



## 9.25 TOWNSHIP OF WOOLWICH

This section presents the jurisdictional annex for the Township of Woolwich and includes resources and information to assist public and private sectors with reducing losses from future hazard events. This annex is not intended as guidance for actions to take during a disaster. Rather, this annex provides actions that can be implemented prior to a disaster to reduce or eliminate damage to property and people. The annex includes a general overview of the municipality and who in the Township participated in the planning process, an assessment of the Township of Woolwich's risk and vulnerability, the different capabilities used in the Township, and an action plan that will be implemented to achieve a more resilient community.

### 9.25.1 Hazard Mitigation Planning Team

The Township of Woolwich followed the planning process described in Section 2 (Planning Process) in Volume I of this plan update and developed the annex over the course of several months with input from many Township departments as summarized in the table below. The primary and alternate points of contact represented the community on the Planning Partnership and supported the local planning process requirements by securing input from persons with specific knowledge to enhance the plan. All departments were asked to contribute to the annex development through reviewing and contributing to the capability assessment, reporting on the status of previously identified actions, and participating in action identification and prioritization.

The coronavirus pandemic resulted in a strain on local resources that limited some participation, but every effort was made to connect with staff and stakeholders and gain diverse input. Due to safety precautions, all meetings were held virtually.

The following table summarizes municipal officials that participated in the development of the annex and in what capacity, including the Township of Woolwich's hazard mitigation plan primary and alternate points of contact. Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 2 (Planning Process) and Appendix C (Meeting Documentation).

*Table 9.25-1. Hazard Mitigation Planning Team*

Primary Point of Contact	Alternate Point of Contact
Name/Title: Chris Beckett, Police Department Sergeant and OEM Coordinator Address: 120 Village Green Drive Woolwich Township, NJ 08085 Phone Number: 856-467-1667 x1224 Email: cbeckett@woolwichtwp.org NFIP Floodplain Administrator	Name/Title: Joe Morgan, Police Department Chief Address: 120 Village Green Drive Woolwich Township, NJ 08085 Phone Number: 856-467-1667 ext. 1133 Email: jmorgan@woolwichtwp.org



Name/Title: Chris Beckett, Police Department Sergeant and OEM Coordinator  
Address: 120 Village Green Drive Woolwich Township, NJ 08085  
Phone Number: 856-467-1667 x1224  
Email: cbeckett@woolwichtwp.org

Name	Title	Method of Participation
Chris Beckett	Police Department Sergeant and OEM Coordinator	Provided information on past events, previous action status, and contributed to mitigation strategy development
Matthew O'Loughlin	Deputy OEM Coordinator	Provided information on past events, previous action status, and contributed to mitigation strategy development

## 9.25.2 Municipal Profile

Woolwich was formed by royal charter on March 7, 1767, from portions of Greenwich Township, and was incorporated as one of New Jersey's initial 104 townships by an act of the New Jersey Legislature on February 21, 1798. The township was named for Woolwich, England.

According to the United States Census Bureau, the township had a total area of 21.39 square miles, including 21.07 square miles of land and 0.32 square miles of water. Swedesboro is an independent municipality entirely surrounded by the township. Unincorporated communities, localities and place names located partially or completely within the township include Asbury, Dilkes Mills, Lippencott, Porches Mill, Robbins, Rulons and Scull. The New Jersey Turnpike and Route 322 are the main roads that pass through the municipality. Racoon creek passes through the community which ultimately feeds into the Delaware River.

Woolwich Township is governed under the Township form of New Jersey municipal government. The Township Committee is comprised of five members, who are elected directly by the voters at-large in partisan elections to serve three-year terms of office on a staggered basis, with either one or two seats coming up for election each year as part of the November general election in a three-year cycle. At an annual reorganization meeting, the Township Committee selects one of its members to serve as Mayor and another as Deputy Mayor.

According to the U.S. Census, the 2010 population for the Township of Woolwich was 10,200. The estimated 2019 population was 12,549, an 18.7 percent increase from the 2010 Census. Data from the 2019 U.S. Census American Community Survey indicate that 6.3 percent of the population is 5 years of age or younger and 10.6 percent is 65 years of age or older. Communities must deploy a support system that enables all populations to safely reach shelters or to quickly evacuate a hazard area.

## 9.25.3 Jurisdictional Capability Assessment and Integration

The Township of Woolwich performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. Section 5 (Capability Assessment) describes



the components included in the capability assessment and their significance for hazard mitigation planning. This section summarizes the following findings of the assessment:

- An assessment of planning, legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of administrative and technical capabilities
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Classification under various community mitigation programs.
- The community's adaptive capacity to withstand hazard events.

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. Annex development included reviewing planning and policy documents and surveying each jurisdiction to obtain a better understanding of their progress in plan integration and how risk reduction is supported. Areas with current mitigation integration are summarized in this jurisdictional Capability Assessment (Section 9.25.3). The updated mitigation strategy includes opportunities the Township of Woolwich identified for integration of mitigation concepts to be incorporated into municipal procedures.

### 9.25.3.1 Planning, Legal, and Regulatory Capability

Section 5 (Capability Assessment) provides an overview of the planning, legal, and regulatory capabilities. The table below summarizes the regulatory tools that are available to the Township of Woolwich, what is present in the jurisdiction, and code citation and date.

*Table 9.25-2. Planning, Legal, and Regulatory Capability*

	Jurisdiction has this? (Yes/No)	Required by State? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<b>Codes, Ordinances, &amp; Regulations</b>					
<b>Building Code</b>	Yes	Yes	Chapter 68, Building Construction, 1977	State and Local	Woolwich Township Construction Code Department
<i>How does this reduce risk?</i> <ul style="list-style-type: none"> <li>• Establishes the Uniform Construction Code for construction within the Township.</li> </ul>					
<b>Zoning/Land Use Code</b>	Yes	Yes, if the jurisdiction has a planning board	Chapter 203, Zoning, 1992	Local	Joint Land Use Board
<i>How does this reduce risk?</i> <ul style="list-style-type: none"> <li>• The purpose of this chapter is to regulate the nature and extent of the uses of land and of buildings and structures thereon for the purposes set forth in the Municipal Land Use Law and to exercise the power to zone granted to municipalities of the State of New Jersey.</li> </ul>					
<b>Subdivision Ordinance</b>	Yes	Yes, if the jurisdiction has a planning board	Chapter 163, Subdivision of Land, 1977	Local	Joint Land Use Board
<i>How does this reduce risk?</i>					



	Jurisdiction has this? (Yes/No)	Required by State? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<ul style="list-style-type: none"> <li>The purpose of this chapter is to require approval of subdivisions within the Township of Woolwich by the Planning Board or, in appropriate cases, by the Board of Adjustment, for the purposes set forth in the Municipal Land Use Law and to exercise the power to regulate subdivisions granted to municipalities of the State of New Jersey.</li> </ul>					
<b>Stormwater Management Ordinance</b>	Yes	Yes	Chapter 157, Stormwater Management, 2006	Local	Engineer
<i>How does this reduce risk?</i> <ul style="list-style-type: none"> <li>Through this article, Woolwich Township has established the following goals for stormwater control: <ul style="list-style-type: none"> <li>(a) To reduce flood damage, including damage to life and property;</li> <li>(b) To minimize any increase in stormwater runoff from new development;</li> <li>(c) To reduce soil erosion from any development or construction project;</li> <li>(d) To assure the adequacy of existing and proposed culverts and bridges, and other instream structures;</li> <li>(e) To maintain groundwater recharge;</li> <li>(f) To minimize any increase in nonpoint pollution;</li> <li>(g) To maintain the integrity of stream channels for their biological functions, as well as for drainage;</li> <li>(h) To restore, protect, maintain and enhance the quality of the streams and water resources and the ecological character and quality of Woolwich Township;</li> <li>(i) To minimize pollutants in stormwater runoff from new and existing development in order to restore, protect, enhance and maintain the chemical, physical and biological integrity of the surface and ground waters of Woolwich Township, to protect public health and to enhance the domestic, municipal, recreational, industrial and other uses of water; and</li> <li>(j) To protect public safety through the proper design and operation of stormwater management basins.</li> </ul> </li> <li>In order to achieve the goals for stormwater control set forth in this article, Woolwich Township has identified the following management techniques: <ul style="list-style-type: none"> <li>(a) Implementation of multiple stormwater management best management practices (BMPs) may be necessary to achieve the performance standards for stormwater runoff quantity and rate, groundwater recharge, erosion control, and stormwater runoff quality established through this article.</li> <li>(b) Compliance with the stormwater runoff quantity and rate, groundwater recharge, erosion control, and stormwater runoff quality standards established through N.J.A.C. 7:8-1.1 et seq., and this article, shall be accomplished to the maximum extent practicable through the use of nonstructural BMPs, before relying on structural BMPs. Nonstructural BMPs are also known as low-impact development (LID) techniques.</li> <li>(c) Nonstructural BMPs shall include both environmentally sensitive site design and source controls that prevent pollutants from being placed on the site or from being exposed to stormwater.</li> <li>(d) Source control plans shall be developed based upon physical site conditions and the origin, nature and the anticipated quantity or amount of potential pollutants.</li> <li>(e) Structural BMPs, where necessary, shall be integrated with nonstructural stormwater management strategies and proper maintenance plans.</li> <li>(f) When using structural BMPs, multiple stormwater management measures, smaller in size and distributed spatially throughout the land development site, shall be used wherever possible to achieve the performance standards for water quality, quantity and groundwater recharge established through this article before relying on a single, larger stormwater management measure to achieve these performance standards.</li> </ul> </li> </ul>					
<b>Post-Disaster Recovery/ Reconstruction Ordinance</b>	No	No	-	-	-
<i>How does this reduce risk?</i>					
<b>Real Estate Disclosure</b>		Yes		State	
<i>How does this reduce risk?</i>					
<b>Growth Management</b>		Yes, if the jurisdiction has a planning board		Local	
<i>How does this reduce risk?</i>					
<b>Site Plan Ordinance</b>	Yes	Yes, if the jurisdiction has a planning board	Chapter 149, Site Plan Review, 1978	Local and County	Planning Board, Board of Adjustment



	Jurisdiction has this? (Yes/No)	Required by State? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<i>How does this reduce risk?</i> <ul style="list-style-type: none"> <li>The purpose of this chapter is to require approval of proposed site plans within the Township of Woolwich by the Planning Board or, in appropriate cases, by the Board of Adjustment, for the purposes set forth in the Municipal Land Use Law and to exercise the power of site plan review and approval granted to municipalities of the State of New Jersey.</li> </ul>					
<b>Environmental Protection Ordinance</b>	Yes	Yes, depends on type of environmental areas	Chapter 113, Hazardous Waste, 2005	Local	Mayor and Township Committee
<i>How does this reduce risk?</i> <ul style="list-style-type: none"> <li>Establishes the responsibility for cleanup and costs of hazardous waste spills in the Township.</li> </ul>					
<b>Flood Damage Prevention Ordinance</b>	Yes	Yes	Chapter 103, Flood Damage Prevention, 2010	Federal, State, County and Local	Floodplain administrator
<i>How does this reduce risk?</i> <ul style="list-style-type: none"> <li>It is the purpose of this chapter to promote the public health, safety and general welfare, and to minimize private and public losses due to flood conditions in specific areas by provisions designed to: <ul style="list-style-type: none"> <li>A. Protect human life and health;</li> <li>B. Minimize expenditure of public money for costly flood insurance control projects;</li> <li>C. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;</li> <li>D. Minimize prolonged business interruptions;</li> <li>E. Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard;</li> <li>F. Help maintain a stable tax base by providing for the second use and development of areas of special flood hazard so as to minimize future flood blight areas;</li> <li>G. Ensure that potential buyers are notified that property is in an area of special flood hazard; and</li> <li>H. Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.</li> </ul> </li> <li>In order to accomplish its purpose, this chapter includes methods and provisions for: <ul style="list-style-type: none"> <li>A. Restricting or prohibiting uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;</li> <li>B. Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;</li> <li>C. Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;</li> <li>D. Controlling filling, grading, dredging, and other development which may increase flood damage; and</li> <li>E. Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.</li> </ul> </li> <li>The ordinance includes the state mandated one-foot freeboard requirement.</li> </ul>					
<b>Wellhead Protection</b>	No	No	-	-	-
<i>How does this reduce risk?</i>					
<b>Emergency Management Ordinance</b>	No	No	-	-	-
<i>How does this reduce risk?</i>					
<b>Climate Change Ordinance</b>	No	No	-	-	-
<i>How does this reduce risk?</i>					
<b>Disaster Recovery Ordinance</b>	No	No	-	-	-
<i>How does this reduce risk?</i>					
<b>Disaster Reconstruction Ordinance</b>	No	No	-	-	-
<i>How does this reduce risk?</i>					



	Jurisdiction has this? (Yes/No)	Required by State? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<b>Other</b>		-			
<b>Codes, Ordinances, &amp; Regulations Connection to Mitigation and Safe Growth</b>					
<ul style="list-style-type: none"> <li>• Prior to, zoning changes, or development permitting, does the jurisdiction review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use?</li> <li>• Does the zoning ordinance discourage development or redevelopment within natural areas including wetlands, floodways, and floodplains?</li> <li>• Does it contain natural overlay zones that set conditions?</li> <li>• Does the ordinance require developers to take additional actions to mitigate natural hazard risk?</li> <li>• Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use?</li> <li>• Do the ordinances prohibit development within, of filling of, wetlands, floodways, and floodplains?</li> <li>• Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas?</li> <li>• Do the regulations provide for conservation subdivisions or cluster subdivisions in order to conserve environmental resources?</li> <li>• Do the regulations allow density transfers where hazard areas exist?</li> <li>• When updating ordinances, is hazard mitigation considered?</li> </ul>					
<b>Planning Documents</b>					
<b>Master Plan</b>	Yes	Yes – County Yes - municipality	Master Plan, 2008	Local	
<i>How does this reduce risk?</i>					
<b>Capital Improvement Plan</b>		Allowed			
<i>How does this reduce risk?</i>					
<b>Disaster Debris Management Plan</b>		No			
<i>How does this reduce risk?</i>					
<b>Floodplain Management or Watershed Plan</b>		No			
<i>How does this reduce risk?</i>					
<b>Stormwater Management Plan</b>	Yes	Yes	Stormwater Management Plan, 2006	Local	
<i>How does this reduce risk?</i>					
<b>Stormwater Pollution Prevention Plan</b>		Yes			
<i>How does this reduce risk?</i>					
<b>Urban Water Management Plan</b>		No			
<i>How does this reduce risk?</i>					
<b>Habitat Conservation Plan</b>		No			
<i>How does this reduce risk?</i>					
<b>Economic Development Plan</b>		No			
<i>How does this reduce risk?</i>					
<b>Shoreline Management Plan</b>		No			
<i>How does this reduce risk?</i>					
<b>Community Wildfire Protection Plan</b>		No			
<i>How does this reduce risk?</i>					



	Jurisdiction has this? (Yes/No)	Required by State? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<b>Community Forest Management Plan</b>		No			
<i>How does this reduce risk?</i>					
<b>Transportation Plan</b>		No			
<i>How does this reduce risk?</i>					
<b>Agriculture Plan</b>		No			
<i>How does this reduce risk?</i>					
<b>Climate Action/ Resiliency Plan</b>		No			
<i>How does this reduce risk?</i>					
<b>Tourism Plan</b>		No			
<i>How does this reduce risk?</i>					
<b>Business/ Downtown Development Plan</b>		No			
<i>How does this reduce risk?</i>					
<b>Other</b>					
<b>Planning Connection to Mitigation and Safe Growth</b>					
<ul style="list-style-type: none"> <li>When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals.</li> <li>Annually, the jurisdiction will review mitigation actions when allocating funding.</li> <li>Do budgets limit expenditures on projects that would encourage development in areas vulnerable to natural hazards?</li> <li>Do infrastructure policies limit extension of existing facilities and services that would encourage development in areas vulnerable to natural hazards?</li> <li>Do budgets provide funding for hazard mitigation projects identified in the County HMP?</li> <li>Does the future land use map clearly identify natural hazard areas? Plan</li> <li>Do the land use policies discourage development or redevelopment with natural hazard areas?</li> <li>Does the plan provide adequate space for expected future growth in areas located outside natural hazard areas?</li> <li>Does the transportation plan limit access to hazard areas?</li> <li>Is transportation policy used to guide growth to safe locations?</li> <li>Are transportation systems designed to function under disaster conditions (e.g., evacuation)?</li> <li>Are environmental systems that protect development from hazards identified and mapped?</li> <li>Do environmental policies maintain and restore protective ecosystems?</li> <li>Do environmental policies provide incentives to development that is located outside protective ecosystems?</li> </ul>					
<b>Response/Recovery Planning</b>					
<b>Emergency Operations Plan</b>	Yes	Yes	Emergency Operations Plan, 2013	Local	
<i>How does this reduce risk?</i>					
<b>Strategic Recovery Planning Report</b>		No			
<i>How does this reduce risk?</i>					
<b>Threat &amp; Hazard Identification &amp; Risk Assessment (THIRA)</b>		No			
<i>How does this reduce risk?</i>					
<b>Post-Disaster Recovery Plan</b>		No			
<i>How does this reduce risk?</i>					
<b>Continuity of Operations Plan</b>		No			





	Jurisdiction has this? (Yes/No)	Required by State? (Yes/No)	Code Citation and Date (code chapter, name of plan, date of plan)	Authority (local, county, state, federal)	Individual / Department / Agency Responsible
<i>How does this reduce risk?</i>					
<b>Public Health Plan</b>		No			
<i>How does this reduce risk?</i>					
<b>Other</b>		-			
<b>Response/Recovery Planning Connection to Mitigation and Safe Growth</b>					
<ul style="list-style-type: none"> <li>Does your EOP cover short-term response and long-term recovery to address communications, evacuation, and housing necessary for identified hazards?</li> </ul>					

### 9.25.3.2 Development and Permitting Capability

The table below summarizes the capabilities of the Township of Woolwich to oversee and track development.

*Table 9.25-3. Development and Permitting Capability*

Indicate if your jurisdiction implements the following	Yes/No	Comment
<b>Do you issue development permits?</b> <ul style="list-style-type: none"> <li>If yes, what department is responsible?</li> <li>If no, what is your process for development?</li> </ul>		
Are permits tracked by hazard area? (For example, floodplain development permits.)		
<b>Do you have a buildable land inventory?</b> <ul style="list-style-type: none"> <li>If yes, describe.</li> <li>If no, quantitatively describe the level of buildout in the jurisdiction.</li> </ul>		

### 9.25.3.3 Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Township of Woolwich and their current responsibilities which contribute to hazard mitigation.

*Table 9.25-4. Administrative and Technical Capabilities*

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
<b>Administrative Capability</b>		
Planning Board		
Zoning Board of Adjustments		
Planning Department		
Mitigation Planning Committee		
Environmental Board/Commission		
Open Space Board/Committee		
Economic Development Commission/Committee		
Public Works/Highway Department		
Construction/Building/Code Enforcement Department		





Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Emergency Management/Public Safety Department		
Warning Systems / Services (mass notification system, outdoor warning signals)		
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)		
Mutual aid agreements		
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?		
Other		
<b>Technical/Staffing Capability</b>		
Planners or engineers with knowledge of land development and land management practices		
Engineers or professionals trained in building or infrastructure construction practices		
Planners or engineers with an understanding of natural hazards		
Staff with expertise or training in benefit/cost analysis		
Professionals trained in conducting damage assessments		
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications		
Scientist familiar with natural hazards		
Surveyor(s)		
Emergency Manager		
Grant writer(s)		Are data and maps from the HMP used to support documentation in grant applications?
Resilience Officer		
Other (this could include stormwater engineer, environmental specialist, etc.)		
<b>How do your administrative/technical capabilities contribute to risk reduction in your community?</b>		
<ul style="list-style-type: none"> <li>PLACEHOLDER</li> </ul>		

### 9.25.3.4 Fiscal Capability

The table below summarizes financial resources available to the Township of Woolwich.

Table 9.25-5. Fiscal Capabilities

Financial Resources	Are these accessible or eligible to use for mitigation? (Yes/No) If yes, please describe. If no, can this be used to support in the future?
Community development Block Grants (CDBG, CDBG-DR)	
Capital improvements project funding	
Authority to levy taxes for specific purposes	



Financial Resources	Are these accessible or eligible to use for mitigation? (Yes/No) If yes, please describe. If no, can this be used to support in the future?
User fees for water, sewer, gas or electric service	
Impact fees for homebuyers or developers of new development/homes	
Stormwater utility fee	
Incur debt through general obligation bonds	
Incur debt through special tax bonds	
Incur debt through private activity bonds	
Withhold public expenditures in hazard-prone areas	
Other federal or state funding programs	
Open Space Acquisition funding programs	
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	
<b>Fiscal Connection to Mitigation and Safe Growth</b>	
<ul style="list-style-type: none"> <li>How do your fiscal capabilities contribute to risk reduction in your community? <b>PLACEHOLDER</b></li> <li>When constructing upcoming budgets, hazard mitigation actions will be funded as budget allows. Construction projects will be evaluated to see if they meet the hazard mitigation goals. <b>PLACEHOLDER</b></li> <li>Annually, the jurisdiction will review mitigation actions when allocating funding. <b>PLACEHOLDER</b></li> <li>Do budgets limit expenditures on projects that would encourage development in areas vulnerable to natural hazards? <b>PLACEHOLDER</b></li> <li>Do infrastructure policies limit extension of existing facilities and services that would encourage development in areas vulnerable to natural hazards? <b>PLACEHOLDER</b></li> <li>Do budgets provide funding for hazard mitigation projects identified in the County HMP? <b>PLACEHOLDER</b></li> </ul>	

### 9.25.3.5 Education and Outreach Capability

The table below summarizes the education and outreach resources available to the Township of Woolwich.

*Table 9.25-6. Education and Outreach Capabilities*

Outreach Resources	Available? (Yes/No)	Comments (available staff, responsibilities, etc.)
Public information officer or communications office		
Personnel skilled or trained in website development		
Hazard mitigation information available on your website		
Social media for hazard mitigation education and outreach		
Citizen boards or commissions that address issues related to hazard mitigation		
Other programs already in place that could be used to communicate hazard-related information		
Warning systems for hazard events		



Outreach Resources	Available? (Yes/No)	Comments (available staff, responsibilities, etc.)
Natural disaster/safety programs in place for schools		
Other		
<b>Does the jurisdiction have any public outreach mechanisms / programs in place to inform citizens on natural hazards, risk, and ways to protect themselves during such events? If yes, please describe.</b>		
• PLACEHOLDER		

### 9.25.3.6 Community Classifications

The table below summarizes classifications for community programs available to the Township of Woolwich.

Table 9.25-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)			
Building Code Effectiveness Grading Schedule (BCEGS)			
Public Protection (ISO Fire Protection Classes 1 to 10)			
Sustainable Jersey			
StormReady Certification			
Firewise Communities classification			

Note:

N/A Not applicable  
NP Not participating  
- Unavailable

### 9.25.3.7 Adaptive Capacity

Adaptive capacity is defined as “the ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or respond to consequences” (IPCC 2014). In other words, it describes a jurisdiction’s current capabilities to adjust to, protect from, or withstand a future hazard event, future conditions, and changing risk. The table below summarizes the adaptive capacity for each hazard of concern and the jurisdiction’s rating.

Table 9.25-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak*
Coastal Erosion	Moderate
Dam/ Levee	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Ext Temp	Moderate
Flood	Moderate



Hazard	Adaptive Capacity - Strong/Moderate/Weak*
Geologic	Moderate
Hazmat	Moderate
Hurricane	Moderate
Invasive	Moderate
Nor'Easter	Moderate
Severe Storm	Moderate
Severe Winter Storm	Strong
Wildfire	Moderate
Utility Failure	Moderate

\*Strong = Capacity exists and is in use, Moderate = Capacity may exist; but is not used or could use some improvement, Weak = Capacity does not exist or could use substantial improvement.

## 9.25.4 National Flood Insurance Program (NFIP) Compliance

The table below provides specific information on the management and regulation of the regulatory floodplain, including current and future compliance with the NFIP.

Table 9.25-9. NFIP Summary

NFIP Topic	Comments
<b>Flood Vulnerability Summary</b>	
<ul style="list-style-type: none"> <li># NFIP Policies:</li> <li># RL properties:</li> <li># SRL properties:</li> <li># RL/SRL mitigated: (elevation or acquisition and funding source: XXX)</li> </ul>	<ul style="list-style-type: none"> <li>Total premium in force: \$</li> <li># claims filed:</li> <li>Total loss payments: \$</li> </ul>
Describe areas prone to flooding in your jurisdiction.	
Do you maintain a list of properties that have been damaged by flooding?	
Do you maintain a list of property owners interested in flood mitigation, and if so, how many are interested in (elevation or acquisition)?	
How do you make Substantial Damage determinations?	
<ul style="list-style-type: none"> <li>How many were declared for recent flood events in your jurisdiction?</li> </ul>	
Detail any RiskMAP projects currently underway in your jurisdiction.	
Do your flood hazard maps adequately address the flood risk within your jurisdiction?	
<ul style="list-style-type: none"> <li>If not, state why.</li> </ul>	
<b>NFIP Administration</b>	
What local department is responsible for floodplain management?	



NFIP Topic	Comments
Are any staff certified floodplain managers (CFMs) or is a consultant retained?	
Provide an explanation of who in your municipality provides NFIP administration services (permit review, GIS, education/outreach, inspections, engineering capability).	
What specific training or support does your floodplain management staff need to support its floodplain management program?	
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	
Do you have access to resources to determine possible future flooding conditions from climate change?	
<b>NFIP Compliance</b>	
List any outstanding NFIP compliance violations.	
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	
What is the local law number or municipal code of your flood damage prevention ordinance? What is the date that your flood damage prevention ordinance was last amended?	
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	
Are there other local ordinances, plans, or programs (site plan review, consideration of flood risk reduction when granting height variances) that support floodplain management and meeting the NFIP requirements?	
Does your jurisdiction participate in CRS? • If yes, is your jurisdiction interested in improving its CRS Classification? • If no, is your jurisdiction interested in joining the CRS program?	

Source: FEMA September 16, 2019; NJDEP - 2021

Notes:

RL—Repetitive Loss; SRL—Severe Repetitive Loss; NA—Not applicable

## 9.25.5 Growth/Development Trends

Understanding how past, current, and projected development patterns have or are likely to increase or decrease risk in hazard areas is a key component to understanding a jurisdiction's overall risk to its hazards of concern. The table below summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development.

*Table 9.25-10. Recent and Expected Future Development*

Type of Development	2016	2017	2018	2019	2020	2021
Number of Building Permits for New Construction Issued Since the Previous HMP* (within regulatory floodplain/ outside regulatory floodplain)						



	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single Family	66	0	12	0	25	0	29	0	17	0	38	0
Multi-Family	3	0	0	0	0	0	1	0	0	0	0	0
Other (commercial, mixed-use, etc.)	3	0	1	0	2	0	0	0	2	0	2	0
Total Permits Issued	72	0	13	0	27	0	30	0	19	0	40	0
Property or Development Name	Type of Development	# of Units / Structures			Location (address and/or block and lot)		Known Hazard Zone(s)*			Description / Status of Development		
Recent Major Development and Infrastructure from 2015 to Present												
None Identified												
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years												
None Anticipated												

SFHA Special Flood Hazard Area (1% annual chance flood event)

\* Only location-specific hazard zones or vulnerabilities identified.

## 9.25.6 Jurisdictional Risk Assessment

The hazard profiles in Section 4 (Risk Assessment) provide detailed information regarding each plan participant's vulnerability to the identified hazards. Section 4.1 (Identification of Hazards of Concern), Section 4.2 (Methodology and Tools), and Section 4.4 (Hazard Ranking) provide a detailed summary for the Township of Woolwich's risk assessment results, and data used to determine the hazard ranking are discussed later in this section.

Hazard area extent and location maps provided below illustrate the probable areas impacted within the jurisdiction. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps were only generated for those hazards that can be clearly identified using mapping techniques and technologies and for which the Township of Woolwich has significant exposure. The maps also show the location of potential new development, where available.





Figure 9.25-1. Township of Woolwich Hazard Area Extent and Location Map 1

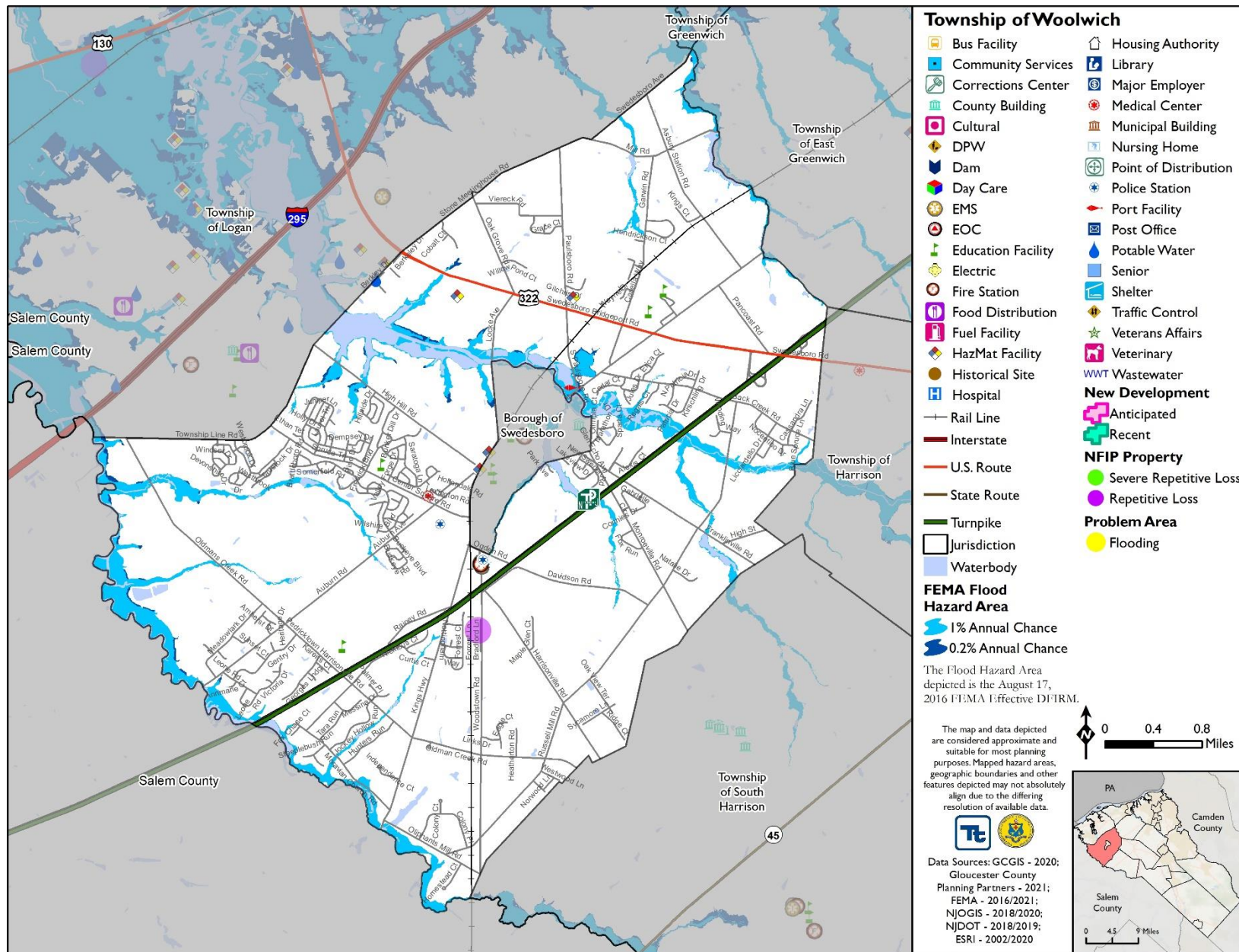






Figure 9.25-2. Township of Woolwich Hazard Area Extent and Location Map 2

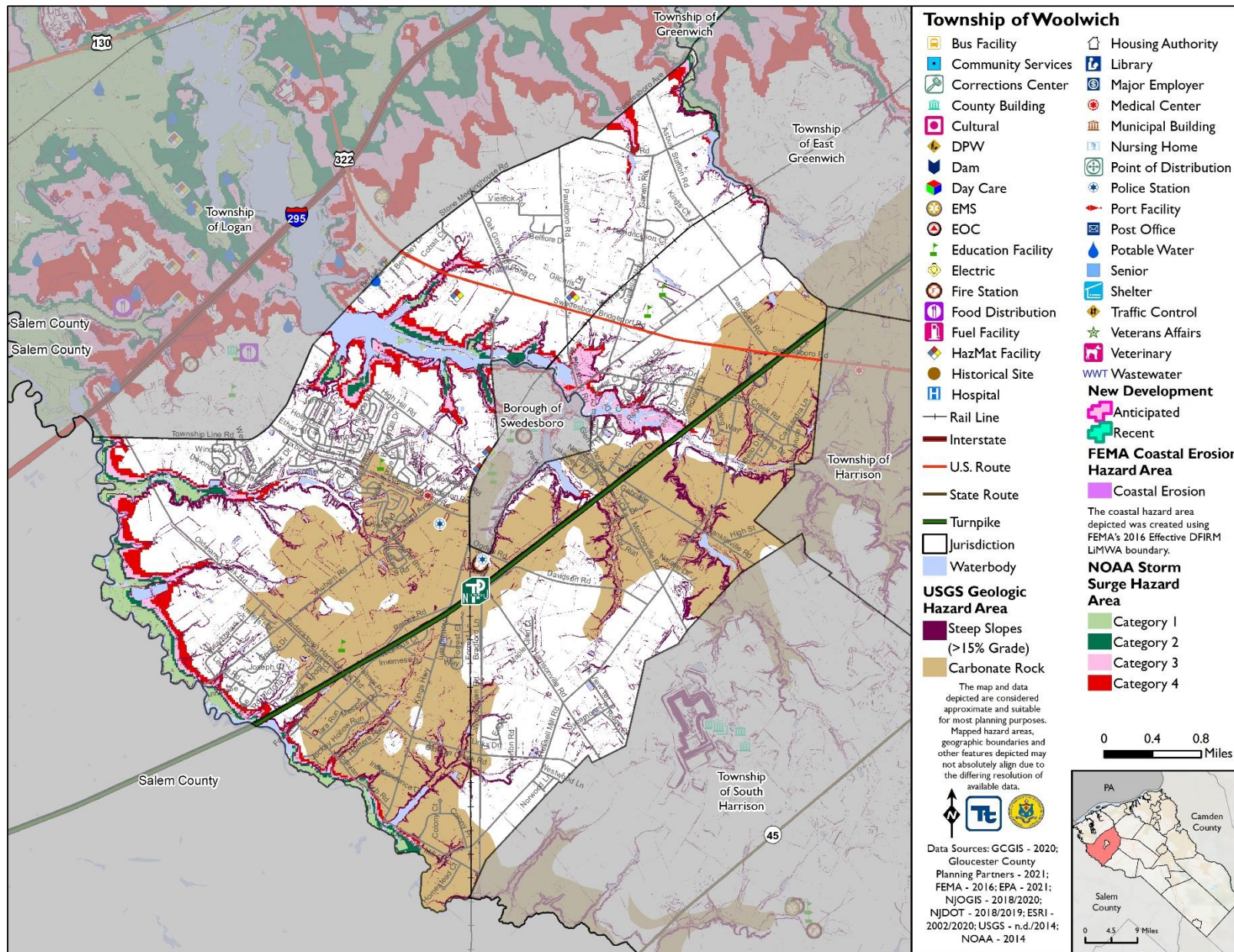






Figure 9.25-3. Township of Woolwich Hazard Area Extent and Location Map 3

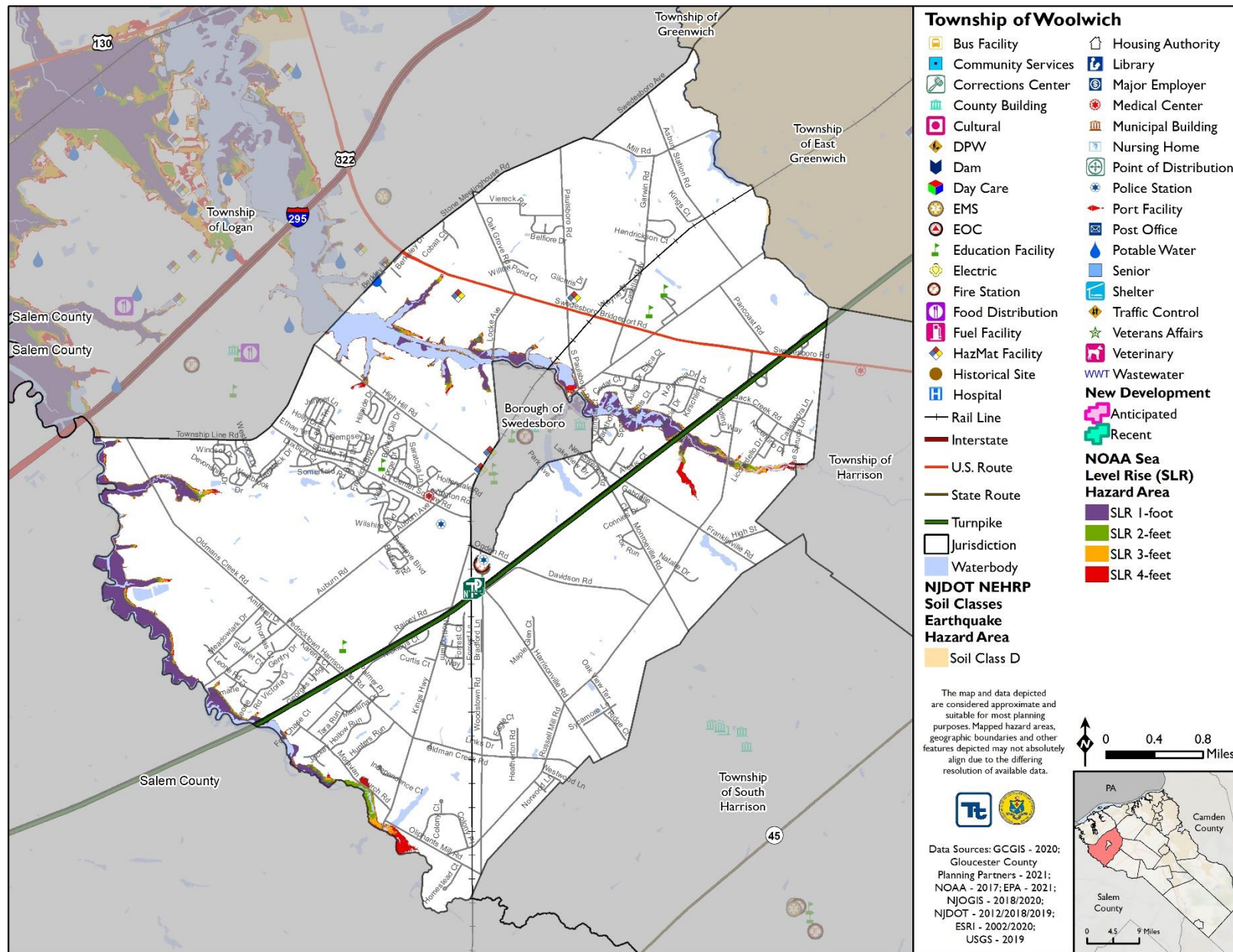
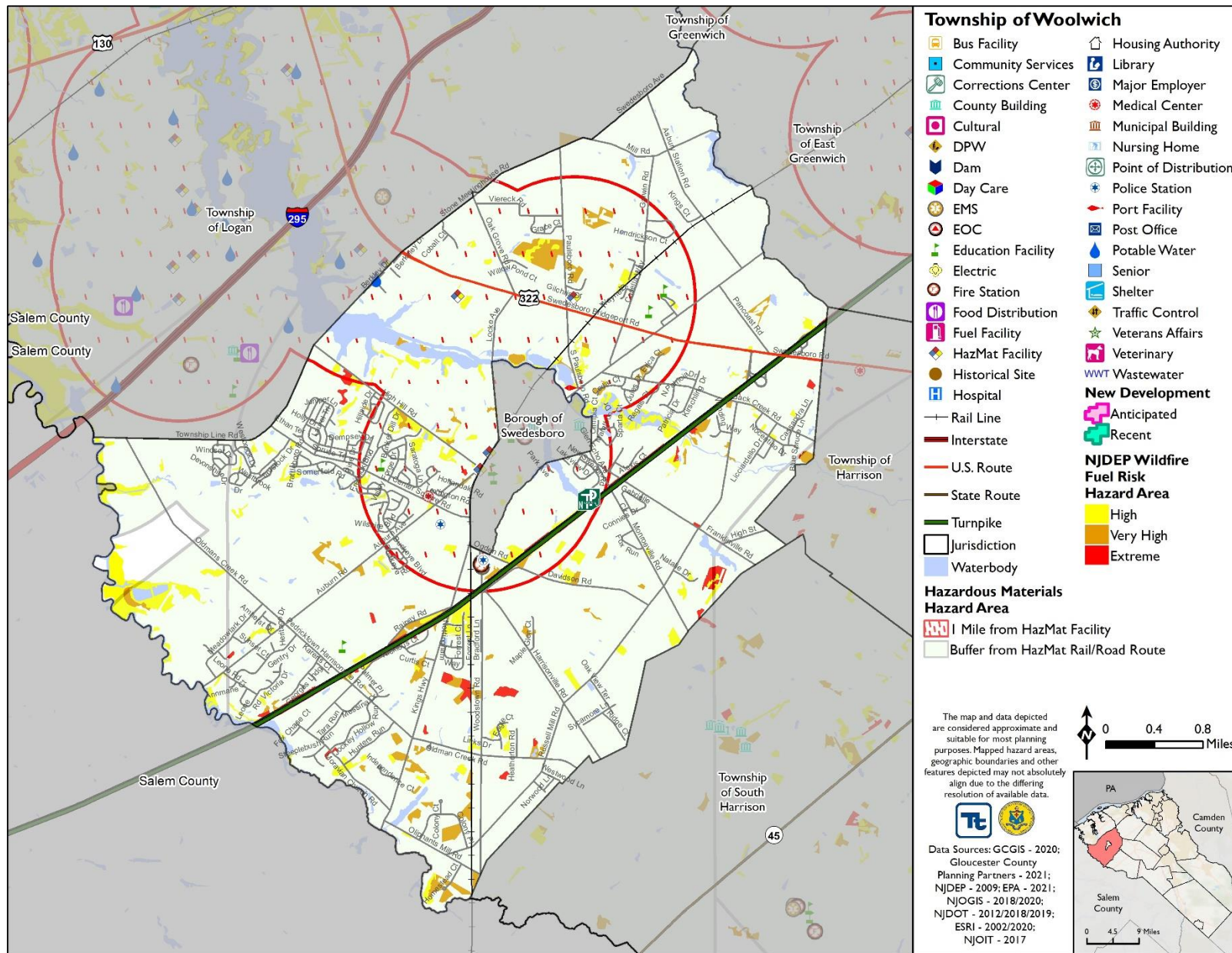




Figure 9.25-4. Township of Woolwich Hazard Area Extent and Location Map 4







### 9.25.6.1 Hazard Event History

Gloucester County has a history of natural hazard events as detailed in Section 4 (Risk Assessment) 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.

The Township of Woolwich's history of federal declarations (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Gloucester County. The table below provides details regarding municipal-specific loss and damages the Township experienced during hazard events since the last hazard mitigation plan update. Information provided in the table below is based on reference material or local sources.

*Table 9.25-11. Hazard Event History*

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Municipal Summary of Damages and Losses
February 15, 2015	Cold/Wind Chill	No	The center of an arctic air mass brought some of the lowest wind chills and temperatures of the winter season to New Jersey. Wind chill factors were recorded as low as 22 degrees below zero, with actual temperatures reaching -2°F.	Although the County was impacted, the Township did not report damages.
June 23, 2015	Severe Storm (DR-4231-NJ)	Yes	In Gloucester County, the Red Cross opened two comfort stations. Wind damage was most severe between Greenwich Township and Mantua Township. Lightning struck a refinery in Paulsboro, causing a loss of power and off-gas. In Wenonah, wind damage knocked down several massive oak trees. In Mantua, the microburst knocked down an estimated 2,800 trees and 100 poles. The Township's Fire Department building was severely damaged. Wind also knocked down power poles in East Greenwich along Kings Highway. Roads throughout East Greenwich were impassable. Damage was estimated at \$10 million.	Although the County was impacted, the Township did not report damages.
January 22 – 24, 2016	Severe Winter Storm and Snowstorm (DR-4264-NJ)	Yes	Snow totals in Gloucester County included 21 inches in Deptford, 20.9 inches in Pitman, 17.5 inches in Turnersville, 14.5 inches in Williamstown, and one foot in Mullica Hill.	Although the County was impacted, the Township did not report damages.
March 6, 2018	Winter Storm	No	Gloucester County was hit with isolated heavy snow, with totals ranging from five inches in Pitman to 6.5 inches in West Deptford.	Although the County was impacted, the Township did not report damages.
January 20, 2020 – Present	Covid-19 Pandemic (EM-3451-NJ) (DR-4488-NJ)	Yes	Between March 1, 2020 and March 15, 2021, Gloucester County reported 21,065 confirmed cases of COVID-19, and 530 total fatalities.	The Township was subject to closures and social distancing/masking requirements.



Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Municipal Summary of Damages and Losses
August 4, 2020 and August 7, 2020	Tropical Storm Isaias	Yes	On August 4, 2020 TS Isaias moved through the region dropping significant rain throughout Woolwich Township. A subsequent storm moved through the area on August 7, 2020 bringing additional rainfall that was unable to properly drain into already overflowing waterways and storm sewers.	Roadway and drainage areas resulted.

### 9.25.6.2 Hazard Ranking and Vulnerabilities

The hazard profiles in Section 4.1 (Identification of Hazards of Concern) of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. The following summarizes the Township of Woolwich's risk assessment results and data used to determine the hazard ranking.

#### Hazard Ranking

This section provides the community specific identification of the primary hazard concerns based on identified problems, impacts and the results of the risk assessment as presented in Section 4 (Risk Assessment) of the plan. The ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy as well as community capability and changing future climate conditions. This input supports the mitigation action development to target those hazards with highest level of concern.

As discussed in Section 4.4 (Hazard Ranking), each participating jurisdiction can have differing degrees of risk exposure and vulnerability compared with Gloucester County as a whole. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Township of Woolwich. The Township of Woolwich reviewed the county hazard risk/vulnerability risk ranking table, including municipal-specific results, to reflect the relative risk of the hazards of concern to the community.

During the review of the hazard/vulnerability risk ranking, the Township indicated the following:

- The Township agreed with the calculated hazard rankings.

Table 9.25-12. Hazard Ranking Input

Coastal Erosion	Dam/ Levee	Disease Outbreak	Drought	Earthquake	Extreme Temperature	Flood
Low	Low	Low	Medium	Low	Medium	Low

Geologic	Hazardous Materials	Hurricane	Invasive Species	Nor'Easter	Severe Storm
Low	High	Low	Low	Medium	High



Severe Winter Storm	Wildfire	Utility Failure
Medium	Low	Medium

Note: The scale is based on the hazard rankings established in Section 4.4 (Hazard Ranking) and modified as appropriate during review by the jurisdiction.

## Critical Facilities

The table below identifies critical facilities in the community located in the 1-percent and 0.2-percent floodplain and presents Hazus estimates of the damage and loss of use to critical facilities as a result of a 1-percent annual chance flood event.

Table 9.25-13. Potential Flood Losses to Critical Facilities

Name	Type	Lifeline?	Exposure		Comment
			1% Event	0.2% Event	
Thompson Point NJ and Vicinity	Port Facility	X	X	X	-

Source: Gloucester County Planning Partners - 2021; HIFLD - 2020; EPA - 2021; FEMA 2016

### 9.25.6.3 Identified Issues

After review of the Township of Woolwich's hazard event history, hazard rankings, jurisdiction specific vulnerabilities, hazard area extent and location, and current capabilities, the Township of Woolwich has identified the following vulnerabilities within their community:

- Oliphant's Mill Dam is degraded and requires rehabilitation to prevent failure. Failure would impact at least one property. The dam is privately owned but the Township will work to assist the property owner as failure would impact Oliphant's Mill Road.
- High Hill Road floods during heavy rains and with high tides. There some coastal flooding impacts.
- The Township has one repetitive loss property.
- Dryden Driving Bridge at Russell Mill Road and Winding Way is an older bridge that will eventually need replacement at a higher standard.
- The Flood Damage Prevention Ordinance requires update.
- The Township lacks a Disaster Debris Management Plan.

## 9.25.7 Mitigation Strategy and Prioritization

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



### 9.25.7.1 Past Mitigation Initiative Status

The following table indicates progress on the community's mitigation strategy identified in the 2016 HMP. 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 are discussed in the 'Capability Assessment' presented previously in this annex.

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Table 9.25-14. Status of Previous Mitigation Actions

2016 Action Number and Action Description		Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2022 HMP? Check if Yes	Enter 2022 HMP Action #
MJ-1	Alleviate flooding at High Hill Road.	Municipal OEM, Gloucester County DPW	No Progress; floods during heavy rains up to a foot, some coastal flooding impacts.	X	2022-Woolwich-002
MJ-2	Floodwalls for High Hill Road and Moravian Road.	Municipal OEM, Gloucester County DPW	No Progress. Other methods of ingress/egress are available when flooding does occur in rare instances. Floodwalls would not be cost effective.		
MJ-3	Alleviate flooding at Woodstown Road at Salem County border.	Municipal OEM, Gloucester County DPW, Salem County DPW	No Progress. Not a large concern.		
MJ-4	Alleviate flooding at Kings Highway County Line Bridge.	Municipal OEM, Gloucester County DPW, Salem County DPW	No Progress. Not a large concern.		
MJ-5	Critical facilities protection / hazard threat recognition of HazMat (Grasso Foods Inc is the largest pepper packing plant in the country. Services all 50 state & designated a Tier I facility).	Municipal OEM, Grasso Foods Inc	Ongoing Capability. Company is very cooperative with the Township and shares information regularly.		
M-01	Identify and pursue outreach and education opportunities	Municipal OEM	Ongoing Capability		
M-02	Prioritize critical facilities and complete site and facility surveys to identify vulnerabilities and potential mitigation measures.	Municipal OEM and Facility Managers	Ongoing Capability		
M-03	Prioritize recurrent drainage problem areas and initiate data collection to track unreimbursed damages and related response and recovery expenses.	Municipal OEM and Municipal Working Group	Ongoing Capability		
M-04	Conduct Regular Municipal Working Group Meetings	Municipal OEM and Municipal Working Group	Ongoing Capability		
M-05	Upgrade back-up emergency power generator at Governor Charles C. Stratton School (CF-9).	Municipal OEM, Public Works Department, School Board	In Progress		
M-06	Upgrade back-up emergency power generator at General Charles G. Harker School (CF-10).	Municipal OEM, Public Works Department, School Board	In Progress		



2016 Action Number and Action Description		Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2022 HMP? Check if Yes	Enter 2022 HMP Action #
M-07	Upgrade back-up emergency power generator at Kingsway Regional Middles School (CF-11).	Municipal OEM, Public Works Department, School Board			
M-08	Upgrade back-up emergency power generator at Kingsway Regional High School (CF-12).	Municipal OEM, Public Works Department, School Board			
M-09	Assessment of two private dams	Municipal OEM, Public Works, Private Owners	In Progress. Pursuing Oliphant's Mill Dam.	x	2022-Woolwich-004
M-10	Elevation / acquisition of home on Liscardello Drive.	Floodplain Administrator and Private Owners	Complete. No longer on RL list.		
M-11	Upgrade Dryden Driving Bridge at Russell Mill Road and Winding Way.	Municipal OEM, Public Works Department	No Progress. Older bridge will eventually need replacement at higher standard.	X	2022-Woolwich-001



### 9.25.7.2 Additional Mitigation Efforts

Other than routine maintenance activities and progress noted in Table 9.25-14, the Township did not undertake any additional mitigation efforts in the last five years.

### 9.25.7.3 Proposed Hazard Mitigation Initiatives for the HMP Update

The Township of Woolwich participated in a mitigation action workshop in August 2021 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).

The table below indicates the range of proposed mitigation action categories.

*Table 9.25-15. Analysis of Mitigation Actions by Hazard and Category*

Hazard	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Coastal Erosion	X									X
Dam/ Levee	X	X							X	X
Disease Outbreak	X									X
Drought	X									X
Earthquake	X									X
Ext Temp	X									X
Flood	X	X			X	X			X	X
Geologic	X									X
Hazmat	X									X
Hurricane	X	X				X				X
Invasive	X									X
Nor'Easter	X	X				X				X
Severe Storm	X	X				X				X
Severe Winter Storm	X									X
Wildfire	X									X
Utility Failure	X									X

Note: Section 6 (Mitigation Strategy) provides for an explanation of the mitigation categories.

The table below (Table 9.25-16) summarizes the comprehensive range of specific mitigation initiatives the Township of Woolwich 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 (Mitigation Strategy), 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 9.25-17 provides a summary of the prioritization of all proposed mitigation initiatives for the HMP update.

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Table 9.25-16. Proposed Hazard Mitigation Initiatives and Associated Priority

Project Number	Mitigation Initiative Name	Description of Problem and Solution	New or Existing Assets ?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Timeline	Priority	Mitigation Category	CRS Category
2022-Woolwich-001	Oliphant's Mill Dam	<p><b>Problem:</b> Oliphant's Mill Dam is degraded and requires rehabilitation to prevent failure. Failure would impact at least one property. The dam is privately owned but the Township will work to assist the property owner as failure would impact Oliphant's Mill Road.</p> <p><b>Solution:</b> The Township will work with the private owner to provide input on necessary repairs and improvements, secure funding, and implement the desired actions.</p>	Existing	Dam Failure, Flood	1, 2, 7	Township of Woolwich OEM, Engineer, private property owner	HMGP, BRIC, Rehabilitation of High Hazard Dam Program, private owner	Dam failure avoided, meet safety requirements	High	1 year	High	SIP	SP
2022-Woolwich-002	High Hill Road	<p><b>Problem:</b> A section of High Hill Road floods during heavy rains and with high tides.</p> <p><b>Solution:</b> The Township will complete an engineering study to determine if raising the elevation of High Hill Road is possible. Roadway raising would need to take place without increasing the runoff and flooding risk to adjacent private properties. If roadway raising is able to be implemented and is cost-effective, the Township will complete the action.</p>	Existing	Severe Storm, Flood, Nor'Easter, Hurricane	1	Engineer	FEMA HMGP, BRIC, Township budget	Reduction in flooding frequency	TBD by engineering study	Within 5 years	High	SIP	PP



Project Number	Mitigation Initiative Name	Description of Problem and Solution	New or Existing Assets ?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Timeline	Priority	Mitigation Category	CRS Category
2022-Woolwich-003	Repetitive Loss Mitigation	<p><b>Problem:</b> Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The Township has 1 repetitive loss property, but other properties may be impacted by flooding as well.</p> <p><b>Solution:</b> Conduct outreach to 10 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).</p>	Existing	Severe Storm, Flood	1, 2, 3	NFIP Floodplain Administrator, supported by homeowners	FEMA HMGP and FMA, local cost share by residents	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.	\$1 Million	3 years	High	SIP	PP
2022-Woolwich-004	Dryden Driving Bridge	<p><b>Problem:</b> Dryden Driving Bridge at Russell Mill Road and Winding Way is an older bridge that will eventually need replacement at a higher standard.</p> <p><b>Solution:</b> The Engineer will identify design deficiencies and assess and carry out replacement or retrofit of the Dryden Driving Bridge.</p>	Existing	Severe Storm, Flood	1, 2	Engineer	FEMA HMGP, BRIC, Township budget	Reduces flood risk to life, maintain access for emergency services	High	Within 5 years	High	SIP	PP



Project Number	Mitigation Initiative Name	Description of Problem and Solution	New or Existing Assets ?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Costs	Timeline	Priority	Mitigation Category	CRS Category
2022-Woolwich-005	Flood Damage Prevention Ordinance Update	<p><b>Problem:</b> The current flood damage prevention ordinance does not meet the state's recommendation for a code-coordinated flood damage prevention ordinance.</p> <p><b>Solution:</b> The Township will update the flood damage prevention ordinance using the NJ DEP's model code coordinated ordinance to create better coordination between NFIP implementation by the floodplain administrator, the New Jersey Flood Hazard Area Control Act (FHACA) implemented at the State level by the NJDEP, and the Uniform Construction Code (UCC) implemented by the Construction Official.</p>	New	Flood	1, 2	FPA, Administration	Township budget	Meet state and FEMA standards for flood damage prevention, reduce flood risk on new development	Staff time	6 months	Medium	LP R	PR
2022-Woolwich-006	Disaster Debris Management Plan	<p><b>Problem:</b> The Township lacks an adopted Disaster Debris Management Plan.</p> <p><b>Solution:</b> The Township will complete and adopt the in-progress Disaster Debris Management Plan.</p>	Existing	All Hazards	5	OEM	Township budget	Increased planning for post-disaster response and cleanup.	Staff time	6 months	High	LP R	ES

Notes:

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





**Acronyms and Abbreviations:**

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
EHP	Environmental Planning and Historic Preservation
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
BRIC	Building Resilient Infrastructure and Communities Program

**Timeline:**

*The time required for completion of the project upon implementation*

**Cost:**

*The estimated cost for implementation.*

**Benefits:**

*A description of the estimated benefits, either quantitative and/or qualitative.*

**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 9.25-17. Summary Evaluation and Action Priority

Project Number	Project Name	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
2022-Woolwich-001	Oliphant's Mill Dam	1	1	1	1	1	0	0	1	1	1	1	1	1	1	12	High
2022-Woolwich-002	High Hill Road	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2022-Woolwich-003	Repetitive Loss Mitigation	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High
2022-Woolwich-004	Dryden Driving Bridge	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2022-Woolwich-005	Flood Damage Prevention Ordinance Update	0	1	1	1	1	1	1	1	1	1	0	1	1	1	12	High
2022-Woolwich-006	Develop Disaster Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High

Note: Section 6 (Mitigation Strategy), which conveys guidance on prioritizing mitigation actions.  
Low (0-4), Medium (5-8), High (9-14).

**!** This action has been identified as being of highest importance to the municipality and an action that the municipality would like to complete as soon as funding is received.



## 9.25.8 Action Worksheets

The following action worksheets have been developed by the Township of Woolwich to aid in the submittal of grant applications to support the funding of high priority proposed actions. The State of New Jersey requires at least two projects be developed with action worksheets.

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Action Worksheet			
<b>Project Name:</b>	Oliphant's Mill Dam		
<b>Project Number:</b>	2022-Woolwich-001		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Dam Failure, Flood		
<b>Description of the Problem:</b>	Oliphant's Mill Dam is degraded and requires rehabilitation to prevent failure. Failure would impact at least one property. The dam is privately owned but the Township will work to assist the property owner as failure would impact Oliphant's Mill Road.		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	The Township will work with the private owner to provide input on necessary repairs and improvements, secure funding, and implement the desired actions.		
<b>Is this project related to a Critical Facility or Lifeline?</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
<b>Level of Protection:</b>	500-year flood	<b>Estimated Benefits (losses avoided):</b>	Dam failure avoided, meet safety requirements
<b>Useful Life:</b>	50 years	<b>Goals Met:</b>	1, 2, 7
<b>Estimated Cost:</b>	High	<b>Mitigation Action Type:</b>	Structure and Infrastructure Project
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	1 year
<b>Estimated Time Required for Project Implementation:</b>	2 years	<b>Potential Funding Sources:</b>	HMGP, BRIC, Rehabilitation of High Hazard Dam Program, private owner
<b>Responsible Organization:</b>	Township of Woolwich OEM, Engineer, private property owner	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation Planning
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Repair Only	High	May result in continued future damages
	Remove Dam	High	Dam cannot be removed for safety reason.
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Action Worksheet		
<b>Project Name:</b>	Oliphant's Mill Dam	
<b>Project Number:</b>	2022-Woolwich-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project protects life from dam failure
Property Protection	1	Project protects property from dam failure
Cost-Effectiveness	1	
Technical	1	
Political	1	There is public support for the project
Legal	0	The Township requires the legal cooperation of the private owner to complete the project
Fiscal	0	The project requires funding support
Environmental	1	Prevents environmental damage that would be caused by dam failure
Social	1	
Administrative	1	
Multi-Hazard	1	Dam Failure, Flood
Timeline	1	1 year
Agency Champion	1	Township of Woolwich OEM, Engineer, private property owner
Other Community Objectives	1	
<b>Total</b>	12	
<b>Priority (High/Med/Low)</b>	High	



Action Worksheet			
<b>Project Name:</b>	High Hill Road		
<b>Project Number:</b>	2022-Woolwich-002		
<b>Risk / Vulnerability</b>			
<b>Hazard(s) of Concern:</b>	Severe Storm, Flood, Nor'Easter, Hurricane		
<b>Description of the Problem:</b>	A section of High Hill Road floods during heavy rains and with high tides.		
<b>Action or Project Intended for Implementation</b>			
<b>Description of the Solution:</b>	The Township will complete an engineering study to determine if raising the elevation of High Hill Road is possible. Roadway raising would need to take place without increasing the runoff and flooding risk to adjacent private properties. If roadway raising is able to be implemented and is cost-effective, the Township will complete the action.		
<b>Is this project related to a Critical Facility?</b>		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<b>Level of Protection:</b>	Roadway raised	<b>Estimated Benefits (losses avoided):</b>	Reduction in flooding frequency
<b>Useful Life:</b>	15 years	<b>Goals Met:</b>	1, 2
<b>Estimated Cost:</b>	TBD by engineering study	<b>Mitigation Action Type:</b>	Structure and Infrastructure Project
<b>Plan for Implementation</b>			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	Within 5 years
<b>Estimated Time Required for Project Implementation:</b>	3 months	<b>Potential Funding Sources:</b>	FEMA HMGP, BRIC, Township budget
<b>Responsible Organization:</b>	Engineer	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard mitigation planning
<b>Three Alternatives Considered (including No Action)</b>			
<b>Alternatives:</b>	<b>Action</b>	<b>Estimated Cost</b>	<b>Evaluation</b>
	No Action	\$0	Problem continues.
	Retreat from roadway end		
	Replace bulkhead but not raise road		Roadway flooding still likely
<b>Progress Report (for plan maintenance)</b>			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Action Worksheet		
<b>Project Name:</b>	Brown's Lane	
<b>Project Number:</b>	2020-Bellport-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will allow for maintained emergency access during flooding events
Property Protection	1	Project will protect roadway from flood damage
Cost-Effectiveness	1	
Technical	1	The project is technically feasible
Political	1	
Legal	1	The Township has the legal authority to complete the project
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Hurricane, Nor'Easter, Severe Storm, Severe Winter Storm
Timeline	0	Within 5 years
Agency Champion	1	Engineer
Other Community Objectives	1	
<b>Total</b>	12	
<b>Priority (High/Med/Low)</b>	High	





Action Worksheet			
<b>Project Name:</b>	Repetitive Loss Mitigation		
<b>Project Number:</b>	2022-Woolwich-003		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Severe Storm, Flood		
<b>Description of the Problem:</b>	Frequent flooding events have resulted in damages to residential properties. These properties have been repetitively flooded as documented by paid NFIP claims. The Township has 1 repetitive loss property, but other properties may be impacted by flooding as well.		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	Conduct outreach to 10 flood-prone property owners, including RL/SRL property owners and provide information on mitigation alternatives. After preferred mitigation measures are identified, collect required property-owner information and develop a FEMA grant application and BCA to obtain funding to implement acquisition/purchase/moving/elevating residential homes in the flood prone areas that experience frequent flooding (high risk areas).		
<b>Is this project related to a Critical Facility or Lifeline?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Level of Protection:</b>	1% annual chance flood event + freeboard ( <i>in accordance with flood ordinance</i> )	<b>Estimated Benefits (losses avoided):</b>	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.
<b>Useful Life:</b>	Acquisition: Lifetime Elevation: 30 years (residential)	<b>Goals Met:</b>	1, 2, 3
<b>Estimated Cost:</b>	\$1 Million	<b>Mitigation Action Type:</b>	Structure and Infrastructure Project
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	6-12 months
<b>Estimated Time Required for Project Implementation:</b>	Three years	<b>Potential Funding Sources:</b>	FEMA HMGP and FMA, local cost share by residents
<b>Responsible Organization:</b>	NFIP Floodplain Administrator, supported by homeowners	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation
Three Alternatives Considered (including No Action)			
<b>Alternatives:</b>	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes	\$500,000	When this area floods, the entire area is impacted; elevating homes would not eliminate the problem and still lead to road closures and impassable roads
	Elevate roads	\$500,000	Elevated roadways would not protect the homes from flood damages
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Action Worksheet		
<b>Project Name:</b>	Repetitive Loss Mitigation	
<b>Project Number:</b>	2022-Woolwich-003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Families moved out of high-risk flood areas.
Property Protection	1	Properties removed from high-risk flood areas.
Cost-Effectiveness	1	Cost-effective project
Technical	1	Technically feasible project
Political	1	
Legal	1	The Township has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	0	Project would remove families from the flood prone areas of the Township.
Administrative	0	
Multi-Hazard	1	Severe Storm, Flood
Timeline	0	
Agency Champion	1	NFIP Floodplain Administrator, supported by homeowners
Other Community Objectives	1	
<b>Total</b>	10	
<b>Priority (High/Med/Low)</b>	High	



Action Worksheet			
<b>Project Name:</b>	Dryden Driving Bridge		
<b>Project Number:</b>	2022-Woolwich-004		
Risk / Vulnerability			
<b>Hazard(s) of Concern:</b>	Severe Storm, Flood		
<b>Description of the Problem:</b>	Dryden Driving Bridge at Russell Mill Road and Winding Way is an older bridge that will eventually need replacement at a higher standard.		
Action or Project Intended for Implementation			
<b>Description of the Solution:</b>	The Engineer will identify design deficiencies and assess and carry out replacement or retrofit of the Dryden Driving Bridge.		
<b>Is this project related to a Critical Facility or Lifeline?</b>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
<b>Level of Protection:</b>	• 500-year event	<b>Estimated Benefits (losses avoided):</b>	Infrastructure protected from hazard damages
<b>Useful Life:</b>	• 25 years	<b>Goals Met:</b>	
<b>Estimated Cost:</b>	• High	<b>Mitigation Action Type:</b>	Structure and Infrastructure Project
Plan for Implementation			
<b>Prioritization:</b>	High	<b>Desired Timeframe for Implementation:</b>	Within 5 years
<b>Estimated Time Required for Project Implementation:</b>	Within 5 years	<b>Potential Funding Sources:</b>	FEMA HMGP, BRIC, Township budget
<b>Responsible Organization:</b>	Engineer	<b>Local Planning Mechanisms to be Used in Implementation if any:</b>	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Remove bridges and causeways	High	Loss of access
	Rebuild all bridges and causeways	High	Costly and unnecessary.
Progress Report (for plan maintenance)			
<b>Date of Status Report:</b>			
<b>Report of Progress:</b>			
<b>Update Evaluation of the Problem and/or Solution:</b>			



Action Worksheet		
<b>Project Name:</b>	Dryden Driving Bridge	
<b>Project Number:</b>	2022-Woolwich-004	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Reduces flood risk to life, maintain access for emergency services
Property Protection	1	Reduces damage risk to bridges and causeways
Cost-Effectiveness	1	Cost-effective project
Technical	1	Technically feasible project
Political	1	
Legal	1	The Township has the legal authority to conduct the project.
Fiscal	0	Project will require grant funding.
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Severe Storm, Flood
Timeline	0	Within 5 years
Agency Champion	1	Engineer
Other Community Objectives	1	
<b>Total</b>	12	
<b>Priority (High/Med/Low)</b>	High	