accuracy of risk- and mitigation-related data at the local level, as the basis for planning and development of risk-reduction activities.
- Objective 2.B: Ensure that government officials and local practitioners have accurate and current information about best practices for hazard mitigation planning, project identification, and implementation.
- Objective 2.C: Develop and maintain detailed data about critical facilities, as the basis for risk assessment and development of mitigation options.
- Objective 3.A: Continue support of hazard mitigation planning, project identification, and implementation at the municipal level.
- Objective 3.B: Continue close coordination with the County in a range of risk-related areas, such as FEMA programs, mitigation planning, development of hazard mitigation projects, etc.
- Objective 3.C: Increase property owner participation in the National Flood Insurance Program.
- Objective 3.D: Work towards increasing the integration of mitigation principles and activities in a range of local regulations, plans, ordinances and activities.
- Objective 3.E: Maintain and improve coordination with surrounding communities with regard to understanding and reducing risks.
- Objective 4.A: Facilitate development and timely submittal of project applications meeting state and federal guidelines for funding (1) for RL and SRL properties and (2) for hardening/retrofitting infrastructure that is at the highest risk.
- Objective 4.B: Maintain and enhance local planning and regulatory standards related to future development and investments.

4.3 Mitigation Strategy

The table below lists prioritized mitigation projects and actions identified by the Borough of New Providence. At this time the Borough is still pursuing actions that have not been financed since 2010 and does not have need for additional actions.

Mitigation Action, Program, or Project	Hazard	Priority	Implementation Mechanism	Responsible Party	Project Duration	Estimated Cost	Current Status
Storm-water management system upgrade and improvement for Passaic Avenue, North of Springfield Avenue, All areas along Salt Brook Bank (South/West/Central)	Flood	High	Floodplain Management	New Providence OEM & DPW	5-10 years	10 Million	Lack of funding
Elevation or flood proofing of properties along Passaic River	Flood	High	Floodplain Management	New Providence OEM	5-10 years	100,000-150,000 per home	Lack of funding
Channel improvements for Salt Brook	Flood	Low	Floodplain Management	New Providence Engineer	1-year	$800,000	Lack of funding
Flood proofing for Wastewater Treatment Plant	Flood	High	Floodplain Management	New Providence DPW	1-Year	$250,000	Lack of funding
Conduct all-hazards public education and outreach program for hazard mitigation and preparedness.	All	High	Emergency Management	OEM Coordinator, in coordination with SCOEM	One Year	Staff Time	On-going
Erosion at existing outfalls to the Passaic River at Pine Way and Ashwood Road	Flood	High	Floodplain Management	New Providence Engineer	6 months	$300,000	Complete
Erosion along surface drainage feature at Brook Hollow Lane	Flood	Medium	Floodplain Management	New Providence Engineer	6 moths	$100,000	Completed

4.4 Capability Assessment

As part of this plan update each town self-assessed their existing planning and regulatory tools, communication and emergency response capabilities, staff and personnel, and their capabilities to leverage municipal funds to achieve hazard mitigation planning objectives. This capability assessment should be updated as part of the ongoing maintenance process.

4.4.1 Planning and Regulatory

Tool	Township Has (y/n)
Zoning Ordinance	Y
Subdivision Ordinance	Y
Flood Damage Prevention Ordinance (per NFIP)	Y
Special Purpose Ordinances (e.g. wetlands, critical or sensitive areas)	
Stormwater Management Plan/Ordinance	Y
Comprehensive Plan / Master Plan	Y
Capital Improvements Plan	
Site Plan Review Requirements	Y
Habitat Conservation Plan	
Economic Development Plan	Y
Local EOP	Y
Continuity of Operations Plan	
Post Disaster Recovery Plan or Ordinance	
Wildfire Protection Plan	
Real Estate Disclosure req.	
Other (e.g. steep slope ordinance, local waterfront revitalization plan)	
Freeboard	Y
Cumulative Substantial Damages	
Shoreline Management Plan	

4.4.2 Communication and Emergency Response

	Does the Township have this (y/n)
Outdoor warning system	
Nixle	Y
Auto-Dialer/Reverse 911/Emailer	
Social Media	Y
Website Updates	Y
Other Emergency Communications	Y
Mutual Aid Agreements	Y
Emergency Operations Center	Y
Evacuation Vehicles	Y
Swift-water rescue	
Shallow water boats	

4.4.3 Staff/Personnel

	Does this Township have this expertise on staff?
Staff with expertise or training in benefit/cost analysis	
Grant Writer(s)	Y
Emergency Manager	Y
Professionals trained in conducting damage assessments	Y
Scientist familiar with natural hazards in the municipality.	
Personnel skilled or trained in "GIS" applications	Y
Surveyor(s)	
NFIP Floodplain Administrator	Y
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y

4.4.4 Fiscal Capabilities

Fiscal Mechanism	Does the Township have this capability?
Community development Block Grants (CDBG)	Y
Capital Improvements Project Funding	Y
Authority to Levy Taxes for specific purposes	Y
User fees for water, sewer, gas or electric service	
Impact Fees for homebuyers or developers of new development/homes	-
Incur debt through general obligation bonds	Y
Incur debt through special tax bonds	
Incur debt through private activity bonds	
Withhold public expenditures in hazard-prone areas mitigation grant programs	

5. Plan Maintenance and Adoption

5.1 Plan Maintenance

The Borough of New Providence will review this Appendix of the County's hazard mitigation plan appendix each year and give the County's HMP Coordinator an annual progress report. The Borough Engineer is responsible for convening the LPC, initiating the plan review, and submitting the annual progress report. The LPC may use worksheets #1 and #3 in the FEMA 386-4 guidance document, to facilitate the review and progress report. FEMA guidance worksheets are provided in Appendix G. Local progress reports shall be provided to the County HMP Coordinator at least two weeks prior to the annual plan review meeting.

Additionally, the LPC will convene and review the plan when major hazard events impact the jurisdiction, potentially yielding opportunities for mitigation grant funding, or when new information suggests that plan elements do not accurately reflect the community's risk or its mitigation priorities.

If necessary, the Borough Engineer will convene a meeting of the LPC to review and approve all changes. The Borough retains the discretion to implement minor changes to the document without formal procedures involving the Borough Council subject to local policies and regulations.

In addition to the annual progress report, the Borough of New Providence will provide Union County with a copy of the written notice of any changes to the jurisdictional appendix at the time such changes are implemented.

The LPC shall document, as needed and appropriate:

- Hazard events and losses in Linden and the effects that mitigation actions have had on impacts and losses,
- Progress on the implementation of mitigation actions, including efforts to obtain outside funding for projects,
- Any obstacles or impediments to the implementation of actions,
- Additional mitigation actions believed to be appropriate and feasible,
- Any changes to local capabilities,
- Efforts to integrate the information included in this plan into other local planning mechanisms including, but not limited to, the comprehensive plan, capital improvement planning, budgeting, zoning amendments, and variance approvals,
- All public and stakeholder input and comment on the Plan that has been received by the Borough.
- Copies of any grant applications filed on behalf of the Borough

5.1.2 Continued Public Input

The Borough of New Providence is committed to incorporating public input into its ongoing hazard mitigation planning. The public will have an opportunity to comment on the Plan prior to any changes and during the 5-year plan update. The annual progress reports will be posted on the County mitigation website in addition to the adopted Plan. The Borough will place a link to the Plan on its website.

All public comments and input on the plan will be recorded and addressed, as appropriate. Opportunity to comment on the plan will be provided directly through the County's website. Public comments can also be submitted in writing to the County's HMP Coordinator. All public comments shall be addressed to: Union County Office of Emergency Management c/o All Hazards Pre-disaster Mitigation Plan Coordinator 300 North Ave East, Westfield, NJ 07090.

The Borough of New Providence's LPC shall ensure that:

- Copies of the latest approved Plan are available for review at Borough Hall along with instructions to facilitate public input and comment on the Plan.
- Public notices are made as appropriate to inform the public of the availability of the Plan, particularly during Plan update cycles.
- For minor changes to this appendix, the Borough of New Providence will post a notice on the Borough's website and invite the public to review and comment.
- For major changes involving Borough Council approval, the Borough will use its standard public notice procedures inviting the public to review the document and provide feedback.

5.2 Plan Integration

The Hazard Mitigation Plan is a critical tool to help identify vulnerabilities and develop specific projects to reduce studied risk within the jurisdiction. However, it is not the only tool that may help minimize the impact of future hazard events on the people, infrastructure, and economy in the community. Using the data included in this Plan update to inform future updates of its Comprehensive Plan, Capital Improvement Planning and annual budget, stormwater management, zoning and code updates, and variance and subdivision applications will improve the resiliency of the community and reduce future risk to persons and property. All efforts to integrate the plan into other local mechanisms can be reported to the Plan Coordinator at each annual update.

5.2 Plan Adoption

On [insert date] Union County submitted the initial draft of the 2016 Plan Update to NJOEM for review and comment. After addressing NJOEM comments in the document, the HMP was resubmitted for final consideration and approval by NJOEM and FEMA. FEMA approved the plan on [insert date], and the Plan update was forwarded to the Union County Board of Chosen Freeholders for adoption, which occurred on [insert date].

The Borough Council approved the plan on [insert date]. The Borough's resolution for adoption and the County's adoption resolution are provided as Appendix E of the 2016 HMP update. Following adoption, the plan update was resubmitted to FEMA for final approval, which occurred on [insert date]. The FEMA approval letter is included as Appendix D.