



Appendix 6: Borough of Helmetta

The Borough of Helmetta participated in the 2015 Middlesex County Hazard Mitigation Plan (HMP) update. This appendix includes the locally-specific information about the Borough. The following sections detail the planning process and participants; the current population, building stock, and land development trends; hazards that specific to the Borough and corresponding risk assessments; the Borough’s mitigation strategy, and a local capability assessment.

1. Plan Development

The Director of Public Works acted as the primary point of contact for this plan update. The Director worked with other municipal employees through the formation of a Local Planning Committee (LPC), as listed below. The LPC provided information to support the plan update. In addition to the answers the LPC provided for the municipal worksheets used for the plan update, the Borough codified ordinance were used in the development of this appendix.

Table 6-1: Borough of Helmetta Local Planning Committee Members

Name	Title	Organization
Darren Doran	Director of Public Works/NFIP Manager	Borough of Helmetta
Christopher Slavicek	Mayor	Borough of Helmetta
Terrence Vogt	Borough Engineer	Borough of Helmetta
Sandra Bohinski	Municipal Clerk	Borough of Helmetta
Matthew Crane	Borough Administrator	Borough of Helmetta
Pradeep Mathew	Fire Chief	Borough of Helmetta



2. Community Profile

2.1 Physical Location

The Borough of Helmetta has a total area of 0.907 square miles and is located in the south-central region of Middlesex County, New Jersey. It is bordered by Spotswood and East Brunswick to the north and Monroe Township on the south. There are no major transportation routes through Helmetta, but the New Jersey Turnpike is accessible via Monroe Township at Exit 8A. There are no commuter rails in Helmetta.

2.1.1 Hydrography and Hydrology

The Borough of Helmetta is within the Manalapan and Cedar Brook watersheds in the Raritan Basin. The Manalapan runs along the Borough's southern border. Helmetta Pond, the only major waterbody within the Borough, drains out the Cedar Brook which flows into the Manalapan just upstream of Duhernal Lake.

2.2 History and Governance

The Borough of Helmetta was formally incorporated on March 20, 1888 from East Brunswick Township. The Borough is governed under the Borough form of government, and has an elected Mayor and six Council members. The Mayor is elected directly to a four-year term of office. Town Council members are elected to serve three-year terms on a staggered basis, with two seats coming up for election every year. The Borough Council holds monthly meetings open to the public where it discusses legislation under consideration.

2.3 Demographics

2.3.1 Population Trends

According to the U.S. Census Bureau, the population in 2010 was 2,178.¹ This is a 19.3% increase from 2000. The Borough of Helmetta has a population density of 2,563 persons per square mile. It is the 19th densest municipality within the County. A summary of major population and household characteristics may be found in the following tables.

Table 6-2: Borough of Helmetta Population Summary Estimates (2010 Census)²

Population	Quantity	Percent of Municipal Population
Total Population	2,178	100
Median Age	40.3	N/A
17 years and under	453	20.8
65 years and over	210	9.6
Race		

¹ U.S. Bureau of the Census. American Fact Finder "Helmetta Borough, NJ". <http://factfinder.census.gov/>. Retrieved 8/16/15.

² Ibid.



Population	Quantity	Percent of Municipal Population
White	1,930	88.6
Black/African-American	86	3.9
Native American/Alaskan Native	2	0.1
Asian	106	4.9
Native Hawaiian/Pacific Islander	0	0
Other Race (unspecified)	25	1.1
Two or More Races	29	1.3
Hispanic or Latino	164	7.5

Population statistics may further reveal potential vulnerabilities in the community. The following table details the distribution of two groups included in vulnerable population analyses (children and the elderly) according to household description. Residents living alone, particularly the elderly, may have fewer coping mechanisms and resource than those in household groups, therefore may constitute a demographic that could require assistance in mitigating their vulnerability.

Table 6-3: Borough of Helmetta Household Characteristics Summary Estimates (2010 Census) ³

Households	Quantity	Percent of Total
Total Households	891	100
Family Households (related)	596	66.9
Family Households w children under 18	248	27.8
Non-Family Households (unrelated)	295	33.1
Non-Family Households, living alone	232	26.0
Non-Family Households, living alone Male over 65 years	13	1.5
Non-Family Households, living alone Female over 65 years	34	3.8

2.3.2 Vulnerable Populations

Vulnerable populations include those groups that may require special assistance, considerations, accommodation or other needs during emergency events to facilitate their effective and safe compliance with emergency instructions. This includes, but is not limited to, those individuals needing mobility assistance (strollers, wheelchairs, etc.), those with financial needs (cannot afford hotel rooms, food, necessities, during evacuation periods, etc.), those requiring translation or interpretation services to understand emergency information (non-English-speaking populations, Deaf and hard of hearing), persons considered legal minors, those persons with cognitive impairments, persons with specialized medical needs (electric dependent equipment, refrigerated medications, use of Personal Assistants for routine and basic care, medical transportation needs, etc.), and populations with social disadvantages other needs that may require unique considerations during emergency events.

Identifiable vulnerable populations in Helmetta include (but may not be limited to) the following:

³ Ibid.



Table 6-4: Borough of Helmetta Vulnerable Population Estimates (2010)

Population Type	Population Estimate (2010 Census) ⁴
Under 5 years of age	137
Under 18 years of age	453
Over 65 years of age	210
Limited English Proficiency (LEP)	169 (equals 7.8% of population over 5 years old) ⁵
Institutionalized	0
Living in Group Quarters	0

In addition to these statistics, approximately 4.8% of the population lives below the poverty line. The mean household income is \$87,332, with the per capita income at approximately \$34,618 (2013 estimates).⁶

2.4 Land Use and Development

The Borough of Helmetta is a small municipality adjacent to Jamesburg Park. There is some room for expansion, and the Borough has seen some increase in development in the past five years, but it is largely constrained by environmental factors. As seen in the table below, the land use and land cover for the community has remained relatively static since 2000.

Table 6-5: Borough of Helmetta Land Cover Summary

Land Cover Class	Percent of Total Land ⁷	2002 (acres)	2007 (acres)	2012 (acres)	Percent Change ⁸
Agriculture	0	0	0	0	0
Barren Land	0	13.32	0	0	-100%
Forest	13.87%	80.061	76.10	77.87	-2.73%
Urban	43.64%	224.51	245.19	244.99	9.12%
Water	8.06%	45.64	45.86	45.22	-0.90%
Wetlands	34.43%	197.83	194.20	193.27	-2.30%

2.4.1 Buildings and Development

Helmetta is largely single-family residential homes. The vast majority of units are occupied by owners, making Helmetta third in the County for owner-occupancy, behind Cranbury and Monroe.

⁴ Ibid.

⁵ 2013 American Community Survey Estimate

⁶ U.S. Bureau of the Census. American Fact Finder "Helmetta Borough, NJ". <http://factfinder.census.gov/>. Retrieved 8/16/15.

⁷ Percent based on acres of land in 2012

⁸ Change is calculated between 2002 and 2012



The building stock in the Borough was largely built in the 80s and 90s, with 45 percent of the homes built during this time. The Borough has slowly filled-in over time, with some redevelopment projects continuing to occur.

Table 6-6: Borough of Helmetta Housing Statistics

Housing Characteristics	Estimate
Total Occupied Housing Units	931
Percent Owner-occupied	86.8
Percent Renter-occupied	13.2
Percent built after 2000	14.5
Percent built before 1979	40

2.4.2 Recent and Expected Development

Project Name	Type	Number of Structures	Locations	Known Hazards	Description/Status
Kaplan Cos	Residential	20 Townhouses	Railroad Ave/Main Street	None	In process
Kaplan Cos	Residential	200 Apartments	Railroad Ave/Main Street	None	In process



2.5 Critical Facilities and Infrastructure

2.5.1 Essential Facilities

The Borough of Helmetta operates a Municipal Complex, which includes its Police Department and Emergency Operations Center, a Firehouse, and a Department of Public Works facility. The Borough recently was deeded a community center, between John and Railroad Ave. This building is adjacent to the Special Flood Hazard Area, but has never experienced flooding. The Firehouse has been damaged by floodwaters. There is an ongoing County project to improve roadway drainage that is anticipated to reduce the flood risk for this building. The Municipal Building is not in an known hazard zone.

2.5.2 Transportation

There are no major transportation routes through Helmetta, but the New Jersey Turnpike is accessible via Monroe Township at Exit 8A. There are no commuter rails in Helmetta, though a railline does cut through the center of the Borough. There is a single County road, 615 that traverses the entire Borough. This is the primary route for ingress and egress in the Borough.

2.5.3 Critical Utilities and Infrastructure

The Borough of Helmetta lies within the JCP&L service area for electricity. The Borough reports that service is reliable. PSE&G is the natural gas supplier for the Borough. East Brunswick Water Utility provides water to residents and the Borough has an emergency interconnection with a neighboring municipality. Wastewater is treated by the Middlesex County Utility Authority, though the Borough is responsible for the sewer infrastructure. The Borough is also responsible for the stormwater infrastructure. Both of these systems are limited in their capacity to handle flows and cause frequent back-ups in high storm events. The Borough has recently installed liners in manhole covers located within floodprone areas to reduce infiltration. The County is also working on roadway drainage projects to improve stormwater management along Main Street/CR 615.



3. Hazard Identification and Risk Assessment

This section describes the natural hazards and risks that can affect Borough of Helmetta. Like all the other municipalities in Middlesex County, the Borough of Helmetta is potentially subject to the effects of all the hazards that are considered in this mitigation plan. However, only a few of these hazards have significant impacts that are unique to the community. The remaining hazards are discussed in detail in the County part of this 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 Middlesex County HMP update includes separate appendices for each municipality, this requirement is met in the appendices, while risks that affect the entire County uniformly are discussed in the County part of the HMP.

3.1 Background and Hazard Rankings

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. The planning team also reviewed hazard-specific data at the jurisdiction level to provide communities with insight about which hazards would be afforded detailed risk assessments. Municipalities ranked the list of hazards as high, medium, low, or no concern.

Table 6-7 shows community hazard rankings. To the extent possible, the level of discussion and detail about specific hazards in this section are based on these rankings. However, in many cases there is insufficient hazard information available at the level of the jurisdiction to allow detailed discussion or risk estimates. For some hazards there is limited jurisdiction-level tabular data included in the County portion of the HMP, and users should refer to those subsections for more detail. The hazards marked with asterisks in the table above are included in this appendix; the others are included in the County portion of this HMP, but not discussed in detail here.

Table 6-7
Borough of Helmetta
Hazard Identification and Prioritization

Hazard	Priority
Coastal Erosion	Low
Dam/Levee Failure	Low
Drought	Low
Earthquakes	Low
Extremely High Temps	Low
Extremely Low Temps	Low
Floods	High*
Geological Hazards	Low
Hazardous Substances	Medium
Hurricanes/Tropical Storms	High*
Nor’easters	High
Power Outages	Medium
Severe Weather	Medium
Wildfire	Low*
Winter Storm	Medium



3.2 Flood Hazard

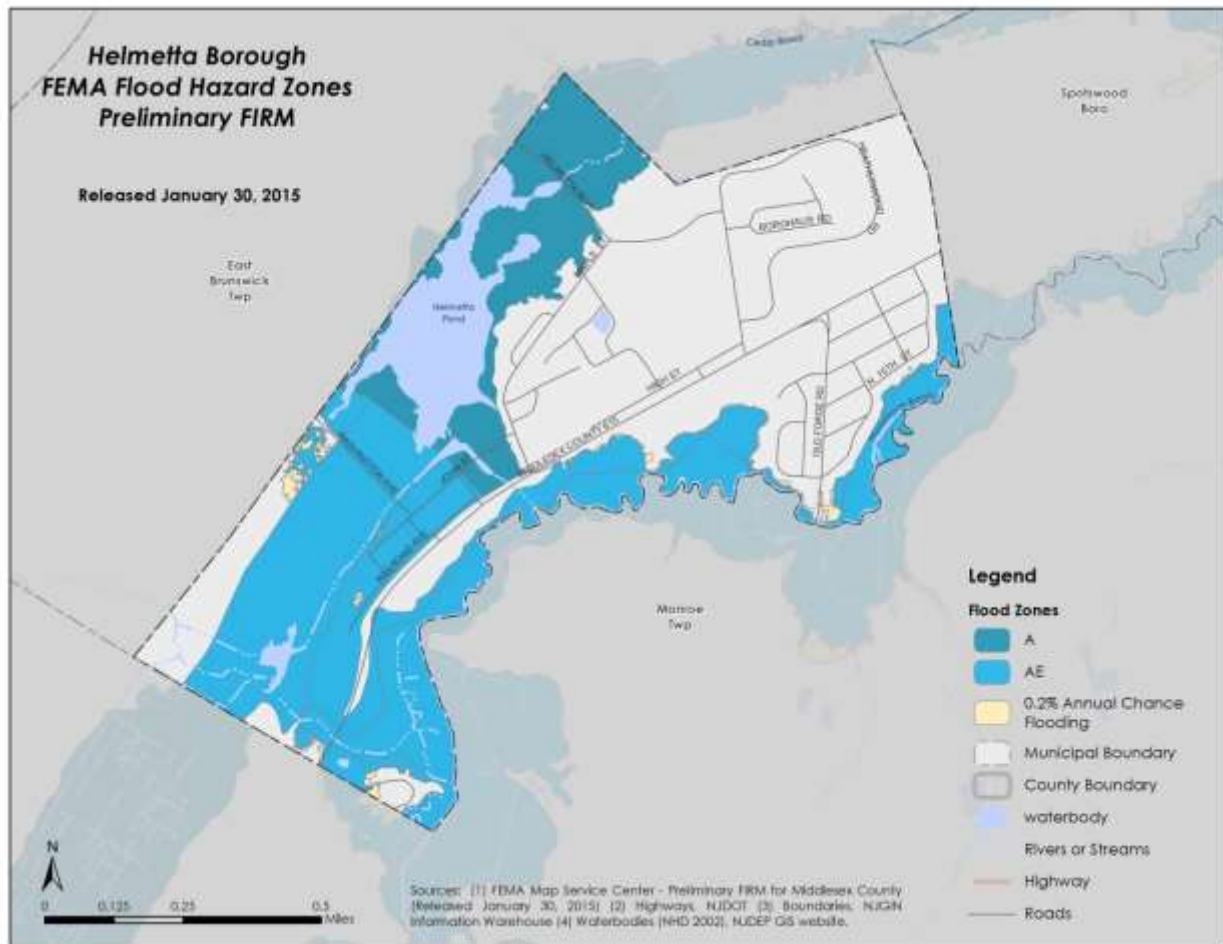
3.2.1 Type, Location, and Extent

The Borough of Helmetta is located in south-central Middlesex County. The jurisdiction as a northeast to southwest configuration, and the entire southeastern border is comprised of the Manalapan Brook, one of many relatively small streams that ultimately drain into the Raritan River, well to the north. A small network of unnamed streams is found at the southwest side of the jurisdiction – these streams combine and drain into Lake Marguerite and Helmetta Pond, in the northwestern part of Helmetta.

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. At the time the Middlesex County HMP was being updated, the effective FIRM for the Borough of Helmetta is dated July 6, 2010. While the effective FIRM is the approved map and is used for regulatory purposes, the Middlesex County hazard mitigation plan update was developed in 2015, and the best available flood mapping at that time was the FEMA revised Preliminary Flood Map (released on January 30, 2015). This map is shown below in Figure 6-1. Nearly all of the Special Flood Hazard Area is 100-year floodplain, a combination of A and AE zones.



Figure 6-1
Borough of Helmetta portion of FEMA Revised Preliminary Flood Insurance Rate Map
(Source: FEMA Region II, Coastal Analysis and Mapping, Preliminary FIRM, Sept. 19, 2014)



As shown in Table 6-8 below, more than half of Helmetta’s land area is comprised of floodplain. The majority of the floodplain is north and west of Main Street, in an area that is mostly undeveloped. The remainder of the floodplain is located along Manalapan Brook, and there is no significant development in that area either.



Table 6-8
Floodplain and Parcel Data for Helmetta Borough
(Source: FEMA Region II, Coastal Analysis and Mapping, Preliminary FIRM, January 2015)

Data Type	Value
Jurisdiction area in square miles	0.87
Square miles within 100-year floodplain	0.45
Jurisdiction area within 100-year floodplain	52.27%
Number of parcels in jurisdiction	1,014
Number of parcels with centroids within 100-year floodplain	152
Parcels with centroids within 100-year floodplain	14.99%

[Note: the table refers to centroids, which are the geographic center of a parcel. This is a better indicator of flood exposure than simple intersection with the floodplain, although it does not necessarily mean that any structures or infrastructure are within the boundaries of the Special Flood Hazard Area].

Current FEMA guidance uses the term extent as analogous to potential severity. The extent of the flood hazard is not especially significant compared to more floodprone jurisdictions in Middlesex County. Significant flooding has been infrequent, and analysis of claims records suggests that extent (depth) is relatively low in most cases.

3.2.2 Previous Occurrences and the Probability of Future Floods

NFIP flood insurance claims in Helmetta extend back to the late 1970s and are fairly uniform, with the exception of Tropical Storm Irene in 2011, which accounts for a disproportionate number of claims in the jurisdiction. The probability of future flooding is probably about the same as it has been in the past, i.e. that larger and less-probable events will cause flooding periodically.

3.2.3 Flood Impacts and Vulnerabilities to Flooding

Compared to many other jurisdictions in the County, flood impacts in Helmetta have been relatively minor through the years. Since 1978 average flood insurance claim in Helmetta was \$10,716, versus the County at \$31,549, suggesting flood levels are relatively low and have not substantially damaged any units. The vulnerability of flooding within the Borough is exacerbated by floodplain management practices in the region. Flow through the Manalapan to DeVoe Lake will determine the level of backflooding that the Borough experiences.



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). There is a discussion of the NFIP in the County section of this hazard mitigation plan. The Borough of Helmetta has been a member of the NFIP since 1984.

**Table 6-9
NFIP Policies and Claims**

Number of Parcels:	
Helmetta:	1,014
Middlesex County:	283,276
Number of Policies In-Force:	
Helmetta:	82
Middlesex County:	4,489
Number of Claims:	
Helmetta:	60
Middlesex County:	3,478
Total Paid Claims	
Helmetta:	\$ 642,996
Middlesex County:	\$109,727,837
Repetitive Loss (RL) Properties:	
Helmetta:	13
Middlesex County:	112
Total Building (RL)	
Helmetta:	\$ 394,882
Middlesex County:	\$16,236,097
Total Contents (RL)	
Helmetta:	\$12,254
Middlesex County:	\$1,045,153
Number of Claims (RL)	
Helmetta:	40
Middlesex County:	541
Average Claim (RL)	
Helmetta:	\$10,178
Middlesex County:	\$31,943

FEMA NFIP statistics indicate that as of February 2015, federal flood insurance policies were in-force on 82 properties in Helmetta. Between 1978 and 2015, there have been a total of 60 NFIP insurance claims in the Borough of Helmetta, with a total claims value of \$642,996. Table 6-9 compares the number of policies in-force and paid claims in the jurisdiction. The Table shows that Helmetta comprises 1.8% of the NFIP policies in-force in Union County.

The Borough of Helmetta is not presently a member of the Community Rating System (CRS), a voluntary program for communities participating in the NFIP. The CRS is a voluntary 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. 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 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.

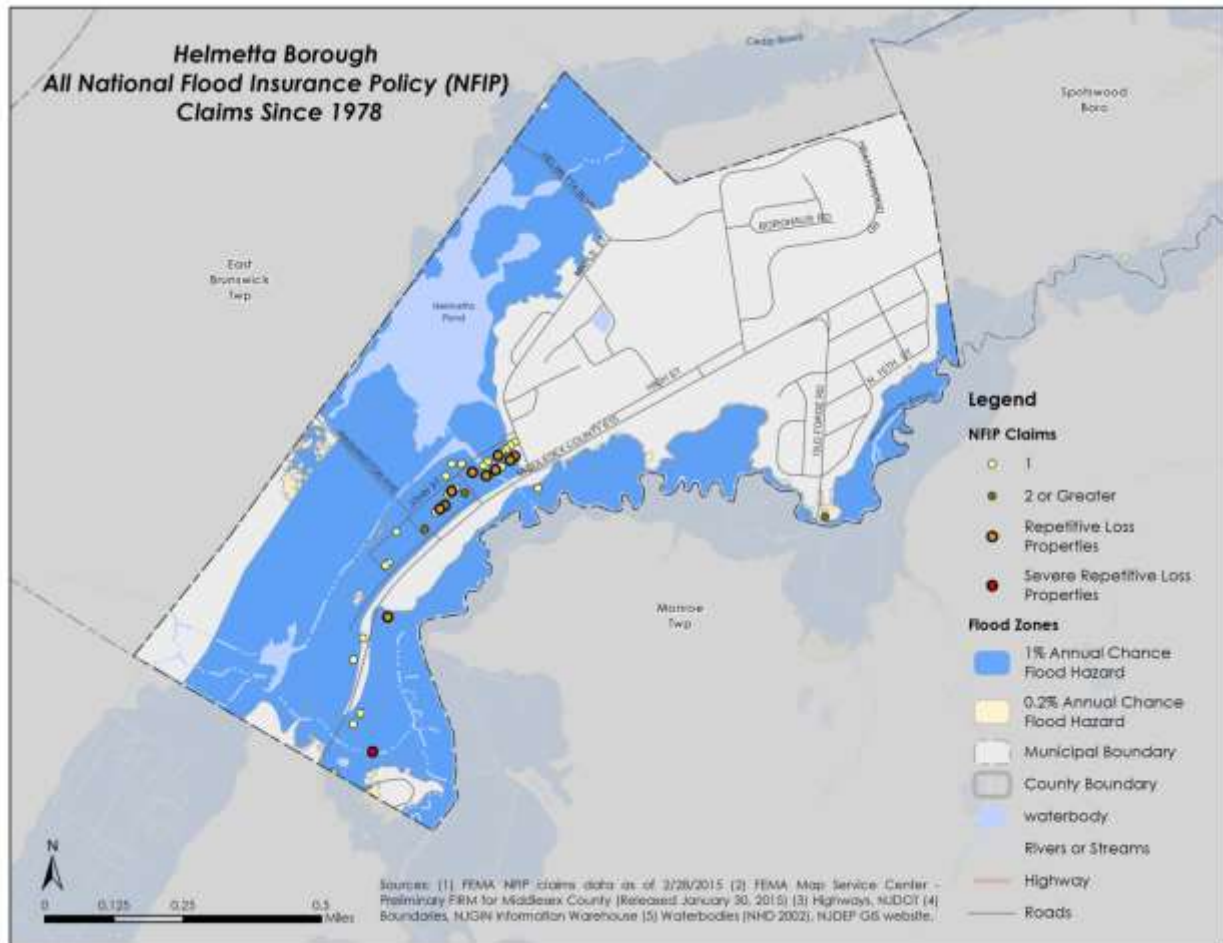


Table 6-10
NFIP Claims Summary – Borough of Helmetta, 1978 to 2015
(Source: FEMA National Flood Insurance Program, February 2015)

City/County Name	# of Parcels	# of Policies In-Force	% of County Policies	# of Claims	Total Paid Claims (\$)
Helmetta Borough	1,014	82	1.83%	60	\$642,996
Middlesex County	283,276	4,489	----	3,478	\$109,727,837

Figure 6-2 shows all NFIP claims in Helmetta between 1978 and 2015. Nearly all the claims are concentrated on Railroad Avenue, Main Street and John Street.

Figure 6-2
Map of NFIP Claims in Helmetta Borough (1978 to 2015),
Including Repetitive Loss and Severe Repetitive Loss Properties
(Source: FEMA National Flood Insurance Program, February 2015)





3.2.5 Flood Risk to Repetitive Loss Properties in Helmetta

FEMA requires a discussion of NFIP Repetitive Loss and Severe Repetitive flood loss statistics in hazard mitigation plans. In 2012, the Biggert Waters act redefined repetitive loss property as a structure covered by a contract for flood insurance made available under the NFIP that has incurred flood-related damage on two occasions, in which the cost of the repair, on average, equaled or exceeded 25% of market value of the structure at the time of each such flood event. This definition is being used to prioritize properties for mitigation funding. The data about Repetitive Loss properties in this subsection are based on the previous definition. Under the revised definition above, Helmetta has no RL properties. See Section 4 of the County portion of this HMP for more details on repetitive loss properties in the County.

The flood risk assessment in this section is based in part on analysis of NFIP data on repetitive flood loss properties. As of February 2015, Middlesex County had 429 such properties based on a query of the FEMA BureauNet NFIP interface.

Of this total, 13 properties were located within Helmetta. This comprises three percent of the County total. Table 6-10 provides a comparison of the residential repetitive loss claims for Middlesex County and Helmetta. 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 next table shows the streets in Helmetta with the most insurance claims. For reasons of confidentiality, this mitigation plan does not show specific addresses.

Table 6-11
Streets in the Borough of Helmetta with the Highest Numbers and Amounts of NFIP Claims
(Repetitive Loss Properties)
(Source: FEMA National Flood Insurance Program, February 2015)

Street Name	Building	Contents	Total	# Claims	Average
John Street	\$41,600	\$0	\$41,600	7	\$5,943
Main Street	\$189,502	\$0	\$189,502	16	\$11,844
Railroad Avenue	\$163,780	\$12,254	\$176,033	17	\$10,355

The next table provides the results of a simple risk projection for repetitive loss properties. This is done by annualizing past insurance claims and using this as the basis for estimating future losses. This method employs standard FEMA statistical techniques, and may be used for developing a sense of flood risk, i.e. total future losses over the 100-year planning horizon. The results below should be considered general and preliminary. It is possible to complete more accurate risk assessments for specific projects using FEMA software and methodologies, combined with information about sites and facilities.



Table 6-12
100-Year Risk Projection for NFIP Severe Repetitive Loss Properties in the Borough of Helmetta
(Source: FEMA National Flood Insurance Program, February 2014)

Data	Value
Period in years	26
Number of claims	40
Average claims per year	1.54
Total value of claims	\$407,136
Average value of claims per year	\$15,659
Projected risk, 100-year horizon	\$223,455

3.2.6 Flood Risk to Severe Repetitive Loss Properties in Helmetta

Severe Repetitive Flood Loss was also redefined in the Biggert Waters Act as properties that have “incurred flood-related damage for which four or more separate claims payments have been made under flood insurance coverage under this title, with the amount of each claim exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000; or for which at least two separate claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the value of the insured structure.” The data about Severe Repetitive Loss properties in this subsection are based on the previous definition. Under the revised definition above, Helmetta has no SRL properties.

Table 6-13
Statistics on NFIP Severe Repetitive Loss Properties in the Borough of Helmetta
(Source: FEMA National Flood Insurance Program, February 2015)

City/County Name	Properties	Total Building	Total Contents	Total Losses	# of Claims	Average Claim
Helmetta Borough	2	\$171,316	\$0	\$171,316	10	\$17,132
Middlesex County	112	\$16,236,097	\$1,045,153	\$17,281,250	541	\$31,943

The next table shows the results of a simple risk (future losses) projection for severe repetitive loss properties. This is done by annualizing past losses and using this as the basis for estimating future losses. This method uses standard FEMA techniques, and may be used for developing a sense of flood risk. The results below should be considered general and preliminary. It is possible to complete more accurate risk assessments for specific projects using FEMA software and methodologies.



Table 6-14
100-Year Risk Projection for NFIP Severe Repetitive Loss Properties in the Borough of Helmetta
(Source: FEMA National Flood Insurance Program, February 2014)

Data	Value
Period in years	10
Number of claims	10
Average claims per year	1.00
Total value of claims	\$171,316
Average value of claims per year	\$17,132
Projected risk, 100-year horizon	\$244,467

3.3 Hurricanes and Tropical Storms

3.3.1 Wind Risk Estimates

There are three significant hazards related to hurricanes, tropical storms, and to a lesser extent, nor'easters. These are: floods, storm surge, and high winds. Both floods and storm surge are addressed in the flood section of the present municipal appendix, as well as the County section of the hazard mitigation plan update. This subsection provides a preliminary quantification of hurricane wind risk based that was generated by FEMA's HAZUS-MH software (version 2.1, 2014). The calculations in Table 6-15 show a range of loss categories across the top row versus "occupancy classes" on the first column. The occupancy classes are various land uses that are represented in HAZUS. The last two columns indicate the projected 50-year and 100-year risks, i.e. the total amount of damage over those planning horizons. The figures are based on annualizing losses, then discounting them to present value using the software. There is more detailed information about the calculations and County-wide results in the main section of this HMP update.

3.3.1 FEMA Project Worksheets from Tropical Storm Irene and Hurricane Sandy

Following many natural disasters, FEMA engineers and field teams complete formal assessments of damage to community assets, and document these in project worksheets (PWs). The PWs are the basis of FEMA Public Assistance grants for repairs. There are seven categories of damage, indicated by the letters A through G. These are: A – debris removal; B – emergency protective measures; C – roads and bridges; D – water control facilities; E – public buildings; F – utilities, and; G – recreational facilities/other. The categories and amounts of the PWs are listed in Table 6-16 below for Tropical Storm Irene and Hurricane Sandy. Note that in some cases there are multiple different organizations in a community that are applicants for FEMA Public Assistance. In order to simplify the table, the PW amounts for all applicants in a community are combined.



Table 6-15
Probabilistic Wind Risk in Helmetta, 50- and 100-year Planning Horizons
(Source: FEMA, HAZUS-MH version 2.1)

Occupancy Class	Total SF	Building Damages	Contents Damages	Inventory Loss	Relocation Cost	Business Income Loss	Rental Loss	Lost Wages
Residential	920,653	\$23,336	\$9,315	\$0	\$1,073	\$0	\$588	\$0
Commercial	76,185	\$488	\$190	\$6	\$74	\$65	\$44	\$60
Industrial	20,519	\$72	\$29	\$4	\$5	\$1	\$0	\$1
Agricultural	10,196	\$64	\$31	\$4	\$10	\$1	\$0	\$0
Religious	339,411	\$4,045	\$1,475	\$0	\$576	\$281	\$51	\$661
Government	1,191	\$6	\$2	\$0	\$1	\$0	\$0	\$2
Education	5,600	\$33	\$12	\$0	\$6	\$1	\$0	\$3
Totals	1,047,945	\$24,107	\$9,613	\$14	\$1,184	\$77	\$634	\$88

Table 6-15
Probabilistic Wind Risk in Helmetta, 50- and 100-year Planning Horizons
(Source: FEMA, HAZUS-MH version 2.1)

Occupancy Class	Total Annualized Loss	50-year Risk	100-year Risk
Residential	\$34,312	\$473,537	\$489,595
Commercial	\$927	\$12,797	\$13,231
Industrial	\$112	\$1,546	\$1,598
Agricultural	\$109	\$1,509	\$1,560
Religious	\$7,089	\$97,832	\$101,149
Government	\$13	\$173	\$179
Education	\$55	\$760	\$786
Totals	\$35,718	\$492,941	\$509,657

Table 6-16
FEMA Public Assistance Expenditures in Tropical Storm Irene and Hurricane Sandy, by Category
(Source: FEMA Region II, Public Assistance)

Event Name/Public Assistance Category	A	B	C	D	E	F	G	Total
Tropical Storm Irene	\$16,540	\$0	\$0	\$0	\$20,203	\$0	\$0	\$36,743
Hurricane Sandy	\$15,531	\$24,038	\$0	\$0	\$1,000	\$0	\$0	\$40,569
Total	\$32,071	\$24,038	\$0	\$0	\$21,203	\$0	\$0	\$77,312



3.4 Wildfire

3.4.1 Type, Location and Extent

Compared to many other states (particularly in the west and southwest), New Jersey has a relatively low level of wildfire risk. However, the Borough of Helmetta is one of several jurisdictions in the County that has an elevated risk of wildfire compared to most other jurisdictions. As explained in the County portion of this plan, wildfire risk is a more dynamic phenomenon than other hazards. This is because risk is created by both static conditions such as the amount of burnable vegetation and the degree of wildland-urban interface, as well as changeable factors like the weather and presence of fuel load. Any truly accurate risk assessment for this hazard must consider real-time conditions. See the Wildfire section in the main plan for more details.

3.4.2 Previous Occurrences and the Probability of Future Occurrences

Previous occurrences of the wildfire hazards at the County level are discussed in detail in the main portion of this hazard mitigation plan (see Section X-X), and for reasons of brevity are not repeated here.

3.4.3 Wildfire Impacts and Vulnerabilities to the Hazard

The present subsection considers two of the static factors as the basis for a risk discussion. The first of these is the presence of fuel hazard in the community. In this respect, Helmetta is about average among jurisdictions in Middlesex County with at least some wildfire risk. The community has no areas of extreme or very high fuel hazard; 0.12% of the high hazard area (0.014 square miles); 0.72% of the moderate hazard area (0.184 square miles); and 0.35% of the low hazard area (0.345 square miles).

The second wildfire risk factor is the amount of wildland-urban interface and intermix in the community (see main plan for definitions). Interface areas are those where the built environment is immediately adjacent to potential wildfire fuel sources, and intermix areas are those where potential fuel sources are spread throughout. As indicated in Table 6-17, Helmetta is somewhat above the County jurisdictional average in these categories, and thus may be considered at relatively higher risk based on these measures. Data in the table is based on the 2010 census.

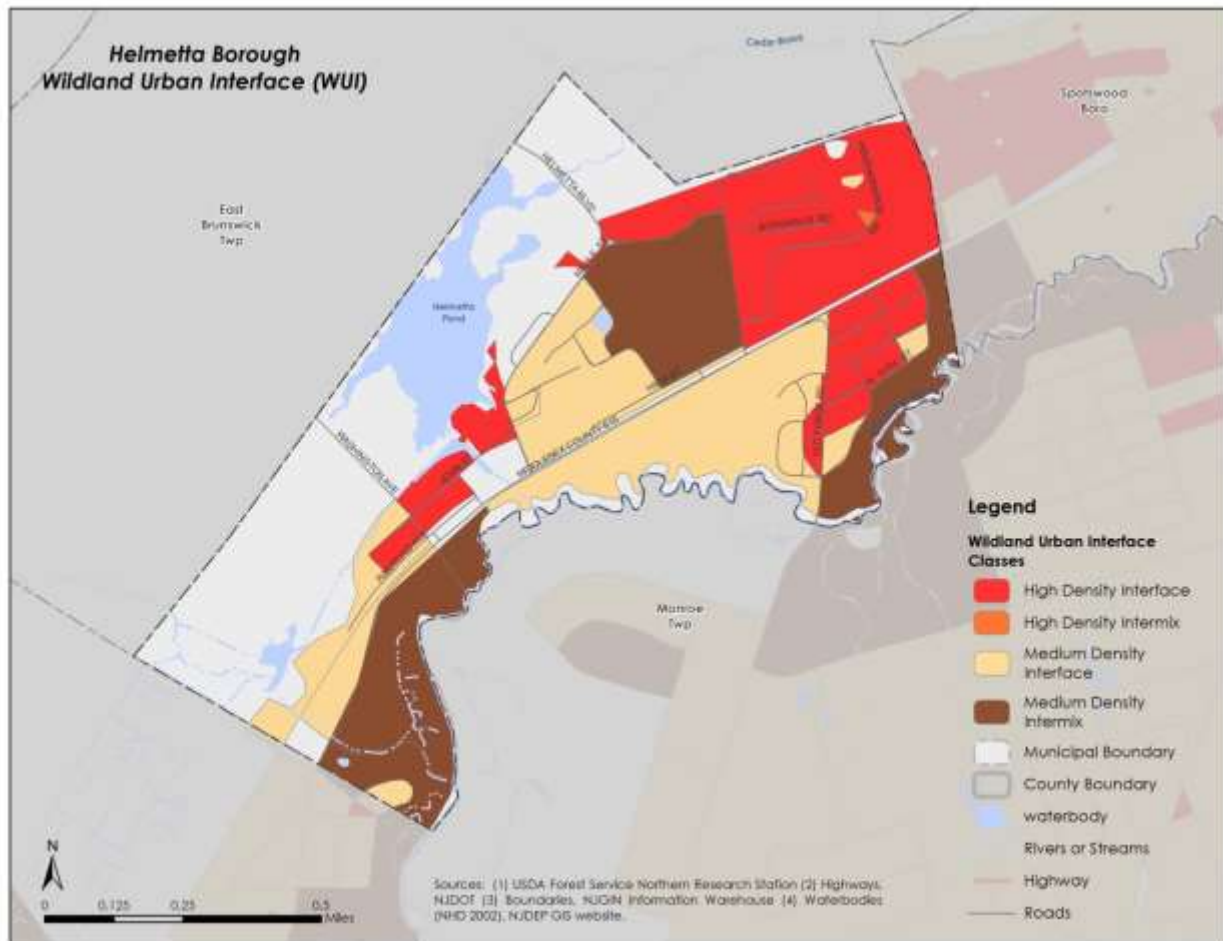
Table 6-17
Summary of Wildland-Urban Interface and Intermix Data, Borough of Helmetta

	Housing Units	Population
High-density interface	602	1,373
High-density intermix	2	2
Medium-density interface	205	521
Medium-density intermix	173	474

Figure 6-3 shows areas of wildland-urban intermix and interface in Helmetta. The intermix is spread over much of the eastern and northeastern parts of the community. These are well-forested areas that are close to developed residential neighborhoods.



Figure 6-3
Wildland-Urban Wildfire High- and Medium-Density Interface and Intermix Zones, Borough of Helmetta



Absent a more detailed evaluation of fuel loads and characteristics of the structures that are near burnable areas it is not possible to complete a quantitative risk assessment of the wildfire hazard. The areas of highest vulnerability are clearly those nearest to vegetation, but, generally speaking, fire detection and suppression capabilities are very good in this area of the country, and this significantly reduces wildfire risk.



4. Capability Assessment

Each community within the planning area has a unique set of capabilities and priorities that affect its mitigation strategy. The following tables detail the capabilities assessed for the Township of Cranbury during this plan update.

4.1 Planning and Regulatory

Tool / Program (code, ordinance, plan)	(Yes/No)	Code Citation and Comments
Master Plan	Y	
Capital Improvements Plan	-	
Floodplain Management / Basin Plan	-	
Stormwater Management Plan	Y	
Open Space Plan	-	
Stream Corridor Management Plan	-	
Watershed Management or Protection Plan	-	
Economic Development Plan	-	
Comprehensive Emergency Management Plan	-	
Emergency Operation Plan	Y	
Post-Disaster Recovery Plan	-	
Transportation Plan	-	
Strategic Recovery Planning Report	-	
Zoning Ordinance	Y	
Subdivision Ordinance	Y	
NFIP: Cumulative Substantial Damages	-	
Growth Management Ordinances	-	
Site Plan Review Requirements	Y	
Stormwater Management Ordinance	Y	
Municipal Separate Storm Sewer System (MS4)	Y	
Combined Sewer Overflows (CSO)	-	
Natural Hazard Ordinance	-	
Post-Disaster Recovery Ordinance	-	
Real Estate Disclosure Requirement	-	
Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	-	

4.2 Staff/Personnel

Resources	Is this in place? (Y/N)	Department/ Agency/Position
Planning Board	Y	
Mitigation Planning Committee	-	
Environmental Board/Commission	-	
Open Space Board/Committee	-	
Economic Development Commission/Committee	-	
Maintenance Programs to Reduce Risk	-	
Mutual Aid Agreements	Y	W/ EMS in Spotswood
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	



Resources	Is this in place? (Y/N)	Department/ Agency/Position
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	
Planners or engineers on staff with a strong understanding of natural hazards	-	
NFIP Floodplain Administrator	Y	
Surveyors	-	Engineering Consultant
GIS layers and maps	-	
Personnel trained in GIS	-	
Personnel trained in HAZUS	-	
Emergency Manager	Y	
Grant Writer	-	
Staff with expertise in cost/benefit analysis	-	
Professionals trained in conducting damage assessments	-	

4.3 Education/Outreach and Community Classifications

Program	Do you Participate in/Use this Program (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	N		
Building Code Effectiveness Grading Schedule (BCEGS)	Y		
Public Protection (ISO Fire Protection Classes 1 to 10)	-		
Storm Ready	-		
Firewise	-		
Disaster/Safety Programs in/for Schools	-		
Organizations with Mitigation Focus (advocacy group, non-government)	-		
Public Education Program/Outreach (through website, social media)	Y		
Public-Private Partnerships	-		

4.4 Fiscal Capabilities

	Yes/No
Do you have a line item in your operating budget for mitigation project funding?	N
If no, will you look at mitigation actions when allocating funding in the future?	Y
Do you have a line item in the Capital Improvement Budget for mitigation project funding?	N/A
Have you provided funding for mitigation projects identified in the hazard mitigation plan?	-
Does your town have the authority to Levy Taxes for specific purposes?	Y
Does your town have user fees for water, sewer, gas or electric service?	W/S
Do you impose impact Fees for homebuyers or developers of new development/homes?	Y
Does your community have an open space acquisition fund?	-
Do you use bonds to finance projects (general obligation bonds, special tax bonds, private activity bonds)	Y



5. Mitigation Strategy

This section describes what projects, initiatives, and other actions the Borough has undertaken or plans to implement to reduce risk and loss within its jurisdiction. This includes the status of previously identified actions and any other projects that have been completed since the 2010 Plan was adopted. The additional actions were determined by the LPC based on self-determined priorities and experience.

5.1 Past Mitigation Actions

The table below lists the mitigation projects and actions that were included in the original 2010 Plan.

Mitigation Action	Responsible Party	Status
Helmetta 1: Improvements to Helmetta Dam (Current County Project)	County	Completed
Helmetta 2:- Work with County and South Central Middlesex County Flood Commission to dredge Cranberry Bogs to increase holding capacity	Municipal OEM/ South Central Middlesex County Flood Commission	This is an ongoing effort that is difficult to get permitted.
Helmetta 3: Develop and execute a public outreach program to promote mitigation practices	County and Municipal OEM	This is still a priority, but the Borough has limited capacity and resources.
Helmetta 4: Eliminate sanitary sewer infiltration and manhole rehabilitation near Snuff Mill (non-maintenance costs only)	Municipal Department of Public Works/ Engineering	Completed

5.2 Other Mitigation Activities

The County has two ongoing culvert projects on 615 to improve drainage that floods out the only main thoroughfare in the Borough. These projects are currently underway. This project should reduce flooding at the Borough’s Fire Station. The Borough has been working on infrastructure improvements to reduce infiltration into stormwater and sewer systems to reduce backflooding in Borough.

5.3 Proposed Mitigation Actions

The table below details the mitigation initiatives the Borough of Helmetta would like to pursue to minimize future effects of hazard events. These actions have been determined through a local assessment of current risk and needs. The LPC met with the Plan Consultant to review all hazard and risk assessment data and evaluate the strategy. These initiatives are dependent upon funding and may



change based on municipal priorities and future hazard events.

For each new mitigation action, the Borough has ranked as ‘High’, ‘Medium’, or ‘Low’, based on the evaluation criteria outlined in Section 5.

Proposed Action	Anticipated Benefits	Responsible Party	Funding or Implementation Mechanism	Approximate Cost	Timeline	Priority
Install generator at Borough Hall	Allow continuity of government during hazard events, EOC and Police Department are both located at Borough Hall.	OEM	Capital Funds or HMA grants	\$450,000	1-3 years	High
Elevation or acquisition of repetitive loss properties that are not mitigated by ongoing drainage projects	Reduction in property losses in Borough	Administration/ State of NJ	Grants	Varies	1-3 years	High
Continued participation and support of the South Central Middlesex County Flood Control Commission	Implementation of USACE recommended mitigation strategies to reduce repetitive loss within the Borough	Middlesex County	Existing Resources	Varies	Ongoing	High



6. Plan Implementation

The LPC shall document, as needed and appropriate:

- Hazard events and losses in Helmetta 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,
- 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

Continued Public Input

The Borough of Helmetta 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.

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: Middlesex County Office of Emergency Management c/o All Hazards Pre-disaster Mitigation Plan Coordinator, 1001 Fire Academy Drive, Sayreville, NJ 08872.

The Borough of Helmetta'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 Helmetta 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.

Plan Adoption

On [insert date] Middlesex County submitted the initial draft of the 2015 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 Middlesex County Board of Chosen Freeholders for adoption, which occurred on [insert date].

The Borough Council approved the plan on [insert date]. The Borough resolution for adoption is provided below, the County's adoption resolution is provided as Appendix F of the 2015 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 G.

Plan Maintenance

The Borough of Helmetta 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 Director of the Department of Public Works 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 H. 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 Director of the Department of Public Works 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 Helmetta will provide Middlesex County with a copy of the written notice of any changes to the jurisdictional appendix at the time such changes are implemented.