



Appendix 18: Township of Plainsboro

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

1. Plan Development

On March 11, 2015, the Mayor signed an “Intent to Participate” letter and the Township Committee passed a resolution. The Mayor assigned the OEM Coordinator to work with other municipal employees, consultants, volunteers, and other stakeholders through the formation of a Local Planning Committee, as listed below. The local planning committee filled out the municipal worksheets included in Appendix E and worked to gather the necessary information to support the plan update. Members of the LPC attended the Coordinator’s Meetings in April and June, the project kick-off meeting in April, and met with the planning consultant on June 25th. The LPC reviewed all drafts of this appendix prior to adoption.

Table 18-1: Township of Plainsboro Local Planning Committee Members

Name	Title	Organization
Kevin Schroeck	Patrol/OEM	Plainsboro PD
Eamon Blanchard	Sergeant	Plainsboro PD
Brian Wagner	Fire Chief	Plainsboro VFD
Brian Gould	EMS Chief	Plainsboro EMS
Neil Blitz	Director	Plainsboro DPW
Brian Miller	Director	Plainsboro Building
Les Varga	Director	Plainsboro Planning/Zoning
Anthony Cancro	Township Administrator	Plainsboro Township



2. Community Profile

2.1 Physical Location

The Township of Plainsboro has a total area of 12.21 square miles and is located in the southwest corner of Middlesex County, New Jersey. It sits adjacent to the Cranbury on the east and South Brunswick on the north and east. Plainsboro is bordered by the Mercer County towns of West Windsor to the south and Princeton to the west. Primary transportation routes include Route 1, County Route 614, and County Route 683. New Jersey Transit provides bus service and the New Jersey Turnpike is accessible via neighboring municipalities. There is not a commuter rail stop in Plainsboro, but the NJ Transit Rail line bisects the township.

2.1.1 Hydrography and Hydrology

The Township of Plainsboro is located entirely in the Raritan Basin, and has three sub-watersheds; Cranbury, Devils Brook, and Millstone. In the northwest corner, Devils Brook enters Plainsboro from South Brunswick Township and flows southwest into a large artificial lake, and then continues on, southwest, feeding into Millstone River. In the middle of the eastern boundary, Cedar Brook enters Plainsboro from Cranbury Township, creating a boundary line between the two townships. Cranbury Brook flows across the southern portion of Plainsboro, flowing east to west, before draining into Millstone River. The Millstone River is the southern boundary between Plainsboro and West Windsor Township, and flows northwest, and drains into the Delaware and Raritan Canal.

2.2 History and Governance

The Township of Plainsboro was formally incorporated on May 6, 1919 from East Windsor and South Brunswick Townships. Plainsboro is governed under the Township Committee form of government, with five Council members elected at-large. The Mayor and Deputy Mayor are selected from the Committee each January. Council members are elected to serve three-year terms on a staggered basis, with one to two seats coming up for election every year. The Township 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 22,999.¹ This is a 13.8% increase from 2000. The Township of Plainsboro has a population density of 1,952 persons per square mile. It is the 21st densest municipality within the County. Plainsboro has a large Asian community, constituting almost half of the Township's population, to include those of Indian and Chinese heritage and/or origin. A summary of major population and household characteristics may be found in the following tables.

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



Table 18-2: Township of Plainsboro Population Summary Estimates (2010 Census) ²

Population	Quantity	Percent of Municipal Population
Total Population	22,999	100
Median Age	35.5	N/A
17 years and under	5,677	24.7
65 years and over	1,721	7.1
Race		
White	9,445	45.1
Black/African-American	1,847	8.0
Native American/Alaskan Native	69	0.3
Asian	10,630	46.2
NOTE: Asian Indian	6,818	29.6
NOTE: Chinese	2,563	11.1
Native Hawaiian/Pacific Islander	4	0.0
Other Race (unspecified)	404	1.8
Two or More Races	600	2.8
Hispanic or Latino	1,429	6.2

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 18-3: Township of Plainsboro Household Characteristics Summary Estimates (2010 Census) ³

Households	Quantity	Percent of Total
Total Households	9,402	100
Family Households (related)	5,890	62.6
Family Households w children under 18	3,435	36.5
Non-Family Households (unrelated)	3,512	37.4
Non-Family Households, living alone	2,935	31.2
Non-Family Households, living alone Male over 65 years	114	1.2
Non-Family Households, living alone Female over 65 years	242	2.6

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

² Ibid.

³ Ibid.



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 Plainsboro include (but may not be limited to) the following:

Table 18-4: Township of Plainsboro Vulnerable Population Estimates (2010)

Population Type	Population Estimate (2010 Census) ⁴
Under 5 years of age	1,421
Under 18 years of age	5,677
Over 65 years of age	1,721
Limited English Proficiency (LEP)	2,918 (equals 13.5% of population over 5 years old)
Institutionalized	187
Living in Group Quarters	7

An assisted living and rehabilitation facility is present along with independent-living senior housing on Windrows Drive, west of Route 1. A second rehabilitation and assisted living facility, Merwick Rehabilitation Center, is located on Plainsboro Road near Route 1.

In addition to these statistics, approximately 3.5% of the population lives below the poverty line. The mean household income is \$121,070, with the per capita income at approximately \$48,832 (2013 estimates).⁵

⁴ Ibid.

⁵ U.S. Bureau of the Census. American Fact Finder "Plainsboro Township, NJ". <http://factfinder.census.gov/>. Retrieved 8/16/15.



2.4 Land Use and Development

The Township of Plainsboro has a mixture land uses, though the majority of parcels are assessed as residential properties. Historically, the Township had been predominately rural with mostly farmland. Recent roadway improvements have made the Township’s location appealing for pharmaceutical and light industrial sectors, apartment and townhome complexes, and suburban commercial centers. Just over half the land in the Township is classified as “urban”; the remaining land is divided among farmland, forested areas, and wetlands. Many areas of the Township still maintain a rural character, and the Township has created zoning to protect these areas. In terms of parcel allocation, over 92 percent of the assessed parcels are considered residential properties.

Since 2010 there has not been continual growth within the Township, but there have been two areas that have intensified in use and development. Adjacent to Route 1, a new hospital was put into a redevelopment area with supporting medical offices and uses in neighboring parcels. A second development of residential units was built north of this area, also in proximity to Route 1. Neither of these developments was built in high-risk areas nor has increased the risk of the Township.

Table 18-5: Township of Plainsboro Land Cover Summary

Land Cover Class	Percent of Total Land ⁶	2002 (acres)	2007 (acres)	2012 (acres)	Percent Change ⁷
Agriculture	12.83%	1157.65	1042.31	994.85	-14.06%
Barren Land	0.61%	229.77	20.73	46.91	-79.58%
Forest	11.52%	818.92	844.82	892.90	9.03%
Urban	53.11%	3802.53	4143.81	4116.43	8.25%
Water	3.40%	253.96	259.58	263.18	3.63%
Wetlands	18.54%	1488.35	1439.94	1436.91	-3.46%

2.4.1 Open Space

The Township of Plainsboro is very proactive in conserving its open land. A number of Township, County, and State-owned preserves adjacent to natural watercourses and wetland areas help to preserve the rural character of the community and reduce exposure to natural hazards. Currently, there are over 1,500 acres of dedicated open space within the Township. Approximately 52 percent of this open space is located within the Special Flood Hazard Area.

The Township also participates in the State’s Farmland Preservation program. There are 7 participatory farms in the program that encompass over 600 acres of farmland in the Township. That is nearly 2/3 of the acreage classified as Agriculture by the NJDEP in 2012.

⁶ Percent based on acres of land in 2012

⁷ Change is calculated between 2002 and 2012



2.4.2 Buildings and Development

Approximately 70 percent of the buildings in the Township were built after the adoption of the FIRM. Most of these would likely have been built to modern building codes, regulations, and standards. The Township has adopted all State requirements to ensure future development is built to minimize risk to persons and property.

The Township’s proximity to major roadways and the Northeast Corridor makes it appealing for residents. As seen in Table 18-6 approximately 50 percent of the occupied housing units are rented. The remaining homes are owner-occupied.

Table 18-6: Township of Plainsboro Housing Statistics

Housing Characteristics ⁸	Estimate
Total Occupied Housing Units	9,107
Percent Owner-occupied	4,592
Percent Renter-occupied	4,515
Percent built after 2000	13.5
Percent built before 1979	29.1

2.4.3 Recent and Expected Development

Below are the major development projects reported by the Township that have been approved, or constructed, since 2010.

Project Name	Type	Number of Structures	Locations	Known Hazards	Description/Status
Redevelopment Area, Hospital, Adjacent Development	Medical	N/A	1-7 Plainsboro Road	Floodplain	Hospital has been completed
Princeton Forrestal Village Apartments	Residential	394	College Road	n/a	Unk.

⁸ Ibid.



2.5 Critical Facilities and Infrastructure

2.5.1 Essential Facilities

The Township of Plainsboro has a municipal center that houses most municipal operations. The Township has a police department, paid fire department services during regular business hours as well as a volunteer fire department to supplement, paid township EMS services during regular business hours as well as a volunteer rescue squad to supplement, a recreation center and a library. The library and recreation center are designated warming/cooling stations. There is also a senior complex on Windrow Drive that operates as a warming/cooling station for residents.

2.5.2 Transportation

The Township sits between the parallel routes of Route 1, Route 130, the NJ Turnpike, and the Northeast Corridor Rail-line. Route 1 and the Northeast Corridor run through the Township, though there is not a rail station within the Township. Several roadways including Scudders Mill and Dey Road connect the surrounding major roadways within the Township. These connectors are heavily trafficked throughout the day.

There is a NJ Transit bus line that also services the Township, as well as a private bus operator for trip to New York City. The Middlesex County Area Transit (MCAT) and the Tiger Shuttle from Princeton University also service the Township. The Greater Mercer Transportation Management Association provides rides to select destinations for senior residents.

2.5.3 Critical Utilities and Infrastructure

The Township of Plainsboro does not operate its own utilities. The Township is serviced by PSE&G for its energy supply and New Jersey American Water for its water supply. Sewerage services are provided by either the Stony Brook Regional Sewerage Authority, United Water at Princeton Meadows, privately owned treatment facilities, or subsurface disposal systems. At the time of the Master Plan adoption in 2009, the Middlesex County Utilities Authority did not service any land within the Township. However, there is land within the Township that falls within the MCUA's service area. The Township does have several pump stations. To date this infrastructure has not experienced flood damage.



3. Hazard Identification and Risk Assessment

This section describes the natural hazards and risks that can affect the Township of Plainsboro. Like all the other municipalities in Middlesex County, Plainsboro 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 18-7 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 18-7
Township of Plainsboro
Hazard Identification and Prioritization

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



3.2 Flood Hazard

3.2.1 Type, Location, and Extent

The Township of Plainsboro is located in far southwest Middlesex County. There are three sources of flooding in the jurisdiction: Cranbury Brook, which flows east to west and is located in the southern third of Plainsboro; Devils Brook, which has numerous small tributaries in the northeast part of Plainsboro, and flows roughly northeast to west; Shallow Brook, which is found in the northeast section of the jurisdiction, flows southwest, and is one of the tributaries to Devils Brook; and, Millstone River, which forms the southern border of Plainsboro. As shown in Figure 18-1 below, areas of floodplain are generally limited to areas immediately adjacent to these sources, with the exception of the Plainsboro Preserve, which is northeast of the intersection of Shallow Brook and Devils Brook. The area is home to a very wide and undeveloped floodplain.

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.⁹ At the time the Middlesex County HMP was being updated, the *effective* FIRM for the Town of Plainsboro 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 18-1. It shows that all the 100- and 500-year floodplain in the jurisdiction is related to the flood sources described above.

⁹ FEMA online - Floodplain Management. Flood Insurance Rate Map (FIRM) definition



Figure 18-1
Town of Plainsboro portion of FEMA Revised Preliminary Flood Insurance Rate Map
(Source: FEMA Region II, Coastal Analysis and Mapping, Preliminary FIRM, September 19, 2014)

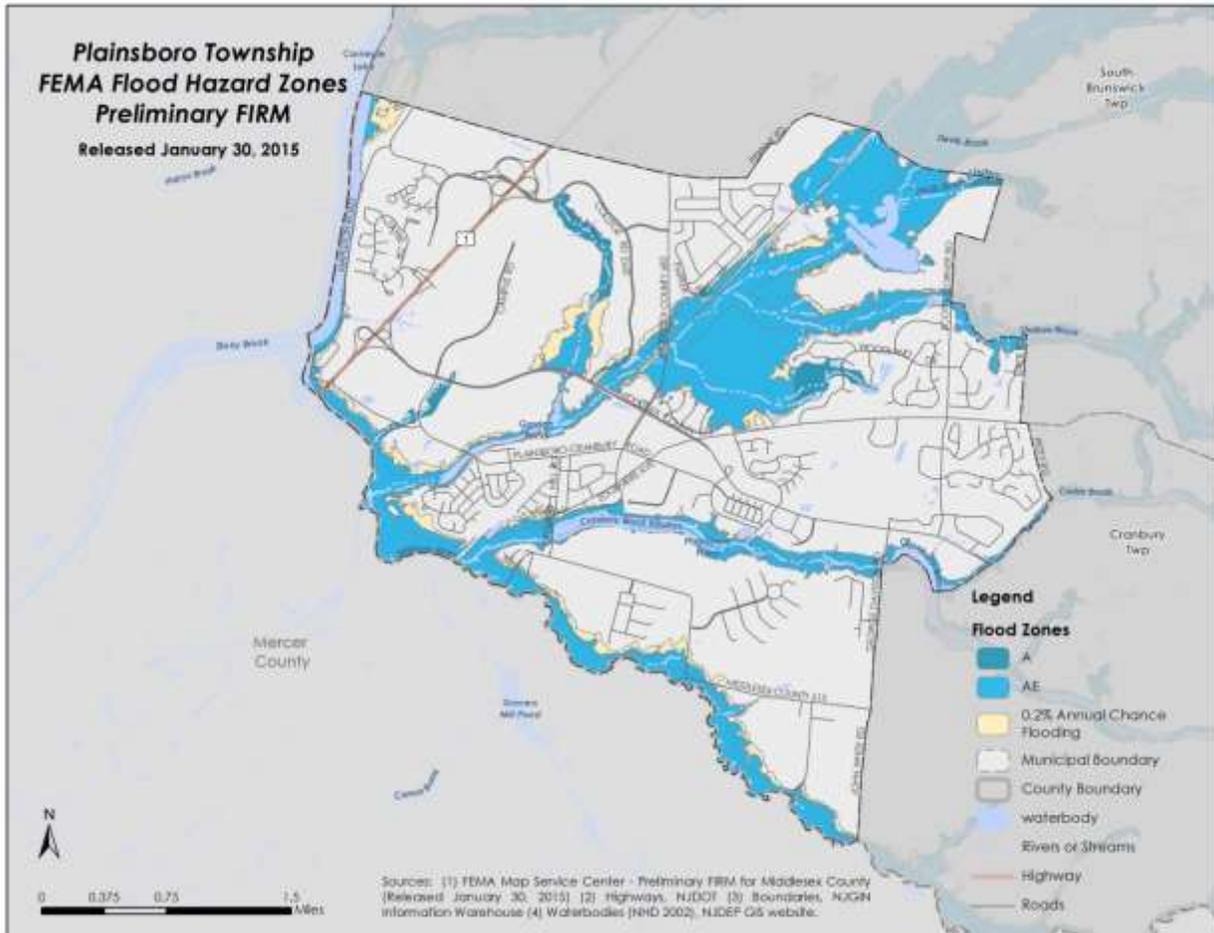


Table 18-8 provides basic information about floodplain and parcels subject to flooding within the jurisdiction based on the Preliminary FIRM. Note that although a large percentage of Plainsboro is within the FEMA Special Flood Hazard Area (SFHA), relatively few parcels are within that zone.

Table 18-8
Floodplain and Parcel Data for the Town of Plainsboro
(Source: FEMA Region II, Coastal Analysis and Mapping, Preliminary FIRM, September 19, 2014)

Data Type	Value
Jurisdiction area in square miles	12.11
Square miles within 100-year floodplain	2.76
Percentage of jurisdiction within 100-year floodplain	22.79%
Number of parcels in jurisdiction	5,976
Number of parcels with centroids within 100-year floodplain	80
Percentage of parcels with centroids within 100-year floodplain	1.34%



[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 in Plainsboro is very minor, based on a review of GIS materials and flood insurance claims. For most or all of the community, the maximum expected flood depths are probably less than two feet.

3.2.2 Previous Occurrences and the Probability of Future Floods

Of the 15 flood insurance claims paid since Plainsboro entered the National Flood Insurance Program (NFIP), all but two were related to Tropical Storm Irene. Given the jurisdiction’s inland location and lack of flood history, the probability of future flooding is probably about the same as it has been in the past.

3.2.3 Flood Impacts and Vulnerabilities to Flooding

The impacts from past floods in this jurisdiction have been minimal, as indicated by flood insurance claims records. Vulnerabilities appear to be negligible because there is little or development in or near floodplains in this community.

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 NFIP. There is a discussion of the NFIP in the County section of this hazard mitigation plan. Plainsboro has been a member of the NFIP since 1985.

Number of Parcels:	
Plainsboro:	5,976
Middlesex County:	283,276
Number of Policies In-Force:	
Plainsboro:	47
Middlesex County:	4,489
Number of Claims:	
Plainsboro:	7
Middlesex County:	3,478
Total Paid Claims	
Plainsboro:	\$72,383
Middlesex County:	\$109,727,837

FEMA NFIP statistics indicate that as of February 2015, federal flood insurance policies were in-force on 47 properties in Plainsboro. Between 1978 and 2015, there have been a total of seven NFIP insurance claims in the jurisdiction, with a total claims value of \$72,383.¹⁰ Table 18-9 compares the number of policies in-force and paid claims in the jurisdiction. The table shows that Plainsboro comprises less than one percent of the NFIP policies in-force in Middlesex County.

The Township 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

¹⁰ FEMA – Policy and Claim Statistics for Flood Insurance



communities, flood insurance premium rates are discounted in increments of 5% based on creditable activities.¹¹ CRS communities are ranked between 1 and 10, with Class 1 communities receiving a 45% premium discount.

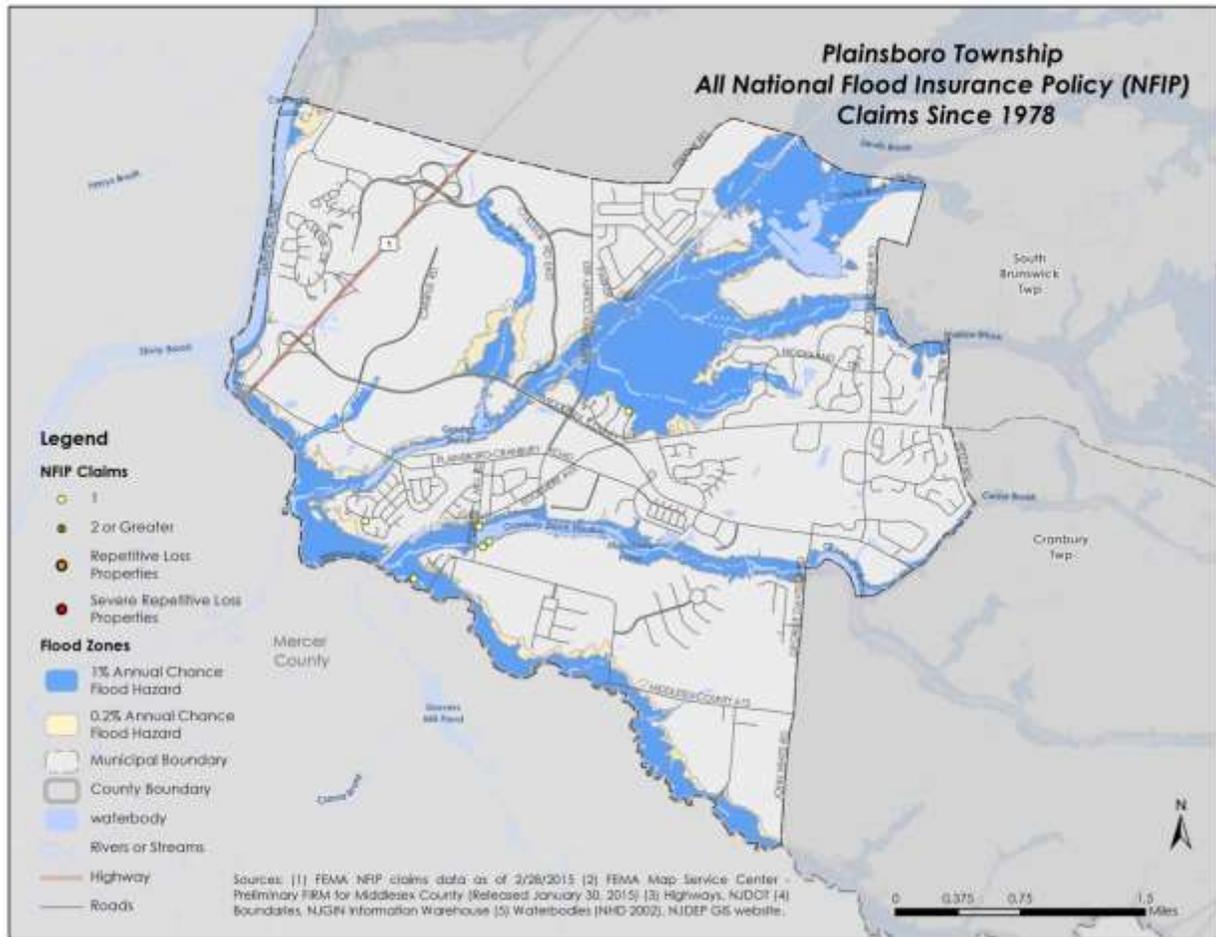
It should be noted that NFIP claims are not a direct or completely accurate proxy for flood risk in a community. The data does not include flood damages to structures that had no flood insurance. Also, in some cases, structures or contents may have been underinsured. The NFIP claims data also does not 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.

¹¹ FEMA – Community Rating System (CRS).



Figure 18-2 shows all NFIP claims in Plainsboro between 1978 and 2015.

Figure 18-2
Map of NFIP Claims in the Town of Plainsboro (1978 to 2015),
Including Repetitive Loss and Severe Repetitive Loss Properties
(Source: FEMA National Flood Insurance Program, February 2015)



The average NFIP flood insurance claim in Plainsboro is \$10,340, far below the County average of \$31,549, suggesting very low levels of flooding when events do occur.

3.2.5 Flood Risk to Repetitive Loss Properties in Plainsboro

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, Plainsboro has no RL properties. See Section 4 of the County portion of this HMP for more details on repetitive loss properties in the County.

3.2.6 Flood Risk to Severe Repetitive Loss Properties in Plainsboro

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, Plainsboro has no SRL properties.

3.3 Hurricanes and Tropical Storms

Early in the mitigation plan update process, Plainsboro provided some information about damages and activities related to Tropical Storm Irene, in 2011. The community reported numerous road closures for multiple days, utility outages across the area for multiple days. Numerous roadsides and drainage swales were compromised because of the flooding, and Cranbury Neck Road was partially washed out. The local Department of Public Works assisted residents and other departments with evacuation procedures. The total cost to DPW was \$53,512, including overtime, brush removal and equipment costs.

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 that was generated by FEMA’s HAZUS-MH software (version 2.1, 2014). The calculations in Table 18-10 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.

3.2.2 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 18-11 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 18-10
Probabilistic Wind Risk in Plainsboro 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	10,306,669	\$297,827	\$80,935	\$0	\$15,684	\$44	\$11,251	\$105
Commercial	3,068,113	\$28,628	\$11,976	\$129	\$4,466	\$2,976	\$2,657	\$2,182
Industrial	2,270,677	\$18,383	\$11,782	\$1,420	\$1,215	\$127	\$184	\$211
Agricultural	17,550	\$150	\$77	\$9	\$23	\$1	\$1	\$1
Religious	124,692	\$1,182	\$431	\$0	\$163	\$79	\$14	\$186
Government	151,273	\$1,067	\$556	\$0	\$237	\$11	\$62	\$864
Education	96,539	\$750	\$327	\$0	\$136	\$30	\$5	\$71
Totals	16,035,512	\$347,986	\$106,085	\$1,558	\$21,924	\$3,268	\$14,175	\$3,617

Table 18-10
Probabilistic Wind Risk in Plainsboro 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	\$405,846	\$5,601,074	\$5,791,010
Commercial	\$53,013	\$731,632	\$756,442
Industrial	\$33,321	\$459,869	\$475,464
Agricultural	\$263	\$3,623	\$3,746
Religious	\$2,056	\$28,369	\$29,331
Government	\$2,797	\$38,600	\$39,909
Education	\$1,319	\$18,203	\$18,820
Totals	\$498,614	\$6,881,370	\$7,114,722

Table 18-11
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	\$38,771	\$16,784	\$0	\$0	\$0	\$0	\$0	\$55,556
Hurricane Sandy	\$162,191	\$69,086	\$0	\$0	\$0	\$0	\$0	\$231,277
Total	\$200,962	\$85,871	\$0	\$0	\$0	\$0	\$0	\$286,833



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 Plainsboro during this plan update.

4.1.1 Planning and Regulatory

Tool / Program (code, ordinance, plan)	(Yes/No)	Code Citation and Comments
Master Plan	Y	1/20/09
Capital Improvements Plan	Y	Municipal Code Chapter 66
Floodplain Management / Basin Plan	Y	
Stormwater Management Plan	Y	
Open Space Plan	Y	In Master Plan
Stream Corridor Management Plan	N	NJDEP Regulations used
Watershed Management or Protection Plan	N	Various Code sections
Economic Development Plan	Y	Part of Master Plan
Comprehensive Emergency Management Plan	N	EOP
Emergency Operation Plan	Y	Current revision in progress
Post-Disaster Recovery Plan	N	
Transportation Plan	Y	Part of Master Plan
Strategic Recovery Planning Report	N	
Zoning Ordinance	Y	Municipal Code Chapter 101
Subdivision Ordinance	Y	Municipal Code Chapter 85
NFIP: Cumulative Substantial Damages	N	
Growth Management Ordinances	N	
Site Plan Review Requirements	Y	Municipal Code Chapter 85
Stormwater Management Ordinance	Y	Municipal Code Chapter 85
Municipal Separate Storm Sewer System (MS4)	Y	CME
Combined Sewer Overflows (CSO)	N	N/A
Natural Hazard Ordinance	Y	
Post-Disaster Recovery Ordinance	N	
Real Estate Disclosure Requirement	N	
Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	N	

4.1.2 Staff/Personnel

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



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	Dept. of Code Enforcement/Building Dept./DPW
Planners or engineers on staff with a strong understanding of natural hazards	Y	Dept. of Planning and Zoning
NFIP Floodplain Administrator	Y	CME
Surveyors	Y	CME
GIS layers and maps	Y	CME
Personnel trained in GIS	Y	CME
Personnel trained in HAZUS	N	
Emergency Manager	Y	Deputy Mayor
Grant Writer	Y	All Departments
Staff with expertise in cost/benefit analysis	N	
Professionals trained in conducting damage assessments	N	

4.1.3 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	One/Two Family – 4 All other - 3	2011
Public Protection (ISO Fire Protection Classes 1 to 10)	Y	Hydranted – 4 Non-Hydranted - 6	
Storm Ready	N		
Firewise	N		
Disaster/Safety Programs in/for Schools	Y		
Organizations with Mitigation Focus (advocacy group, non-government)	N		
Public Education Program/Outreach (through website, social media)	Y		
Public-Private Partnerships	N		

4.1.4 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
Have you provided funding for mitigation projects identified in the hazard mitigation plan?	Y
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?	N
Do you impose impact Fees for homebuyers or developers of new development/homes?	N
Does your community have an open space acquisition fund?	Y
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 Township 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	Review Comments
Plainsboro 1: Mapleton Road flood debris removed from drainage area	Plainsboro OEM/DPW	Completed	-
Plainsboro 2: George Davison Road Bridge debris removal	Plainsboro OEM/DPW	Completed	-
Plainsboro 3: Plainsboro Pond Dam Area debris removal to prevent flooding	Plainsboro OEM/DPW	Completed	-

5.2 Other Mitigation Activities

In addition to the above activities, the Township has secured a generator for the recreation center to ensure its use as a warming/cooling center.

5.3 Proposed Mitigation Actions

The table below details the mitigation initiatives the Township of Plainsboro 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 Township 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	Timeline	Priority
Secure All-Terrain Vehicles for emergency response and rescue	Provide access to all areas of town in emergency conditions	OEM	Grants/Capital Fund	2-3 years	Medium
Reduce repetitive flooding along Dey Road.	Ensure passage of major thoroughfare during moderate rain events	Engineering	Grants/EIT/Capital	1-3 years	High
Secure increased Communication for EOC (radios, consoles, etc.)	Ensure improved communications during emergency events	OEM	Grants/Capital	1-2 years	High



6. Plan Implementation

The LPC shall document, as needed and appropriate:

- Hazard events and losses in Plainsboro 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 Township.
- Copies of any grant applications filed on behalf of the Township

Continued Public Input

The Township of Plainsboro 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 Township of Plainsboro's LPC shall ensure that:

- Copies of the latest approved Plan are available for review at Township 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 Township of Plainsboro will post a notice on the Township's website and invite the public to review and comment.
- For major changes involving Township Council approval, the Township 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 Township Committee approved the plan on [insert date]. The Township resolution for adoption is provided below, the County's adoption resolution is provided as Appendix F of the 2014 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 Township of Plainsboro 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 OEM Coordinator 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 OEM Coordinator will convene a meeting of the LPC to review and approve all changes. The Township retains the discretion to implement minor changes to the document without formal procedures involving the Township Council subject to local policies and regulations.

In addition to the annual progress report, the Township of Plainsboro 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.