



Appendix 23: Borough of South River

The Borough of South River 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 are specific to the Borough and corresponding risk assessments; the Borough’s mitigation strategy, and a local capability assessment.

1. Plan Development

On July 22, 2014, the OEM Coordinator signed an “Intent to Participate” letter and assigned a point of contact for the HMP update. The OEM Coordinator worked with the Borough Administrator and other municipal employees, consultants, volunteers, and other stakeholders through the formation of a Local Planning Committee (LPC), 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. The LPC met with the Planning Consultant on June 15th, 2015. The members of the committee have reviewed all drafts and advised on all changes to this appendix. For the development of this appendix, in addition to the sources listed in Section 2, local planning documents were reviewed. These included, but were not limited to, the 2011 Master Plan, the Borough Strategic Recovery Planning Report, South River Fiscal Impact Report, the South River Floodplain Neighborhood Plan, and the Borough’s codified ordinances.

Table 23-1
Borough of South River Local Planning Committee Members

Name	Title	Organization
Frederick C. Carr	Borough Administrator	Administration
Arthur Londensky	OEM Director	OEM
Adriano Soares	Director Public Works	DPW
Donna Stoddard	Secretary DPW Director	DPW
Kim Bell	Director Office of Aging	Office on Aging
Glenn Lauritzen	Construction Official	Construction Department
Mark Tinitigan	Chief of Police	Police
Michael Kucharski	Lieutenant	Police
Sheryl Nevin	Deputy Borough Clerk	Clerk’s Office
Pat Geraldo	Captain SR First Aid	SR Rescue/ EMS
Bill Synek	Asst. Captain	SR Rescue/ EMS
Ronnie Zammit	Code Enforcement	Administration
Tony Ciulla	Council Member	Mayor and Council



2. Community Profile

2.1 Physical Location

The Borough of South River has a total area of 2.92 square miles and is located in the central region of Middlesex County, New Jersey. It sits adjacent to the South River and is surrounded on all other sides by East Brunswick Township. The Borough of Sayreville lies across the river from South River. Primary transportation routes include Route 18, County Route 535, and County Route 527. New Jersey Transit provides bus service and the New Jersey Turnpike is accessible via Route 18. There are no commuter rails in South River.

2.1.1 Hydrography and Hydrology

The Borough of South River is located on the banks of the South River, within the Raritan River Basin. The South River flows from Duhernal Lake in Spotswood and out to the Raritan River at Sayreville. It is formed by the confluence of Manalapan and Matchaponix Brooks, while other tributaries include Deep River and Tennants Brook. The South River is tidal as it flows past the Borough of South River, as the head of tide is just below the Duhernal Lake Dam.

2.2 History and Governance

The Borough of South River was formally incorporated on February 28, 1897. 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.

Prior to incorporation, South River was part of East Brunswick. At the time it was called Washington, as many communities in New Jersey were. It was named for the River at the time of incorporation and in 1897 changed from a village to a Borough.¹

2.3 Demographics

2.3.1 Population Trends

According to the U.S. Census Bureau, the population in 2010 was 16,008.² This is a 4.5% increase from 2000. The Borough of South River has a population density of 5,781 persons per square mile. It is the 6th densest municipality within the County of 25 municipalities. A summary of major population and household characteristics may be found in the following tables.

¹ South River Historical & Preservation Society, Inc. "South River Becomes a Borough". <http://www.rootsweb.ancestry.com/~njsrhps/history/incorporation.html>. Retrieved, 8/16/15.

² U.S. Bureau of the Census. American Fact Finder "South River Borough, NJ". <http://factfinder.census.gov/>. Retrieved 8/16/15.



Table 23-2
Borough of South River Population Summary Estimates (2010 Census) ³

Population	Quantity	Percent of Municipal Population
Total Population	16,008	100
Median Age	37.2	N/A
17 years and under	3615	22.6
65 years and over	1,893	11.8
Race		
White	12,195	76.2
Black/African-American	1,142	7.1
Native American/Alaskan Native	50	0.3
Asian	775	4.8
Native Hawaiian/Pacific Islander	9	0.1
Other Race (unspecified)	1,309	8.2
Two or More Races	528	3.3
Hispanic or Latino	2,913	18.2

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 23-3: Borough of South River Household Characteristics Summary Estimates (2010 Census) ⁴

Households	Quantity	Percent of Total
Total Households	5,652	100
Family Households (related)	4,018	71.1
Family Households w children under 18	1,837	32.5
Non-Family Households (unrelated)	1,634	28.9
Non-Family Households, living alone	1,297	22.9
Non-Family Households, living alone Male over 65 years	166	2.9
Non-Family Households, living alone Female over 65 years	405	7.2

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

³ Ibid.

⁴ 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 South River include (but may not be limited to) the following:

Table 23-4: Borough of South River Vulnerable Population Estimates (2010)

Population Type	Population Estimate (2010 Census)⁵
Under 5 years of age	1,003
Under 18 years of age	3,615
Over 65 years of age	1,893
Limited English Proficiency (LEP)⁶	2809 (equals 18.2% of population over 5 years old) ⁷
Institutionalized	0
Living in Group Quarters	11

In addition to these statistics, approximately 10.5% of the population lives below the poverty line. The mean household income is \$78,186, with the per capita income at approximately \$27,054 (2013 estimates).⁸

⁵ Ibid.

⁶ Of those that identified Limited English Proficiency, 45.5% speak Spanish as their primary language. Also identified are other Indo-European languages, Asian languages and other languages not specified in the Census.

⁷ 2013 American Community Survey Estimate

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



2.4 Land Use and Development

As a waterfront community, the Borough of South River strives to balance waterfront access and commerce while minimizing the risk to person and property within the municipality. For this reason the Borough has regulations and policies in place, including a waterfront development ordinance, to limit development in floodprone, environmentally sensitive, and high-risk areas. Since the 2010 Hazard plan, South River has experienced minimal new development. The Borough generally has small lot sizes and is densely populated. According to the 2011 Master Plan, the Borough does not expect new large residential developments.

South River is an older developed community, with over 76 percent of its 2,769 square miles of land area classified as urban/developed. According the Land Use/Land Cover data from NJDEP, the most significant land cover trend within the Borough is an increase in *Barren Land* between 2002 and 2012. The imagery source for this data is from spring 2012 and does not reflect impacts from Sandy.

2.4.1 Open Space

The Borough of South River has been rapidly expanding its open space, particularly within floodprone areas through property buyouts. The NJDEP Blue Acres program has purchased 54 homes within the Special Flood Hazard Area since 2013. As noted in the mitigation strategy, they are continuing to pursue additional buyouts. According to County and State GIS data, 205 acres in the town are dedicated open space. Nearly 50% of this is in the floodplain, which means that more than 26% of the Special Flood Hazard Area is the Borough is preserved. This does not include the recent acquisitions, and thus this percentage is greater than estimated in this plan.

Table 23-5
Borough of South River Land Cover Summary

Land Cover Class	Percent of Total Land ⁹	2002 (acres)	2007 (acres)	2012 (acres)	Percent Change ¹⁰
Agriculture	0	0	0	0	0
Barren Land	0.87%	8.44	18.40	16.26	92.60%
Forest	7.49%	161.74	142.28	140.34	-13.24%
Urban	76.49%	1413.36	1427.83	1432.73	1.37%
Water	4.90%	89.89	91.34	91.81	2.14%
Wetlands	10.24%	199.57	193.14	191.87	-3.86%

⁹ Percent based on acres of land in 2012

¹⁰ Change is calculated between 2002 and 2012



2.4.2 Buildings and Development

The Borough is an older community with over 85 percent of the buildings constructed before 1979 and just less than 4 percent built within the last 15 years. Approximately 82 percent of the parcels within South River are classified as residential based on tax assessment data. According to the 2011 Master Plan, the Borough is considering opportunities to expand its commercial base. The Borough does have some historic properties. There are 2 properties on the National Historic Registry, 1 property on the State’s registry, and 3 State Historic Districts including homes adjacent to the River across from the Hermann-Aukam Company’s factory.

Table 23-6
Borough of South River Land Cover Summary

Housing Characteristics	Estimate	Percent
Residential	5,798	
Owner-occupied	5,358	92.4
Renter-occupied	440	7.6
Percent built after 2000		.04
Percent built before 1979		85.6

2.4.3 Recent and Expected Development

The Borough reported only one major development since 2010, which was not located in an area vulnerable to any known hazards.

Table 23-7
Major Developments since 2010 in Borough of South River

Project Name	Type	Number of Structures	Locations	Known Hazards	Description/Status
Capital Court	Single Family	11	Capital Court	None	Completed



2.5 Critical Facilities and Infrastructure

2.5.1 Essential Facilities

The Borough of South River maintains 3 buildings for municipal purposes. Of these, the Human Services building at 55 Reid Street, which provides Senior services, among other municipal services, flooded during Sandy. This property has had the basement wet-floodproofed, elevated the utilities, and put generators in to maintain the sump pumps. These mitigation efforts were done to minimize future damage and minimize lapse in providing municipal services. The Borough has its own Police Department, volunteer fire company, and volunteer rescue squad. None of these facilities have experienced damage from previous hazard events.

2.5.2 Transportation

The Borough has one major County road, Route 535, which connects to the Borough to Sayreville. This road carries heavy truck traffic from high-industrial areas. There is also a single freight rail line within the Borough. NJ Transit also services bus routes through the Borough.

2.5.3 Critical Utilities and Infrastructure

The Borough of South River manages its own sewer lines, water utility, and electric utility. One of the few municipal electric distributors in the State, the Borough of South River is uniquely positioned to address local power outages. The Borough purchases the electricity on the open market and is serviced through a PSE&G transformer. They are still vulnerable to power outages when PSE&G experiences outages within that service area, but have the capability to address downed power lines and local outages quickly. PSE&G services the municipality with natural gas, which is used by nearly 90% of the residential homes within the Borough.¹¹

The Borough is responsible for distribution of water and collection of wastewater, which is transferred to the Middlesex County Utility Authority. There are multiple pump stations within the Borough. The Jackson Street pump station was severely damaged in Sandy. After the storm temporary pumps were put in place and a replacement pump station was rebuilt and finished in the summer of 2015. The Borough has worked to mitigate 2 pump stations to protect against future storm events.

¹¹ 2013 American Community Survey



3. Hazard Identification and Risk Assessment

This section describes the natural hazards and risks that can affect the Borough of South River. Like all the other municipalities in Middlesex County, the Borough of South River is potentially subject to the effects of all the hazards that are considered in this Countywide 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 Middlesex County Hazard Mitigation Plan (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. For the Borough of South River, this appendix includes Floods, Hurricanes/Tropical Storms, and Wildfire, because the risk of and recent history for the Borough is unique

Table 23-8
Borough of South River
Hazard Identification and Prioritization

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

**These hazards are analyzed in this appendix*

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 23-8 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.



3.2 Flood Hazard

3.2.1 Type, Location, and Extent

The Borough of South River is located in central Middlesex County. The entire eastern border of the jurisdiction is formed by the South River. South River runs south to north, draining to the Raritan River, which in turn leads to Raritan Bay to its east. Overbank events from the South River have caused nearly all the significant past flooding in the Borough. According to the March, 2014 *Strategic Recovery Planning Report* (Bignell Planning Consultants, Woodbridge, NJ), “(f)loodprone neighborhoods generally fall into four geographic areas: east of Whitehead Avenue, the entire Waterfront Revitalization District, the Ferry/Reid Street corridor, and north of Reid Street.” All these areas either border or are in close proximity to the west bank of the South River. These areas are subject to fairly regular tidal flooding (particularly when it occurs simultaneously with a storm) and periodic -- and generally more severe -- flooding during more significant events such as nor’easters and tropical storms. As discussed below, based on insurance claims history, the most damaging floods have been related to Hurricanes Irene (2001) and Sandy (2012), and two nor’easters.

The community survey indicates that a number of streets flood during relatively common heavy rain events. These include: Causeway, Water, Maple, Reid, Lee, Milton, Herman, Elizabeth, Browns Lane, Freeman, and Watts. Such events often result in the police being sent to deploy traffic cones to direct vehicles away from flooded areas.

Table 23-9 provides basic information about floodplain and parcels subject to flooding within the jurisdiction based on the Preliminary FIRM, released January 30, 2015.

Table 23-9
Floodplain and Parcel Data for the Borough of South River
(Source: FEMA Region II, Coastal Analysis and Mapping, Preliminary FIRM, September 19, 2014)

Data Type	Value
Jurisdiction area in square miles	2.92
Square miles within 100-year floodplain	0.74
Jurisdiction area within 100-year floodplain	25.21%
Number of parcels in jurisdiction	5,429
Number of parcels with centroids within 100-year floodplain	723
Parcels with centroids within 100-year floodplain	13.32%

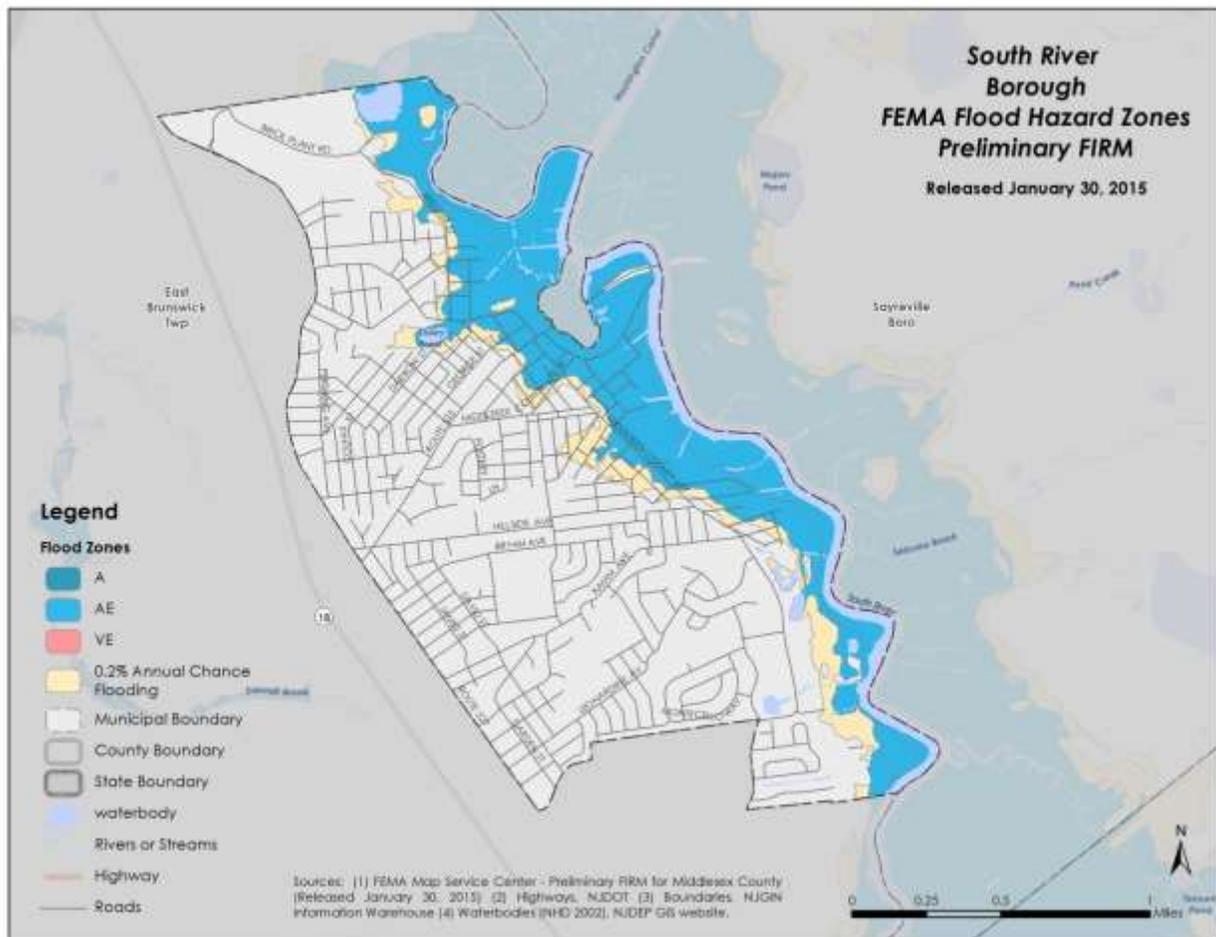
[Note: the table refers to centroids, which are the geographic center of a parcel. This is a better indicator of flood exposure than simple intersection with the floodplain, although it does not necessarily mean that any structures or infrastructure are within the boundaries of the Special Flood Hazard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

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 South River 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; the State regulates land use base on the Preliminary mapping). This map is shown below in Figure 23-1. It clearly shows that all the 100- and 500-year floodplain in the jurisdiction is related to the South River.

Figure 23-1
Changes in Floodplain Boundaries in the Borough of South River
(Source: FEMA Region II, Coastal Analysis and Mapping, Preliminary FIRM, January 30, 2015)



Current FEMA guidance uses the term *extent* as analogous to potential severity. The extent of the flood hazard in South River is significant. As discussed in the NFIP claims sections below, past flooding in the eastern part of the Borough has occurred fairly often. The most significant damages are strongly related to major hazard events, rather than more frequent heavy rainfall and/or poor drainage. There is no readily available source of reliable data about past flood depths in the eastern part of the Borough, but based on the size of the insurance claims (discussed separately), these areas have likely experienced



depths of several feet of flooding during major events on the river. This is also reflected in observed flood depths that have been reported in local publications and the aforementioned *Strategic Recovery Planning Report*

3.2.2 Previous Occurrences and the Probability of Future Floods

As noted above, most of the flooding in this jurisdiction is related to events exceeding the western bank of South River. Significant past floods include those related to nor'easters in December 1992 and March 2010, as well as Hurricanes Irene (August 2011) and Sandy (October 2012). As discussed in one of the subsections below, these events were responsible for the large majority of National Flood Insurance Program (NFIP) claims in the community. Analysis of floodplain maps and insurance claims suggests very little history of flooding from any sources other than the river.

3.2.3 Flood Impacts and Vulnerabilities to Flooding

The impacts from past floods in this jurisdiction have been significant. The numbers and magnitude of flood insurance claims suggest a high level of flood vulnerability in fairly large areas on the west bank of the South River. These are discussed in more detail in the subsections below.

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 South River has been a member of the NFIP since 1980.

Table 23-10
NFIP Policies and Claims

Number of Parcels:	
South River:	5,429
Middlesex County:	283,276
Number of Policies In-Force:	
South River:	187
Middlesex County:	4,489
Number of Claims:	
South River:	365
Middlesex County:	3,478
Total Paid Claims	
South River:	\$13,982,513
Middlesex County:	\$109,727,837

FEMA NFIP statistics indicate that as of February 2015, federal flood insurance policies were in-force on 187 properties in South River. Between 1978 and 2014, there have been a total of 365 NFIP insurance claims in the Borough of South River, with a total claims value of \$13,982,513. ¹² Table 23-10 compares the number of policies in-force and paid claims in the jurisdiction. The Table shows that Borough of South River comprises 4.1% of the NFIP policies in-force in Middlesex County.

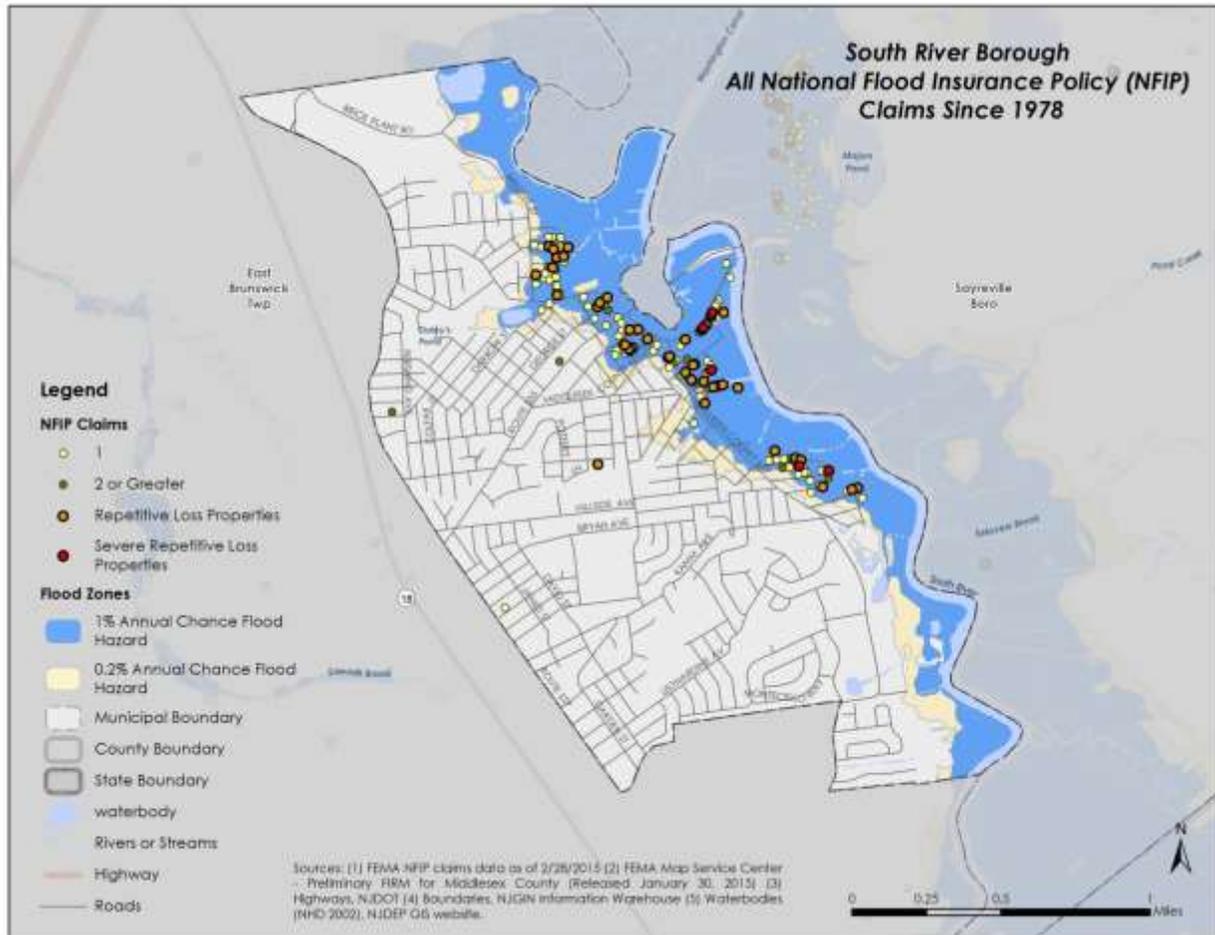
The Borough of South River joined the Community Rating System (CRS) program in October 2014. The CRS program, a voluntary program for communities participating in the NFIP, recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. For CRS participating communities, flood insurance premium rates are

¹² FEMA – Policy and Claim Statistics for Flood Insurance



discounted in increments of 5% based on creditable activities.¹³ CRS communities are ranked between 1 and 10, with Class 1 communities receiving a 45% premium discount. The Borough of South River is currently a Class 6 community.

Figure 23-2
Map of NFIP Claims in the Borough of South River (1978 to 2014),



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.

¹³ FEMA – Community Rating System (CRS).



**Table 23-11
NFIP Policies and Claims**

Repetitive Loss (RL) Properties:	
South River:	50
Middlesex County:	429
Total Building (RL)	
South River:	\$5,164,310
Middlesex County:	\$44,015,885
Total Contents (RL)	
South River:	\$390,915
Middlesex County:	\$5,106,609
Number of Claims (RL)	
South River:	146
Middlesex County:	1,322
Average Claim (RL)	
South River:	\$38,049
Middlesex County:	\$37,158
Severe Repetitive Loss Properties:	
South River:	6
Middlesex County:	77
Total Building	
South River:	\$799,788
Middlesex County:	\$14,512,761
Total Contents	
South River:	\$67,753
Middlesex County:	\$910,122
Number of Claims	
South River:	28
Middlesex County:	385
Average Claim	
South River:	\$30,984
Middlesex County:	\$40,059

Figure 23-2 shows all NFIP claims in South River between 1978 and 2014. Note the dense concentrations of claims along the west bank of the South River, with numerous repetitive loss and severe repetitive loss properties in that area. These are discussed in the subsections below.

3.2.5 Flood Risk to Repetitive Loss Properties in South River

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 Federal Mitigation Assistance (FMA) grant funding. The data about Repetitive Loss properties in this subsection are based on the previous definition. Under the revised definition above, South River has six RL properties. This updated number also accounts for the buyouts that have occurred within the Borough in the past 18 months. 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, 50 properties were located within South River; this comprises 11.7 percent of the County total. This data does not reflect the recent acquisitions by the Borough. Table 23-11 provides a comparison of the residential repetitive loss claims for Middlesex County and South River. 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 South River with the most insurance claims. For reasons of confidentiality and in conformance with the Federal Privacy Act, this mitigation plan does not show specific addresses.



Not only does South River comprise a disproportionate number of insurance claims, but as the table shows, the average amounts of claims are above the County average for RL properties. As with all NFIP claim data, this information only shows what the policyholder filed with the insurance company. If a home did not have a separate policy for contents, there would be no claim. That does not mean there was not damage to the contents of the structure.

Table 23-12
Streets in the Borough of South River with Highest Numbers and Amounts of NFIP Claims
(Repetitive Loss Properties)

(Source: FEMA National Flood Insurance Program, February 2014)

Street Name	Building	Contents	Total	# Claims	Average
Causeway Street	\$461,840	\$23,740	\$48,558,096	17	\$28,564
Ferry Street	\$374,981	\$22,346	\$397,327	7	\$56,761
Herman Street	\$522,530	\$199,508	\$722,038	18	\$40,113
Levinson Avenue	\$320,772	\$15,186	\$335,958	12	\$27,997
Maple Street	\$238,159	\$19,725	\$257,883	9	\$28,654
Water Street	\$220,405	\$0	\$220,404	8	\$27,551

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 23-13
100-Year Risk Projection for NFIP Repetitive Loss Properties in the Borough of South River

Data	Value
Period in years	21
Number of claims	146
Average claims per year	6.95
Total value of claims	\$5,555,225
Average value of claims per year	\$264,535
Projected risk, 100-year horizon	\$3,774,908

3.2.6 Flood Risk to Severe Repetitive Loss Properties in South River

The definition of Severe Repetitive Flood Loss is included in the County portion of this mitigation plan. As of February 2015, South River had six properties that fall under this definition, and all of Middlesex



County had 77. Table 23-14 provides basic information about the SRL properties in this jurisdiction. SRL properties are also shown graphically in Figure 23-2 above.

Table 23-14
Statistics on NFIP Severe Repetitive Loss Properties in the Borough of South River
(Source: FEMA National Flood Insurance Program, February 2014)

City/County Name	Properties	Total Building	Total Contents	Total Losses	# of Claims	Average Claim
Borough of South River	6	\$799,788	\$67,753	\$867,541	28	\$30,984
Middlesex County	77	\$14,512,761	\$910,122	\$15,422,883	385	\$40,059

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 23-15
100-Year Risk Projection for NFIP Severe Repetitive Loss Properties in the Borough of South River

Data	Value
Period in years	21
Number of claims	28
Average claims per year	1.33
Total value of claims	\$867,541
Average value of claims per year	\$41,311
Projected risk, 100-year horizon	\$589,515

3.2.7 Storm Surge Hazard

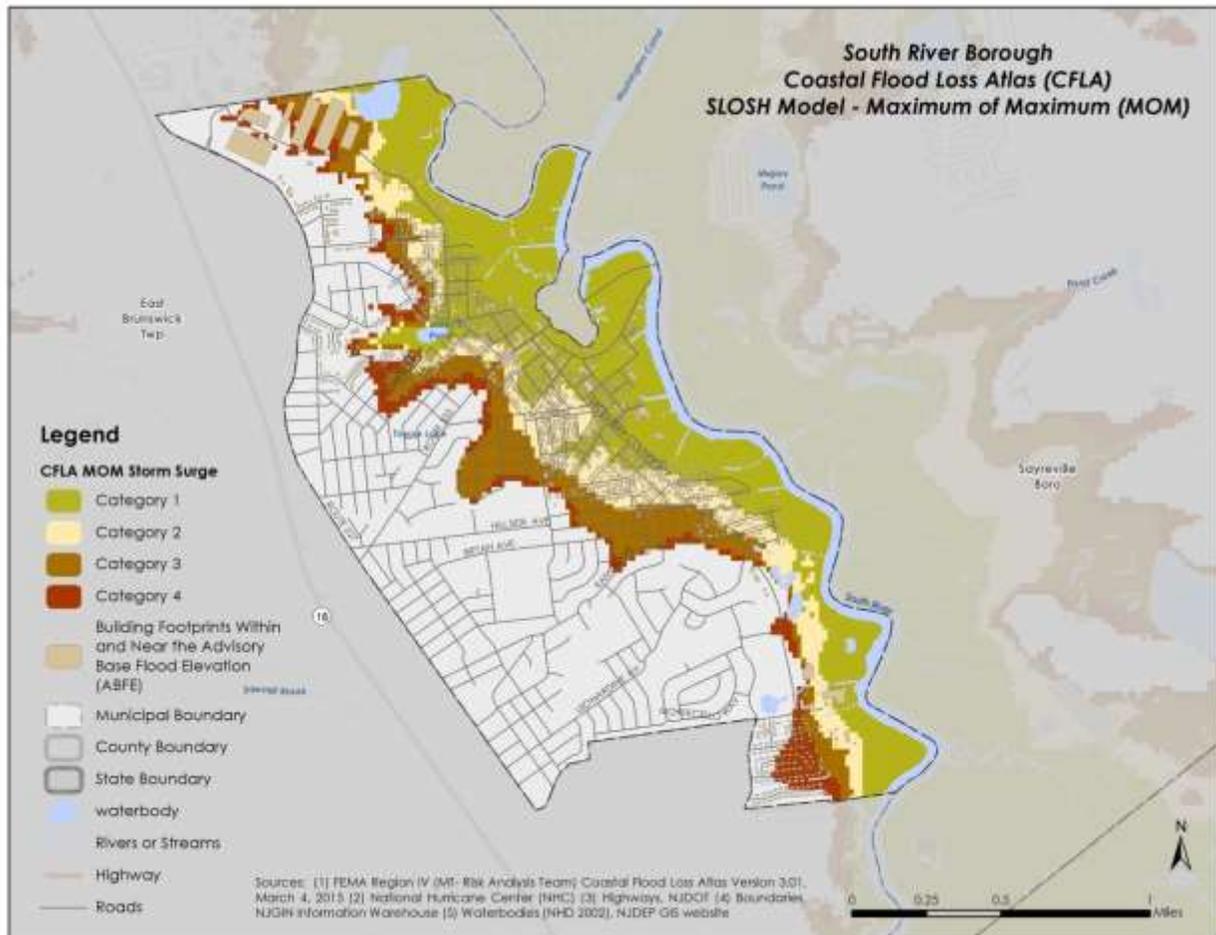
Of the 24 jurisdictions in Middlesex County, 13 have some risk from storm surge. The Borough of South River is among these, due its exposure to overbank flooding from the South River. Storm surge on the South River is related to surge from the Raritan River and Raritan Bay. Although events that may cause surge in these secondary and tertiary areas (i.e. those not directly exposed to coastline) are relatively rare, the Borough has numerous streets and structures on the east side of the jurisdiction that are quite exposed to flooding. In South River, overbank flooding is substantially the same regardless of whether surge or other weather events cause it. However, it is useful to discuss statistics that are clearly related to surge. Various studies and GIS analysis provide information about the jurisdiction’s exposure to various levels of storm surge. Table 23-16 provides basic information.

Figure 23-3 is a map of storm surge zones 1 through 4 in South River. Category 1 events impact an area substantially similar to the Special Flood Hazard Areas, but highly developed areas further to the west of the river create significant risks in more significant events (Categories 2-4).





Figure 23-3
Map of Storm Surge Zones, Categories 1-4, Borough of South River
(Source: FEMA Region IV, Coastal Flood Loss Atlas (CFLA) SLOSH – March, 2014)



Sea, Lake, and Overland Surges from Hurricanes (SLOSH) inundation zones from the FEMA Coastal Flood Loss Atlas (CFLA) were used to complete the storm surge vulnerability assessment for South River. The initial analysis included calculating the land area and parcels within Categories 1 - 4 for the jurisdiction. This portion of the risk assessment approach matches the vulnerability assessment completed for the State of New Jersey 2014 Hazard Mitigation Plan. Knowing the land area within each zone can help determine the overall impact to buildings and other infrastructure in the region a result of storm surge.



Table 23-16
Storm Surge Exposure Statistics for the Borough of South River
(Source: FEMA Region IV, Coastal Flood Loss Atlas (CFLA) SLOSH – March, 2014, County GIS)

Storm Surge Category	Square Miles Impacted	Parcels Exposed
1	16.01	0
2	12.14	10
3	13.77	35
4	38.61	2,499

There is no reliable open-source information that allows assignment of specific probabilities to surge categories, so certain assumptions must be made in order to complete a risk assessment. The next table shows the assumptions used in a simple risk calculation for storm surge.

Table 23-17
Assumptions for Storm Surge Risk Assessment, Borough of South River

Data Type	Value
Structures per parcel	1
Structure replacement value/s.f.	\$150
Contents replacement value/s.f.	\$75
Assumed square footage of average structure	2,000

The risk assessment is then based on FEMA depth-damage functions, i.e. indications of the percentage damage at a given flood depth for structure and contents. The main section of the mitigation plan includes a detailed description of the methodology. The results are intended only to provide a general sense of potential losses.

Table 23-18
Deterministic Surge Scenarios, Borough of South River

	Category 1	Category 2	Category 3	Category 4
Assumed annual probability	2%	1%	0.5%	0.1%
Number of parcels impacted	0	10	35	2,499
Assumed flood depth	1	2	3	4
Scenario risk	\$0	\$1,305,000	\$6,090,000	\$597,885,750
Annual risk	\$0	\$13,050	\$76,125	\$597,886
100-year risk	\$0	\$186,224	\$1,086,304	\$8,531,830



3.3 Hurricane and Tropical Storm Hazards

As with Middlesex County and all of New Jersey, South River is subject to periodic hurricanes and tropical storms, though because of the relatively northern latitude, such storms tend to be much less powerful here than when they occur in coastal areas in southern states. There is a much longer discussion of past such events in the County portion of this HMP. As discussed elsewhere, the two most recent notable events were Tropical Storm Irene (2011) and Hurricane Sandy (2012). The following description of local effects from Sandy is an excerpt from the *Strategic Recovery Planning Report* (Bignell Planning Consultants, March 2014):

On October 29, 2012, at approximately 9 pm, the tidal flooding combined with water from the storm surge overflowed the banks of the South River and poured into several neighborhoods along the eastern side of the Borough. Flooding was severe. The waterline was measured at 28 inches on Reid Street and as high as 40 inches on Washington Street. Most homes east of Water Street took on several feet of water on the ground floor. Diluted in with the water were particles of silt, mud and brackish foam carried in from the Raritan Bay. During the entirety of the storm, several multi-family apartment buildings were evacuated, dozens of businesses were submerged under several feet of water, and emergency services evacuated residents from single family homes with personal vehicles, boats and rescue squad wave-runner watercraft. After the water receded, low lying areas in the floodplain east of Water Street still contained standing water for several weeks after the storm.

The probability of future events is likely about the same as in the past, although the effects of climate change may increase the likelihood of storms developing.

Hurricane and tropical storm impacts in South River included fairly typical activities and costs, including police, fire and EMS overtime, emergency protective measures, road and bridge closures, power losses (discussed elsewhere), as well as flooded private and public structures. The Borough also provided food for a few days after the event. Flooding from Sandy resulted in an 18-month closure of the Human Services building; the basement of this facility was entirely flooded, which resulted in the total loss of a gym, food bank, office storage space, and other contents. The building re-opened in May, 2014. The community survey indicates that 181 residential structures flooded in Hurricane Sandy.

The 2014 *Strategic Recovery Planning Report* also provides detailed descriptions of damage to other publicly-owned facilities during Sandy.

The Borough's main sewage pumping station on Jackson Street was damaged when water entered the pump building and destroyed an auxiliary power generator. This facility was permanently destroyed and temporary pumps are still in place today. Similar damage occurred to the Jackson Street pumping station. The Borough's Firehouse on George Street had limited auxiliary power, but no water damage. The Borough's firehouse on Appleby Avenue had only limited auxiliary power. The Borough's Rescue Squad building and Police Station had limited auxiliary power. The Department of Public Works and municipal water tank facility had no electricity to power gasoline pumps for DPW or emergency vehicles and no electricity to operate the municipal water pumping station for domestic water or fire suppression. The Borough's human services building/office building on Reid Street was significantly damaged by flooding, particularly in the basement, ground floor and elevator shaft. That building remains inoperable almost 18 months after the storm. Additionally the comprehensive electric service loss rendered all Borough gasoline pumping stations,



supermarkets and banking facilities inoperable.

Without electricity, building mechanicals and systems failed, including fire alarms, hallway and stairwell lights and water pumps. Water for both residential consumption and fire suppression thankfully never fell below critical levels. Emergency communications is often a major challenge during flood events as the Borough's communications systems is located in the basement of Police headquarters, a building which is prone to frequent flooding. Without electricity, wireless communications antennas did not work and cell phones were inoperable after a day or two. Police Department and Fire Department radio systems were powered by emergency back-up generators which needed to be refueled every few hours.

As discussed in the same report, the South River Tax Assessor's office estimated \$7.4 million in "total assessed value" was damaged. Most of the flood damage was in the neighborhoods of Water, Lee, Russell, and Martin Streets. Many homes have been purchased by the New Jersey Department of Environment Blue Acres program since 2012.

3.3.1 Hurricane 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 23-19 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 Countywide results in the main section of this HMP update.

3.3.2 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 23-21 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 23-19
Probabilistic Wind Risk in South River by Occupancy Class
(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	7,512,240	\$158,528	\$37,931	\$0	\$11,817	\$0	\$6,030	\$0
Commercial	1,363,497	\$11,420	\$4,916	\$162	\$1,951	\$1,192	\$1,136	\$1,183
Industrial	502,447	\$3,825	\$2,441	\$359	\$248	\$41	\$32	\$67
Agricultural	20,838	\$184	\$93	\$11	\$29	\$2	\$1	\$1
Religious	150,956	\$1,547	\$548	\$0	\$218	\$109	\$19	\$256
Government	46,885	\$385	\$204	\$0	\$85	\$3	\$19	\$412
Education	50,170	\$435	\$186	\$0	\$79	\$17	\$3	\$39
Totals	9,647,034	\$176,324	\$46,319	\$532	\$14,427	\$1,363	\$7,242	\$1,958

Table 23-20
Probabilistic Wind Risk in South River, 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	\$214,306	\$2,957,643	\$3,057,939
Commercial	\$21,959	\$303,059	\$313,336
Industrial	\$7,013	\$96,781	\$100,063
Agricultural	\$321	\$4,434	\$4,584
Religious	\$2,698	\$37,239	\$38,502
Government	\$1,108	\$15,293	\$15,812
Education	\$759	\$10,474	\$10,829
Totals	\$248,165	\$3,424,923	\$3,541,064

Table 23-21
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	E	F	G	Total
Tropical Storm Irene	\$45,138	\$16,447	\$0	\$0	\$0	\$0	\$61,585
Hurricane Sandy	\$269,547	\$395,566	\$0	\$330,460	\$611,419	\$1,000	\$1,607,992
Total	\$314,685	\$412,013	\$0	\$330,460	\$611,419	\$1,000	\$1,669,577



3.4 Wildfire Hazards

3.4.1 Type, Location, and Extent

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 4.3.14), and for reasons of brevity are not repeated here. 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 South River 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

There are no previous occurrences listed in open sources. The Borough reported that all previous wildfires have been easily contained and without damage to public or private properties. There is no accurate way to predict the probability of future occurrences at this time without more data.

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, South River is about average among jurisdictions in Middlesex County. The community has no areas of extreme fuel hazard; 2.12% of the very high fuel hazard area in the County (0.118 square miles); 1.31% of the high hazard area (0.157 square square miles); 0.11% of the moderate hazard area (0.106 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 23-22, South River is 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.

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.

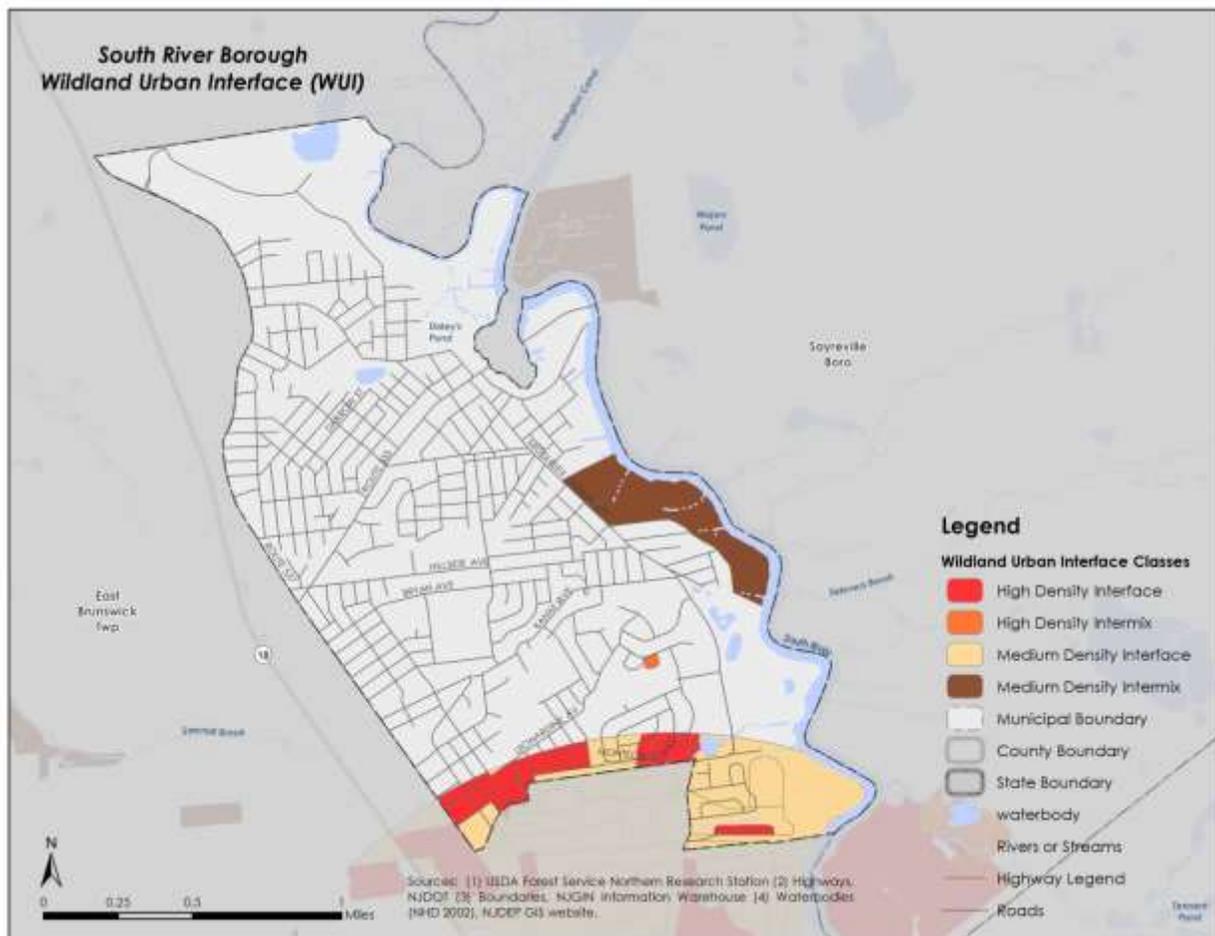


Table 23-22
Summary of Wildland-Urban Interface and Intermix Data, Borough of South River

	Housing Units	Population
High-density interface	258	779
High-density intermix	5	19
Medium-density interface	310	1,049
Medium-density intermix	164	367

Figure 23-4 shows areas of wildland-urban intermix and interface in South River. Most of the intermix and interface areas are in the southern part of the jurisdiction. Based on analysis of aerial photography, this appears to be the case because there are small but fairly dense areas of trees paralleling Colin Drive. There is also an area of medium-density intermix on the eastern edge of the jurisdiction.

Figure 23-4
Wildland-Urban Wildfire High- and Medium-Density Interface and Intermix Zones, Borough of South River





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 details the capabilities assessed for Borough of South River during this plan update.

4.1 Planning and Regulatory

Tool / Program (code, ordinance, plan)	(Yes/No)	Code Citation and Comments
Master Plan	Yes	Borough Master Plan Dated 2011
Capital Improvements Plan	Yes	Yearly Budget Document
Floodplain Management / Basin Plan	Yes	Borough Code
Stormwater Management Plan	Yes	Adopted 8/13/2007
Open Space Plan	Yes	Borough Master Plan Dated 2011
Stream Corridor Management Plan	N/A	
Watershed Management or Protection Plan	N/A	
Economic Development Plan	Yes	Rehabilitation/Redevelopment Corridors/Area
Comprehensive Emergency Management Plan	Yes	Middlesex County All Hazards Mitigation Plan Adopted
Emergency Operation Plan	Yes	
Post-Disaster Recovery Plan		
Transportation Plan		
Strategic Recovery Planning Report	Yes	
Zoning Ordinance	Yes	Amended 12/27/2011
Subdivision Ordinance	Yes	Amended 12/27/2011
NFIP: Cumulative Substantial Damages	Yes	Listing in Boro Administrator's office
Growth Management Ordinances		
Site Plan Review Requirements	Yes	Amended 12/27/2011
Stormwater Management Ordinance	Yes	Adopted 8/13/2007
Municipal Separate Storm Sewer System (MS4)		
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	Deputy Clerk Planning Board Secretary
Mitigation Planning Committee	N	



Resources	Is this in place? (Y/N)	Department/ Agency/Position
Environmental Board/Commission	Y	Environmental Commission/Shade Tree Commission
Open Space Board/Committee	N	
Economic Development Commission/Committee	Y	Economic Development Commission
Maintenance Programs to Reduce Risk	Y	Boro wide safety program
Mutual Aid Agreements	Y	Radio dispatch, Fire and EMS coverage,
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Borough Planner Bignell Associates Borough Engineer - CME
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Borough Engineer - CME
Planners or engineers on staff with a strong understanding of natural hazards		Borough Engineer - CME
NFIP Floodplain Administrator	Y	Construction Official
Surveyors	Y	Borough Engineer - CME
GIS layers and maps	N	
Personnel trained in GIS	N	
Personnel trained in HAZUS	N	
Emergency Manager		OEM Coordinator – Art Londensky
Grant Writer	Y	As per department
Staff with expertise in cost/benefit analysis	Y	CFO- Joe Zanga and Borough CPA
Professionals trained in conducting damage assessments	Y	

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)	Y	6	Oct 2014
Building Code Effectiveness Grading Schedule (BCEGS)	Y	6	2014
Public Protection (ISO Fire Protection Classes 1 to 10)	Y	4	2014
Storm Ready	N		
Firewise	N		
Disaster/Safety Programs in/for Schools	N		
Organizations with Mitigation Focus (advocacy group, non-government)	N		
Public Education Program/Outreach (through website, social media)	N		
Public-Private Partnerships	N		



4.4 Fiscal Capabilities

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



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	Review Comments
Acquisition/elevation of 3 Severe Repetitive Loss and Repetitive Loss Properties on Causeway St	Municipal OEM	Blue Acres Acquisition and Demolition of 100, 112 and 114 Causeway 82 Initial repetitive loss properties. 54 homes removed from SFHA. (Not all RL properties)	82 Initial repetitive loss properties. 54 homes removed from SFHA. (Not all RL properties)
Acquisition/elevation of 2 Repetitive Loss Properties on Lee Street.	Municipal OEM	Blue Acres Acquisition and Demolition of 1 and 6 Lee	See Above
Acquisition/elevation of 2 Repetitive Loss Properties on Armstrong Ave.	Municipal OEM	Blue Acres Acquisition and Demolition of 15 and 17 Armstrong	See Above
Acquisition/elevation of 2 Repetitive Loss Properties on Maple Street.	Municipal OEM	Blue Acres Acquisition and Demolition of 4 and 13 Maple	See Above
Acquisition/elevation of 2 Repetitive Loss Properties on Herman Street & Leroy Street.	Municipal OEM	Blue Acres Acquisition and Demolition of 1 and 15 Herman.	See Above
Acquisition/elevation of 2 Repetitive Loss Properties on Levinson Ave & Cleveland Ave.	Municipal OEM	Blue Acres Acquisition and Demolition of 31 and 43 Levinson.	See Above

5.2 Other Mitigation Activities

In addition to mitigating residential properties along the South River, the Borough has worked in the past five years to secure generators, elevate utilities in public facilities within the floodplain and mitigate 55 Reid Street, the Human Services Buildings. The Borough has also adopted the ABFEs and



freeboard requirements to improve its regulatory capacity to minimize future damage from flooding.

5.3 Proposed Mitigation Actions

The table below details the mitigation initiatives the Borough of South River 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 7.

Proposed Action	Anticipated Benefits	Responsible Party	Funding or Implementation Mechanism	Timeline	Priority
Continue acquisition/elevation of RL properties	Reduction in property losses from repetitive flooding	Mayor and Council/ Boro Administrator	Grants	TBD	Med
Continued participation in CRS	Reduction in flood insurance premiums for policyholders	Boro Administrator/NFIP Administrator	Existing Resources	Annually	High
Continue Planning and Evaluating Flood Hazard Areas in Post Sandy Environment	Reduction in properties at risk from future floods	Boro Administrator/Boro Planner	DCA Planning Grants	18 months	High
Stormwater System Maintenance and Upgrades	Reduced infiltration and reduction in backflooding	DPW/ Boro Administrator	Seek available funding to clean catch basins and areas where Storm Surge builds up	TBD	Low
Bulkheads to retain stream over flow to reduce flooding	Flood reduction	OEM/ Boro Administrator	Explore funding sources to make changes in residential zones prone to flood	TBD	Low
Round 2 of Blue Acres Buyouts with Sandy funds	Reduction in property losses from repetitive flooding	Mayor and Council/ Boro Administrator	Continue to press Governor’s office and DEP for additional funding for 63 flood prone homes.	State-dependent	Medium
Dredge the South River	Increased riverine flows	Mayor and Council/ Boro Administrator	Press Governor’s office and DEP for funding to dredge the river.	TBD	Low



6. Plan Implementation

The LPC shall document, as needed and appropriate:

- Hazard events and losses in South River 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

6.1 Continued Public Input

The Borough of South River 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 South River'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 South River 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.

6.2 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.

6.3 Plan Maintenance

The Borough of South River 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 Administrator 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 Borough Administrator 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 South River 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.