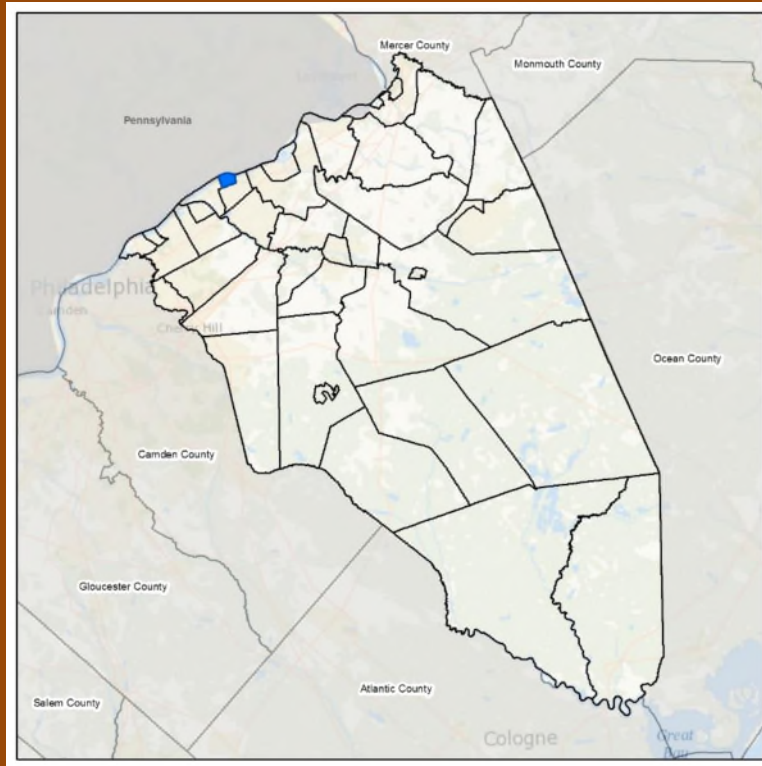












MUNICIPAL ANNEX | Beverly City



 <p>Total Population (2010 Census)</p> <p>2,577</p>	 <p>Total Number of Buildings</p> <p>964</p>	 <p>Number of National Flood Insurance Program (NFIP) Policies and Percent in Regulatory Floodplain</p> <p>5 (0%)</p>	 <p>Total Agricultural Land (square miles)</p> <p>0.0</p>	
 <p>Total Land (square miles)</p> <p>0.8</p>	<p>Percent of Buildings in Regulatory Floodplain</p> <p>1%</p>	<p>Number of Repetitive Loss (RL/SRL) Properties</p> <p>0 / 0</p>	 <p>Percent of Land on Steep Slopes (>15%)</p> <p>2%</p>	
 <p>Proposed Project Types</p>	Structure and Infrastructure Projects, Education and Awareness Programs, Local Plans and Regulations, and Natural Systems Protection		 <p>Mitigation Focus</p>	Multi-Hazard



9.3 City of Beverly

This section presents the jurisdictional annex for the City of Beverly.

9.3.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan's primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Al Desjardins, OEM Coordinator 446 Broad Street, Beverly, NJ 08010 609.320.1032 quebec_al@comcast.net	Rich Wolbert, Public Safety Director 446 Broad Street, Beverly, NJ 08010 609.680.3638 rwolbert@thecityofbeverly.com

9.3.2 Municipal Profile

The Borough of Beverly was established within Willingboro Township by the Legislature in 1850. The City of Beverly was incorporated on April 13, 1857. By 1920, most of Beverly City was fully developed and after World War II growth shifted to adjacent rural areas.¹

Beverly is governed under the city form of New Jersey municipal government, and consists of an elected mayor and a five-member elected city council. Responsibilities of this governing body include all executive and legislative functions. The Mayor and members of the City Council serve five year terms of office. Under this form, mayor and council are elected in partisan elections. The mayor serves a four-year term, unless a two or three-year term preceded the passage of the 1997 law.

The mayor is the chief executive, may participate in council meetings and can vote to break ties. The mayor can veto ordinances and serves as the head of the police department. Meanwhile, the council is the legislative body of the municipality and appoints most of the subordinate officers of the city.

The City of Beverly is located in northern Burlington County along the Delaware River. The City is bordered by Edgewater Park to the south and east and Delanco to the west. It is bordered by Pennsylvania to the north, across the Delaware River. Beverly has a total area of 0.785 square miles, of which 0.555 square miles is land and 0.230 square miles is water. According to the 2010 Census, the community's population was 2,577.

Growth/Development Trends

The City of Beverly did not note any recent residential/commercial development since 2013 or any major residential or commercial development, or major infrastructure development planned for the next five years in the municipality.

9.3.3 Natural Hazard Event History Specific to the Municipality

Burlington County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2013 to present were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference

¹ <http://www.delrivgreenway.org/heritagetrail/Beverly-City.html>



material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

Table 9.3-1. Hazard Event History

Dates of Event	Event Type (Disaster Declaration if applicable)	Burlington County Designated?	Summary of Damages/Losses
April 30-May 1, 2014	Heavy Rain and Flooding	No	Although the County was impacted, municipal damages/losses were unavailable.
June 23, 2015	Severe Storm (DR-4231)	Yes	Although the County was impacted, municipal damages/losses were unavailable.
January 22-24, 2016	Severe Winter Storm (DR-4264)	Yes	Although the County was impacted, municipal damages/losses were unavailable.

Notes:

EM Emergency Declaration (FEMA)

FEMA Federal Emergency Management Agency

DR Major Disaster Declaration (FEMA)

N/A Not applicable

9.3.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant’s vulnerability to the identified hazards. The following summarizes the hazard vulnerabilities and their ranking in the City of Beverly. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential hazards for the City of Beverly.

Table 9.3-2. Hazard Risk/Vulnerability Risk Ranking

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a, c}	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking ^b
Coastal Erosion	RCV Exposed to CE Hazard Area: \$37,606,296	Occasional	12	Low
Drought	Damage estimate not available.	Frequent	36	High
Earthquake	100-Year GBS: \$0 500-Year GBS: \$1,492,383 2,500-Year GBS: \$21,157,418	Occasional	28	Medium
Flood	1% Annual Chance: \$328,406,175	Frequent	48	High
Landslide	RCV Exposed to Landslide Hazard Area: \$0	Rare	6	Low
Severe Storm	100-year MRP: \$1,086,271 500-year MRP: 1,198,399 Annualized: 63,734	Frequent	48	High
	1% GBS: \$5,924,797	Frequent	51	High



Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a, c}	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking ^b
Severe Winter Weather	5% GBS: \$29,623,983			
Wildfire	Estimated Value in the Extreme, Very High, and High Hazard Areas: \$266,341,415	Occasional	20	Medium

Notes:

- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- b. The valuation of general building stock and loss estimates was based on custom inventory for the municipality.
High = Total hazard priority risk ranking score of 31 and above
Medium = Total hazard priority risk ranking of 20-30+
Low = Total hazard risk ranking below 20
- c. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- d. Loss estimates for the flood and earthquake hazards represent both structure and contents.
- e. The HAZUS-MH earthquake model results are reported by Census Tract.

National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the City of Beverly.

Table 9.3-3. NFIP Summary

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
City of Beverly	5	1	\$3,513.71	0	0	0

Source: FEMA Region 2 2017, 2018

- (1) Repetitive loss and severe repetitive loss statistics provided by FEMA Region 2 and are current as of 10/31/2017. Policy and claims statistics current as of 9/30/2018
Please note the total number of repetitive loss properties does not include the severe repetitive loss properties. The number of claims represents claims closed by 9/30/2018.
- (2) Total building and content losses from the claims file provided by FEMA Region 2.
- (3) The policies inside and outside of the flood zones are based on the addresses geocoded from the FEMA Region 2 policy file - 10/31/2017.

Notes: FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility.
A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case.

Critical Facilities

The table below presents Hazards United States (HAZUS) – Multi-Hazards (MH) estimates of the damage and loss of use to critical facilities in the community as a result of a 1-percent annual chance flood event.

Table 9.3-4. Potential Flood Losses to Critical Facilities

Name	Type	Exposure		Potential Loss from 1% Flood Event	
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage
292 - Beverly Housing Authority Bldg - Wic	County Building	X	X	-	-



Name	Type	Exposure		Potential Loss from 1% Flood Event	
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage
Beverly Sewage Authority	Chemical	X	X	-	-
Beverly Sewerage Authority	Wastewater Treatment	X	X	-	-

Source: FEMA 2017, Burlington County

Note: - = Damages not calculated by HAZUS-MH v4.0

Other Vulnerabilities Identified

The municipality has identified the following vulnerabilities within their community:

- None identified

9.3.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification
- National Flood Insurance Program
- Integration of mitigation planning into existing and future planning mechanisms

Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the City of Beverly.

Table 9.3-5. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Planning Capability				
Master Plan	Yes 12/17/14	Local	Planning	Master Plan
Capital Improvements Plan	No	-	-	-
Floodplain Management / Basin Plan	Yes 12/19/17	Local/State/Federal	Engineering	Floodplain Management / Basin Plan
Stormwater Management Plan	Yes 12/17/14	Local	Eng/Planning	Stormwater Management Plan
Open Space Plan	No	-	-	-
Stream Corridor Management Plan	No	-	-	-
Watershed Management or Protection Plan	Yes 11/14/12	Local	Council / Engineering	Watershed Management or Protection Plan
Economic Development Plan	Pending	-	-	-
Comprehensive Emergency Management Plan	Unknown	-	-	-
Emergency Operation Plan	Yes 1/30/14	Local	OEM	Emergency Operation Plan



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Post-Disaster Recovery Plan	No	-	-	-
Transportation Plan	No	-	-	-
Strategic Recovery Planning Report	No	-	-	-
Other Plans:	No	-	-	-
Regulatory Capability				
Building Code	Yes	State & Local	Construction	State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.)
Zoning Ordinance	2001	Local	Council	Revisions 2014, 2016 & 2017
Subdivision Ordinance	No	-	-	-
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Law and Ordinance Committee	Code citation unavailable
NFIP: Cumulative Substantial Damages	Yes	Local	Law and Ordinance Committee	Code citation unavailable
NFIP: Freeboard	Yes	State, Local	Law and Ordinance Committee	Code citation unavailable
Growth Management Ordinances	No	-	-	-
Site Plan Review Requirements	2004	Local	-	Code citation unavailable
Stormwater Management Ordinance	2006	Local	-	Code citation unavailable
Municipal Separate Storm Sewer System (MS4)	2006	Local	-	Code citation unavailable
Natural Hazard Ordinance	No	-	-	-
Post-Disaster Recovery Ordinance	No	-	-	-
Real Estate Disclosure Requirement	No	-	-	-
Other (Special Purpose Ordinances [i.e., sensitive areas, steep slope])	No	-	-	-

Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the City of Beverly.

Table 9.3-6. Administrative and Technical Capabilities

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Administrative Capability		
Planning Board	Yes	Land Use Board
Mitigation Planning Committee	No	-
Environmental Board/Commission	No	Land Use Board serves as Env Comm



Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Open Space Board/Committee	No	-
Economic Development Commission/Committee	Yes	Common Council
Maintenance programs to reduce risk	Yes	Common Council
Mutual aid agreements	Yes	City Administrator/Common Council
Technical/Staffing Capability		
Planner(s) or engineer(s) with knowledge of land development and land management practices	Yes	City Engineer - Contract
Engineer(s) or professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	City Engineer - Contract
Planners or engineers with an understanding of natural hazards	Yes	City Engineer - Contract
NFIP Floodplain Administrator (FPA)	Yes	City Engineer - Contract
Surveyor(s)	Yes	City Engineer - Contract
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	City Engineer - Contract
Scientist familiar with natural hazards	No	-
Emergency Manager	Yes	Beverly City OEM
Grant writer(s)	Yes	Contracted/City Administrator
Staff with expertise or training in benefit/cost analysis	Yes	City Administrator/CMFO
Professionals trained in conducting damage assessments	Pending	Tax Assessor

Fiscal Capability

The table below summarizes financial resources available to the City of Beverly.

Table 9.3-7. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use (Yes/No)
Community development Block Grants (CDBG, CDBG-DR)	No – Small Cities Program
Capital improvements project funding	Yes – Minimal funding capability
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Outside entities
Impact fees for homebuyers or developers of new development/homes	No
Stormwater utility fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	Yes
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	Unknown
Other federal or state Funding Programs	Yes
Open Space Acquisition funding programs	Yes
Other	No



Community Classifications

The table below summarizes classifications for community program available to the City of Beverly.

Table 9.3-8. Community Classifications

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Yes	3	March 2016
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	Class ranking was unavailable	-
Storm Ready Certification	No	-	-
Firewise Communities classification	No	-	-
Natural disaster/safety programs in/for schools	Yes	-	-
Organizations with mitigation focus (advocacy group, non-government)	No	-	-
Public education program/outreach (through website, social media)	Yes	-	-
Public-private partnership initiatives addressing disaster-related issues	Yes	-	-

Note:

- N/A Not applicable
- NP Not participating
- Unavailable

The classifications listed above relate to the community’s ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community’s capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule
- The ISO Mitigation online ISO’s Public Protection website at <https://www.isomitigation.com/ppc/>
- The National Weather Service Storm Ready website at <http://www.stormready.noaa.gov/index.html>
- The National Firewise Communities website at <http://firewise.org/>

Self-Assessment of Capability

The table below provides an approximate measure of the City of Beverly’s capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.



Table 9.3-9. Self-Assessment Capability for the Municipality

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Planning and regulatory capability		X	
Administrative and technical capability	X – financial / limited staff		
Fiscal capability	X – Financial limitations		
Community political capability		X	
Community resiliency capability		X	
Capability to integrate mitigation into municipal processes and activities		X	

National Flood Insurance Program

NFIP Floodplain Administrator (FPA)

William Kirchner, Municipal Engineer

Flood Vulnerability Summary

The City of Beverly does not maintain lists or inventories of properties that have been damaged by flooding. During Hurricane Sandy and other recent events, there was no structural damage within the City.

Resources

The FPA indicated that contract staff and City personal assume the responsibilities of floodplain administration for the City of Beverly. NFIP administration services and functions provided to residents of Beverly include permit review, inspections, recommendations, special restrictions, and final permitting approvals. Additionally, City personnel handles damage assessments, other record keeping, education and outreach. At this time, there are no education or outreach programs to the community regarding flood hazards/risk or flood reduction, but outreach will be provided following the adoption of the City’s new flood damage prevention ordinance. The FPA state that limited personnel is currently the only barrier to running an effective floodplain management program, and that he does feel adequately supported and trained to full the responsibilities as the municipal floodplain administrator. The FPA could consider attending continuing education and certification training on floodplain management if it were offered in the future.

Compliance History

The City is currently in good standing with the NFIP; however, there has not been a compliance audit conducted.

Regulatory

The City of Beverly’s floodplain ordinance exceeds the requirements set up by FEMA and the State of New Jersey. There are additional ordinances that support floodplain management within the City. The City is not currently in the CRS program; however the City’s governing body would like to consider obtaining CRS certification and would attend a CRS seminar if offered.

Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a



better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures.

Planning

Green Buildings and Environmental Sustainability Element: The Green Buildings and Environmental Sustainability Element was adopted in March of 2017 as an element of the City's Master Plan. This element concerns itself with understanding and minimizing development's negative physical impacts on environmental and human health. The strategies recommended in this element are required to: provide for, encourage, and promote the efficient use of natural resources and the installation and usage of renewable energy systems; consider the impact of buildings on the local, regional and global environment; allow ecosystems to function naturally; conserve and re-use water; treat storm water on-site; and optimize climatic conditions through site orientation and design.

Healthy Community Plan Element: The Healthy Community Plan Element was adopted in March of 2017 as an element of the City's Master Plan. This element is intended to encourage municipal action to guide the appropriate use or development of all lands in this State, in a manner which will promote the public health, safety, morals, and general welfare.

Master Plan: The 2014 Master Plan Re-Examination Report identified general and potential problems that include: underutilized waterfront due to Army Corps of Engineers' dredging program, sewerage plant and buffering, public housing, etc.; slow clean-up of Cosden superfund site; underutilized and potentially contaminated industrial properties along railroad; and much of the waterfront in floodplain; must be raised during redevelopment in conformance with federal floodplain management requirements.

Redevelopment Plan: The vision of the 2007 Redevelopment Plan is: The City of Beverly is a small close knit community seeking a higher quality of life. A traditional Delaware River community, Beverly is surrounded by incredible infrastructure and amenities that can be capitalized upon in order to make this goal a reality. The Train Station and Waterfront flank the city to the north and south while Warren Street and Beverly's historic downtown act as the hub. By capitalizing on the potential of the train and river, this plan seeks to create a 'critical mass' of new housing stock that will infuse life into the downtown and revitalize the city from the outside inward.

During the 2014 Master Plan re-examination process it was decided that it is necessary to completely update and revise the Master Plan Land Use Plan element. When completed, that element will form the basis for a revision to the 2007 Redevelopment Plan.

Transportation and Community Development Initiative (TCDI) Land Use Inventory: The 2004 TCDI Land Use Inventory provides an updated inventory of land uses and conditions as of 2003 and initial recommendations for using existing opportunities and assets, and for improving or removing limitations and liabilities, to protect and improve the economic vitality, safety, and quality of life within the study area. The study area includes properties in the Light Rail station area at Railroad Avenue and along Cooper Street, extending northward along Cooper Street to include the commercial district beginning at Church Street and extending into the commercial areas along Warren and Bridge Streets (between Melbourne Avenue and Walnut Streets), continuing north along Cooper Street to the waterfront.



Regulatory and Enforcement (Ordinances)

NJDEP Municipal Stormwater Regulation Program: New Jersey Department of Environmental Protection issued the statewide municipal stormwater permits that became effective January 1, 2018 and authorizes stormwater discharges from municipal separate storm sewer systems (MS4s) to the waters of the state. Municipalities that have been issued a Notice of Authorization (NOA) to discharge under the Tier A (urban and coastal municipalities) or Tier B (more rural municipalities) master general permit must develop and implement a stormwater program. The first New Jersey Pollutant Discharge Elimination System (NJPDES) permit authorizing discharges from MS4 municipalities became effective in 2004 (subsequently renewed in 2009 and now in 2018), so most municipalities have developed stormwater programs; however, the 2018 permit requires the municipalities to maintain a stormwater management plan and enforce stormwater ordinances to address development and redevelopment consistent with the Stormwater Management rules at N.J.A.C 7:8, as well as implementation of additional requirements. For more information on the municipal stormwater regulation program, see www.nj.gov/dep/dwq/msrp_home.htm. The City of Beverly is a Tier A municipality.

Operational and Administration

The City of Beverly has the following Departments, Commissions, Boards and Committees:

- Construction
- Emergency Management
- Fire Commission
- Land Use/Planning Board
- Municipal Clerk
- Municipal Court
- Police Department
- Public Works
- Recreation
- Tax Assessor
- Tax Collector
- Economic Development Committee
- Environmental Committee
- Green Team

The goal of the Economic Development Committee is to: identify any obstacles or hurdles to economic development and to work with the city council and administration to make needed changes in ordinances, practices and policies.

Funding

The City of Beverly has mutual aid agreements with the City Administrator and Common Council. The has access to grant writing through the City Administrator and by contracting the work. Financial resources the City has access to or are eligible to use include the small cities program, capital improvements project funding, the authority to levy taxes for specific purposes, the ability to incur debt through general obligation bonds, the ability to incur debt through special tax bonds, other Federal or State funding programs, and open space acquisition funding programs.

Education and Outreach

The City of Beverly has a website where one can access information about City departments, committees, resources, events, and the City calendar. On the City's Emergency Management page there is information on severe weather emergency preparedness. On the City's Stormwater Management page there is information on



pet waste, motor oil, fertilizer, carwashing, the Burlington County Stormwater Management Committee, as well as information on easy things you can do every day to protect City water.

9.3.6 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritization.

Past Mitigation Initiative Status

The following table indicates progress on the community’s mitigation strategy identified in the 2013 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under ‘Capability Assessment’ presented previously in this annex.

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Table 9.3-10. Status of Previous Mitigation Actions

Action Number	2013 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
BV-1	Critical Operations Generator – City Hall/Police	Twp. OEM, Twp. Police	No progress	0% - financial constraints	1. Include in 2019 HMP 2.
BV-2	Waterfront Stabilization – Bank erosion along the Delaware River, undermining infrastructure. Continuation of Revetment Block	Twp. DPW, Twp. Engineer, Twp. Planning Dept.	No progress	Obstacles include NJDEP / Army Corps of Engineers and funding	1. Include in 2019 HMP 2.
BV-3	Address issues with Van Kirk Seawall/spillway	Twp. DPW, Twp. Engineer	No Progress	NJDEP reluctance to issue permits	1. Include in 2019 HMP 2.
BV-4	Address issues with Van Sciver Seawall	Twp. DPW, Twp. Engineer	No progress	NJDEP reluctance to issue permits	1. Include in 2019 HMP.
BV-5	Address issues with Magnolia Street MS4	Twp. DPW, Twp. Engineer	In progress	Multi-year project. First phase from Penn Street to Front Street to be completed in 2018. 20% – design and investigation complete.	1. Include in 2019 HMP 2.
BV-6	Improve Locust and Putnum Drainage	Twp. DPW, Twp. Engineer, Twp. Planning Dept.	In progress	Obstacles have been removed and new inlets installed. Additional work to be completed to eliminate all flooding, to be completed in 2018. 75% complete	1. Include in 2019 HMP 2.
BV-7	Address issues with Putnum Street MS4 Interconnect	Twp. DPW, Twp. Engineer	No progress	Cistern is in direct conflict with interconnect. Study needs to be completed first.	1. Include in 2019 HMP 2.
BV-8	Conduct Cistern Study in appropriate areas.	Twp. DPW, Twp. Engineer	No progress	Financial constraints. Discussing possible shared service. Possible completion in 2019	1. Include in 2019 HMP 2.
BV-9	Address issues with Manor & Railroad flooding	Twp. DPW, Twp. Engineer	Some progress	Received NOFA from NJDOT to connect Railroad drainage to Cherry Street. No assistance from Bombardier and NJ Transit in maintenance of their drainage ditch. 20%- design complete, funding obtained.	1. Include in 2019 HMP. 2. 3.
BV-10	Evaluate benefits of participating in CRS program	Twp. Committee; Planning	No progress	Other items were a priority. Still want to complete	1. Include in 2019 HMP



Action Number	2013 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
					2. 3.
BV-11	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness hazard mitigation	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	In progress	We were waiting to conduct the public outreach after the passage of the flood damage prevention ordinance. 40% complete	1. Include in 2019 HMP 2. 3.
BV-12	Improve municipal communications systems to include information sharing with county and surrounding municipalities	Municipality with support from County, NJOEM and FEMA	In progress	Initial planning discussions completed	1. Include in 2019 HMP 2. 3.
BV-13	Obtain and install backup power sources at critical facilities	Municipality with support from County, NJOEM and FEMA	No progress		1. Discontinue. Covered in BV-1 2. 3.
BV-14	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	Municipality with support from County, NJOEM, FEMA and surrounding communities	No progress	Mutual aid agreements are in place but has not been expanded to include continuity of operations.	1. Include in 2019 HMP 2. 3.
BV-15	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	Municipality with support from Planning Partners, County Planning,	In progress	Ongoing examination, updating and implementation	1. Include in 2019 HMP 2. 3.



Action Number	2013 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Steps 1. Project to be included in 2019 HMP or Discontinue 2. If including action in the 2019 HMP, revise/reword to be more specific (as appropriate). 3. If discontinue, explain why.
		NJOEM, FEMA			
BV-16	Promote the participation of Floodplain Administrator within the planning process and other related activities	Municipality with support from County, NJOEM and FEMA	In progress	The FPA has always been involved in the planning process. Will continue to work on expanding areas of responsibility.	1. Include in 2019 HMP 2. 3.
BV-17	Enhance resilience to severe storms by joining the NOAA "Storm Ready" program	Municipality with support from County, NJOEM and FEMA	No progress	Will have renewed focus in 2018. Limited personnel to work on this project.	1. Include in 2019 HMP 2. 3.
BV-18	Provide public education and outreach on proper installation and/or use of backup power	OEM/Code Official	No progress	New project	1. Include in 2019 HMP 2. 3.
BV-19	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies	Municipal DPW	Little progress	No equipment, personnel, training or financing. Passed ordinance to not allow new tree planting in R.O.W. All road construction programs remove trees in R.O.W.	1. Include in 2019 HMP 2. 3.



Completed Mitigation Initiatives not Identified in the Previous Mitigation Strategy

The City of Beverly has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2013 Plan:

- In the last 5 years, Beverly Sewerage Authority, the City Engineer, and Office of Emergency Management have been pursuing grants to address critical infrastructure in the flood hazard area. This infrastructure includes tanks in danger of flooding and release of sewage during severe storm events. There has been some engineering review conducted.
- Additionally, the New Jersey Department of Environmental Protection (NJDEP), Beverly Department of Public Works (DPW), and Office of Emergency Management have been in communication about a drainageway that is impacting a waterway causing saturated conditions and flooding conditions including Wheatley, Nichols, Dory Court, and Manor Road. NJDEP acknowledges this drainageway is the State's responsibility but they have no resources to correct it. Burlington County Mosquito Control Commission attempted clearing on two occasions but can no longer perform these activities. DPW utilized Department of Corrections inmates to clear debris through the Clean Shores program but that funding source is depleted. It has been requested to NJDEP to have the Army Corps of Engineers design a better outfall, but no progress has been made.

Proposed Hazard Mitigation Initiatives for the Plan Update

The City of Beverly participated in a mitigation action workshop on March 1, 2018 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 'Selecting Appropriate Mitigation Measures for Floodprone Structures' (March 2007) and FEMA 'Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards' (January 2013).

Table 9.3-11 summarizes the comprehensive-range of specific mitigation initiatives the City of Beverly would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6, 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing your actions as 'High', 'Medium', or 'Low.' The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.3-12 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.3-11. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
C. Beverly-1 (former BV-1)	Critical Operations Generator – City Hall/Police	All Hazards	1, 3	Twp. OEM, Twp. Police	Medium	Medium	HMGP	Short	High	SIP	ES
C. Beverly-2 (former BV-2)	Waterfront Stabilization – Bank erosion along the Delaware River, undermining infrastructure. Continuation of Revetment Block	Erosion	2, 3, 4	Twp. DPW, Twp. Engineer, Twp. Planning Dept.	High	High	HMGP/US Fish and Wildlife	Long	Medium	SIP/NR	SP
C. Beverly-3 (former BV-3)	Address issues with Van Kirk Seawall/spillway	Flooding	2, 3, 4	Twp. DPW, Twp. Engineer	High	Medium	HMGP/CDBG	Short	High	SIP	SP
C. Beverly-4 (former BV-4)	Address issues with Van Sciver Seawall	Flooding	2, 3, 4	Twp. DPW, Twp. Engineer	High	Medium	HMGP	Short	High	SIP	SP
C. Beverly-5 (former BV-5)	Address issues with Magnolia Street MS4	Flooding	2, 3, 4	Twp. DPW, Twp. Engineer	High	High	HMGP/CDBG/NJDOT	Long	Medium	SIP	SP
C. Beverly-6 (former BV-6)	Improve Locust and Putnum Drainage	Flooding	2, 3, 4	Twp. DPW, Twp. Engineer, Twp. Planning Dept.	Low	Low	CDBG/NJDOT	Short	Medium	SIP	SP
C. Beverly-7 (former BV-7)	Address issues with Putnum Street MS4 Interconnect	Flooding	2, 3, 4	Twp. DPW, Twp. Engineer	Medium	Medium	CDBG/NJDOT	Long	Medium	SIP	SP
C. Beverly-8 (former BV-8)	Conduct Cistern Study in appropriate areas.	Flooding	2, 3, 4	Twp. DPW, Twp. Engineer	Medium	Medium	TBD	Long	Low	SIP	SP
C. Beverly-9 (former BV-9)	Address issues with Manor & Railroad flooding	Flooding	2, 3, 4	Twp. DPW, Twp. Engineer	Medium	Medium	Local/Partnership	Short	High	SIP	SP
C. Beverly-10 (former BV-10)	Evaluate benefits of participating in CRS program	All	1, 2, 3, 4, 5	Twp. Committee; Planning	Medium	Low	Twp/Public	On-going	Medium	LPR	PP, PI, NR,



Initiative	Mitigation Initiative	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
											SP, ES
C. Beverly-11 (former BV-11)	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: <ul style="list-style-type: none"> Disaster preparedness hazard mitigation 	All Hazards	5	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	Medium	Medium	Municipal Budget, HMA programs with local or county match	Short Term	High	EAP	PI
C. Beverly-12 (former BV-12)	Improve municipal communications systems to include information sharing with county and surrounding municipalities	All Hazards	3	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	LPR	ES
C. Beverly-13 (former BV-14)	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	All Hazards	3	Municipality with support from County, NJOEM, FEMA and surrounding communities	Medium	Low	Municipal Budget	Short Term	High	LPR	PR
C. Beverly-14 (former BV-15)	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	All Hazards	1	Municipality with support from Planning Partners, County Planning, NJOEM, FEMA	High	Low-High (for 5 year update)	Municipal Budget, FEMA planning grants	On-going	High	LPR	PR
C. Beverly-15 (former BV-16)	Promote the participation of Floodplain Administrator within the planning process and other related activities	Flood	1, 4	Municipality with support from County, NJOEM and FEMA	Medium	Medium	Municipal Budget	Short	Medium	LPR	PR
C. Beverly-16 (former BV-17)	Enhance resilience to severe storms by joining the NOAA "Storm Ready" program	Severe Storm	1, 3	Municipality with support from County, NJOEM and FEMA	Medium	Low	Municipal Budget	Short Term DOF	Medium	EAP	PI



Initiative	Mitigation Initiative	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
C. Beverly-17 (former BV-18)	Provide public education and outreach on proper installation and/or use of backup power	Severe Storm	1, 5	OEM/Code Official	Medium	Low	Municipal Budget	Short	High	EAP	PI
C. Beverly-18 (former BV-19)	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies	Severe Storm, Severe Winter Storm	1, 4	Municipal DPW	Medium	Low/Medium	Municipal Budget	On-going	Medium	LPR	PR
C. Beverly-19	Continue multi-jurisdictional planning discussions between Beverly, Delanco, and Edgewater Park to develop projects to address shared flooding concerns.	Flood	1, 3	Municipality with support from Beverly, Delanco	Medium	Low	Municipal Budget	Short	High	LPR	PR

Notes:

Not all acronyms and abbreviations defined below are included in the table.

*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.

Acronyms and Abbreviations:

- CAV Community Assistance Visit
- CRS Community Rating System
- DPW Department of Public Works
- FEMA Federal Emergency Management Agency
- FPA Floodplain Administrator
- HMA Hazard Mitigation Assistance
- N/A Not applicable
- NFIP National Flood Insurance Program
- OEM Office of Emergency Management

Potential FEMA HMA Funding Sources:

- FMA Flood Mitigation Assistance Grant Program
- HMGP Hazard Mitigation Grant Program
- PDM Pre-Disaster Mitigation Grant Program
- RFC Repetitive Flood Claims Grant Program (discontinued in 2015)
- SRL Severe Repetitive Loss Grant Program (discontinued in 2015)

Timeline:

- Short 1 to 5 years
- Long Term 5 years or greater
- OG On-going program
- DOF Depending on funding

Costs:

Where actual project costs have been reasonably estimated:

- Low < \$10,000
- Medium \$10,000 to \$100,000
- High > \$100,000

Where actual project costs cannot reasonably be established at this time:

Benefits:

Where possible, an estimate of project benefits (per FEMA's benefit calculation methodology) has been evaluated against the project costs, and is presented as:

- Low= < \$10,000
- Medium \$10,000 to \$100,000
- High > \$100,000

Where numerical project benefits cannot reasonably be established at this time:





Costs:

- Low Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.*
- Medium Could budget for under existing work plan, but would require a reappropriation of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.*
- High Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.*

Benefits:

- Low Long-term benefits of the project are difficult to quantify in the short term.*
- Medium Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.*
- High Project will have an immediate impact on the reduction of risk exposure to life and property.*

Mitigation Category:

- *Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.*
- *Structure and Infrastructure Project (SIP) - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.*
- *Natural Systems Protection (NSP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.*
- *Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities*

CRS Category:

- *Preventative Measures (PR) - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.*
- *Property Protection (PP) - These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.*
- *Public Information (PI) - Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.*
- *Natural Resource Protection (NR) - Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.*
- *Structural Flood Control Projects (SP) - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.*
- *Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities*



Table 9.3-12. Summary of Prioritization of Actions

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
C. Beverly-1 (former BV-1)	Critical Operations Generator – City Hall/Police	1	1	1	1	1	1	-1	0	1	1	1	0	1	0	9	High
C. Beverly-2 (former BV-2)	Waterfront Stabilization – Bank erosion along the Delaware River, undermining infrastructure. Continuation of Revetment Block	-1	1	0	0	1	1	0	0	1	-1	1	1	1	1	6	Medium
C. Beverly-3 (former BV-3)	Address issues with Van Kirk Seawall/spillway	1	1	0	0	1	1	0	0	1	1	1	1	1	1	10	High
C. Beverly-4 (former BV-4)	Address issues with Van Sciver Seawall	1	1	0	0	1	1	0	0	1	1	1	1	1	1	10	High
C. Beverly-5 (former BV-5)	Address issues with Magnolia Street MS4	1	1	0	0	1	1	0	0	1	1	1	0	1	1	9	Medium
C. Beverly-6 (former BV-6)	Improve Locust and Putnum Drainage	1	1	0	0	1	1	0	0	1	1	1	0	1	1	9	Medium
C. Beverly-7 (former BV-7)	Address issues with Putnum Street MS4 Interconnect	1	1	0	0	1	1	0	0	1	1	1	0	1	1	9	1
C. Beverly-8 (former BV-8)	Conduct Cistern Study in appropriate areas.	0	1	0	0	0	1	0	0	1	1	0	0	0	0	4	Low
C. Beverly-9 (former BV-9)	Address issues with Manor & Railroad flooding	1	1	0	0	1	1	0	0	1	1	1	1	1	1	10	High
C. Beverly-10 (former BV-10)	Evaluate benefits of participating in CRS program	1	0	0	1	1	1	0	0	1	1	1	0	1	0	8	Medium
C. Beverly-11 (former BV-11)	Conduct and facilitate community and public education and outreach for residents and businesses to promote natural hazard risk reduction to include: • Disaster preparedness hazard mitigation	1	1	1	1	1	1	1	1	1	1	1	1	1	0	13	High



Table 9.3-12. Summary of Prioritization of Actions

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
C. Beverly-12 (former BV-12)	Improve municipal communications systems to include information sharing with county and surrounding municipalities	1	1	0	0	1	1	0	0	1	1	1	0	1	0	8	Medium
C. Beverly-13 (former BV-14)	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	1	1	1	1	1	1	1	1	1	1	1	1	1	0	13	High
C. Beverly-14 (former BV-15)	Continue to support the implementation, monitoring, maintenance, and updating of this Plan through participating in the 5 year Plan Update	1	1	1	1	1	1	1	1	1	1	1	1	1	0	13	High
C. Beverly-15 (former BV-16)	Promote the participation of Floodplain Administrator within the planning process and other related activities	1	1	0	1	1	1	0	0	1	1	0	0	1	0	8	Medium
C. Beverly-16 (former BV-17)	Enhance resilience to severe storms by joining the NOAA “Storm Ready” program	1	0	0	1	1	1	0	0	1	1	1	0	1	0	8	Medium
C. Beverly-17 (former BV-18)	Provide public education and outreach on proper installation and/or use of backup power	1	1	1	1	1	1	1	1	1	1	1	1	1	0	13	High
C. Beverly-18 (former BV-19)	Address dangerous trees threatening people and property through proactive tree-trimming (vegetation management) programs in conjunction with property owners and utility companies	1	0	0	1	1	1	0	0	1	1	1	0	1	0	8	Medium



Table 9.3-12. Summary of Prioritization of Actions

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
C. Beverly-19	Continue multi-jurisdictional planning discussions between Beverly, Delanco, and Edgewater Park to develop projects to address shared flooding concerns.	1	1	1	0	1	1	1	0	1	1	0	1	1	1	11	High

Note: Refer to Section 6, which conveys guidance on prioritizing mitigation actions.

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9.3.7 Future Needs To Better Understand Risk/Vulnerability

None at this time.

9.3.8 Hazard Area Extent and Location

Hazard area extent and location maps have been generated for the City of Beverly that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the City of Beverly has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

9.3.9 Additional Comments

None at this time.

Figure 9.3-1. City of Beverly Hazard Area Extent and Location Map 1

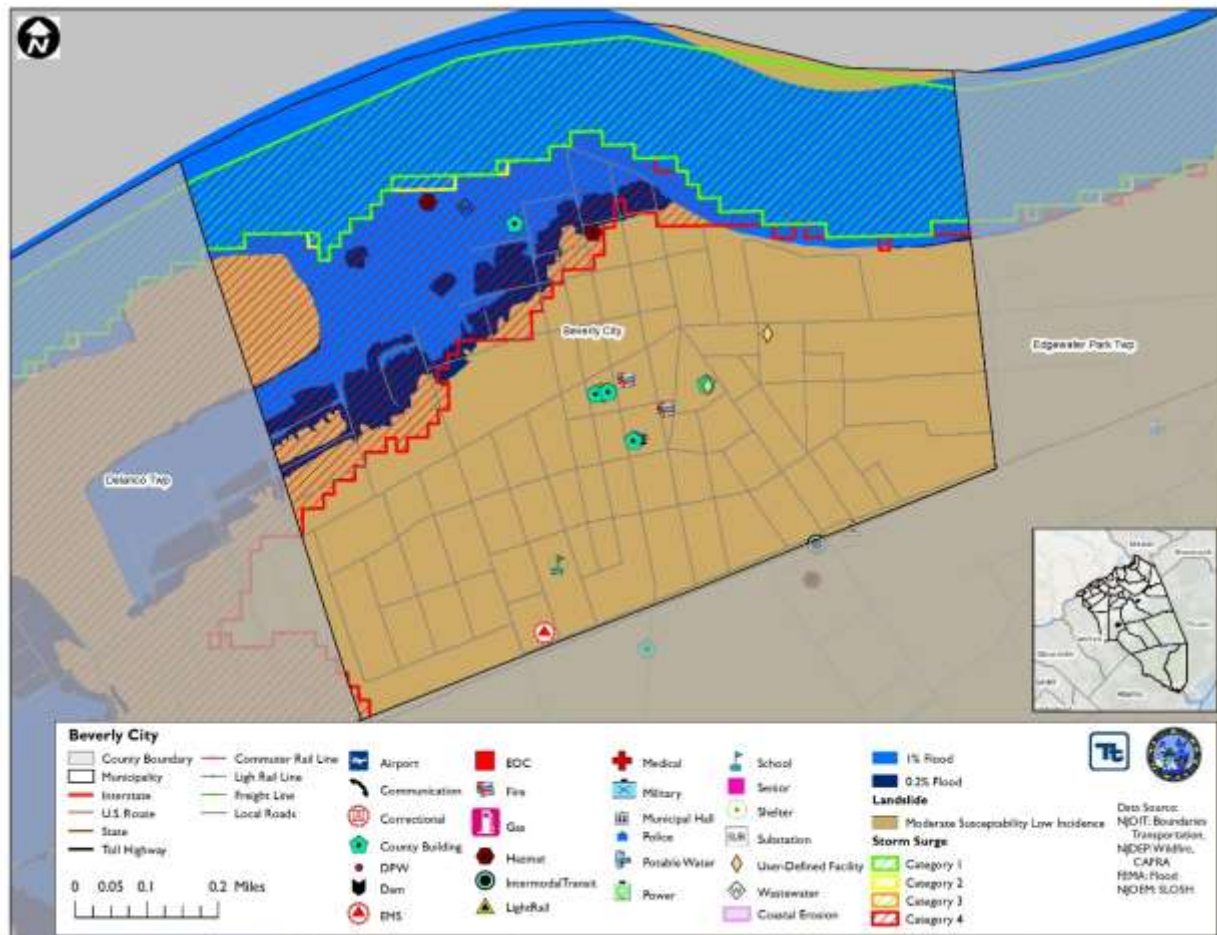




Figure 9.3-2. City of Beverly Hazard Area Extent and Location Map 2

